

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

Ausdruckprotokolle GGU RETAIN - Inhaltsverzeichnis

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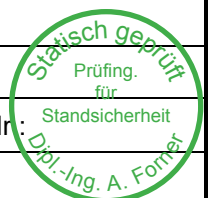
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Anlage D2 Schnitt 4R..... D2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... D2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... D2/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... D2/13</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... D2/19</p> <p>5 LF 3 (BS-T, mit Lasten)..... D2/26</p> <p>6 LF 4 (BS-P, mit Lasten) D2/32</p> <p>7 LF 5 (BS-T, mit Lasten)..... D2/38</p> <p>Anlage E2 Schnitt 5R..... E2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... E2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... E2/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....E2/13</p> <p>4 LF 2.2 (BS-T, mit Lasten).....E2/19</p> <p>5 LF 3 (BS-T, mit Lasten).....E2/25</p> <p>6 LF 4 (BS-P, mit Lasten)E2/31</p> <p>7 LF 5 (BS-T, mit Lasten).....E2/37</p> <p>Anlage F2 Schnitt 6R..... F2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... F2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... F2/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... F2/13</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... F2/19</p> <p>5 LF 3 (BS-T, mit Lasten)..... F2/26</p> <p>6 LF 4 (BS-P, mit Lasten) F2/32</p> <p>7 LF 5 (BS-T, mit Lasten)..... F2/38</p> <p>Anlage G2 Schnitt 7R..... G2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... G2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... G2/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... G2/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... G2/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... G2/25</p> <p>6 LF 4 (BS-P, mit Lasten) G2/31</p> <p>7 LF 5 (BS-T, mit Lasten)..... G2/37</p>		
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Anlage H2 Schnitt 8R..... H2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... H2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... H2/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... H2/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... H2/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... H2/24</p> <p>6 LF 4 (BS-P, mit Lasten) H2/30</p> <p>7 LF 5 (BS-T, mit Lasten)..... H2/36</p> <p>Anlage I2 Schnitt 9R..... I2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... I2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... I2/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... I2/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... I2/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... I2/25</p> <p>6 LF 4 (BS-P, mit Lasten) I2/31</p> <p>7 LF 5 (BS-T, mit Lasten)..... I2/37</p> <p>Anlage J2 Schnitt 1L..... J2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... J2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... J2/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... J2/11</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... J2/17</p> <p>5 LF 3 (BS-T, mit Lasten)..... J2/23</p> <p>6 LF 4 (BS-P, mit Lasten) J2/29</p> <p>7 LF 5 (BS-T, mit Lasten)..... J2/35</p> <p>Anlage K2 Schnitt 2L..... K2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... K2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... K2/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... K2/11</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... K2/17</p> <p>5 LF 3 (BS-T, mit Lasten)..... K2/23</p> <p>6 LF 4 (BS-P, mit Lasten) K2/29</p> <p>7 LF 5 (BS-T, mit Lasten)..... K2/35</p>		
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Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Anlage L2 Schnitt 3L..... L2/1</p> <p>1 LF 1 (BS-T) L2/1</p> <p>2 LF 2 (BS-T) L2/10</p> <p>3 LF 3 (BS-T) L2/19</p> <p>4 LF 4 (BS-P) L2/28</p> <p>Anlage M2 Schnitt 4L.....M2/1</p> <p>1 LF 1 (BS-T) M2/1</p> <p>2 LF 2 (BS-T) M2/11</p> <p>3 LF 3 (BS-T) M2/21</p> <p>4 LF 4 (BS-P) M2/31</p> <p>Anlage N2 Schnitt 5L..... N2/1</p> <p>1 LF 1 (BS-T) N2/1</p> <p>2 LF 2 (BS-T) N2/10</p> <p>3 LF 3 (BS-T) N2/20</p> <p>4 LF 4 (BS-P) N2/30</p> <p>Anlage O2 Schnitt 6L..... O2/1</p> <p>1 LF 1 (BS-T) O2/1</p> <p>2 LF 2 (BS-T) O2/10</p> <p>3 LF 3 (BS-T) O2/19</p> <p>4 LF 4 (BS-P) O2/28</p> <p>Anlage P2 Schnitt 7L..... P2/1</p> <p>1 LF 1 (BS-T) P2/1</p> <p>2 LF 2 (BS-T) P2/10</p> <p>3 LF 3 (BS-T) P2/20</p> <p>4 LF 4 (BS-P) P2/30</p>		
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Anlage Q2 Schnitt 8L..... Q2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... Q2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... Q2/8</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... Q2/16</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... Q2/24</p> <p>5 LF 3 (BS-T, mit Lasten)..... Q2/32</p> <p>6 LF 4 (BS-P, mit Lasten) Q2/40</p> <p>Anlage R2 Schnitt 9L..... R2/1</p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... R2/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... R2/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... R2/13</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... R2/20</p> <p>5 LF 3 (BS-T, mit Lasten)..... R2/27</p> <p>6 LF 4 (BS-P, mit Lasten) R2/34</p> <p>7 LF 5 (BS-T, mit Lasten)..... R2/41</p> <p>Anlage S2 Schnitt 10 S2/1</p> <p>Schlussblatt S2/2</p>		
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Anlage A2 Schnitt 1R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 10_BS 1_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 3.00 4.57 1.57 1.73 1.65 0.86 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 106.00 103.94 10.000 10.000 103.94 102.84 5.000 5.000 102.84 80.00 50.000 50.000</div> <div>Ausnutzungsgrad mue = 369.842 / 1347.082 = 0.275 Bettungslager Bh,d = 369.842 kN/m Erdwiderstand Eph,d = 1347.082 kN/m</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/19.
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.450</td><td>0.000</td><td>7.404</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.000</td><td>7.404</td><td>10.736</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>10.736</td><td>14.438</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>14.438</td><td>14.632</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>14.632</td><td>16.386</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.410</td><td>16.386</td><td>18.684</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.066</td><td>18.684</td><td>20.025</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.940</td><td>20.025</td><td>22.213</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.448</td><td>26.872</td><td>37.468</td><td>5.00</td><td>5.00</td></tr><tr><td>103.448</td><td>103.202</td><td>37.468</td><td>42.766</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.840</td><td>42.766</td><td>44.306</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.441</td><td>32.752</td><td>34.390</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>101.742</td><td>34.390</td><td>37.255</td><td>5.00</td><td>5.00</td></tr><tr><td>101.742</td><td>101.443</td><td>37.255</td><td>38.484</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.444</td><td>38.484</td><td>42.578</td><td>5.00</td><td>5.00</td></tr><tr><td>100.444</td><td>99.446</td><td>42.578</td><td>46.672</td><td>5.00</td><td>5.00</td></tr><tr><td>99.446</td><td>98.448</td><td>46.672</td><td>50.766</td><td>5.00</td><td>5.00</td></tr><tr><td>98.448</td><td>98.099</td><td>50.766</td><td>52.199</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.199</td><td>126.432</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>103.94</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.84</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.45</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.00</td><td>-32.19</td><td>-58.52</td></tr><tr><td>105.00</td><td>104.41</td><td>-58.52</td><td>-76.69</td></tr><tr><td>104.41</td><td>104.07</td><td>-76.69</td><td>-87.28</td></tr><tr><td>104.07</td><td>103.94</td><td>-87.28</td><td>-91.17</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.450	0.000	7.404	0.00	0.00	106.450	106.000	7.404	10.736	0.00	0.00	106.000	105.500	10.736	14.438	0.00	0.00	105.500	105.450	14.438	14.632	0.00	0.50	105.450	105.000	14.632	16.386	0.50	5.00	105.000	104.410	16.386	18.684	5.00	5.00	104.410	104.066	18.684	20.025	5.00	5.00	104.066	103.940	20.025	22.213	5.00	5.00	103.940	103.448	26.872	37.468	5.00	5.00	103.448	103.202	37.468	42.766	5.00	5.00	103.202	102.840	42.766	44.306	5.00	5.00	102.840	102.441	32.752	34.390	5.00	5.00	102.441	101.742	34.390	37.255	5.00	5.00	101.742	101.443	37.255	38.484	5.00	5.00	101.443	100.444	38.484	42.578	5.00	5.00	100.444	99.446	42.578	46.672	5.00	5.00	99.446	98.448	46.672	50.766	5.00	5.00	98.448	98.099	50.766	52.199	5.00	5.00	98.099	80.000	52.199	126.432	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	103.94	5.005	5.388	30.000	-20.01	18.10	2	102.84	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.45	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.00	-32.19	-58.52	105.00	104.41	-58.52	-76.69	104.41	104.07	-76.69	-87.28	104.07	103.94	-87.28	-91.17	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																										
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103.940	103.448	26.872	37.468	5.00	5.00																																																																																																																																																																																																																																																																																																															
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102.840	102.441	32.752	34.390	5.00	5.00																																																																																																																																																																																																																																																																																																															
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101.742	101.443	37.255	38.484	5.00	5.00																																																																																																																																																																																																																																																																																																															
101.443	100.444	38.484	42.578	5.00	5.00																																																																																																																																																																																																																																																																																																															
100.444	99.446	42.578	46.672	5.00	5.00																																																																																																																																																																																																																																																																																																															
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																			

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>103.94 103.45 -62.48 -70.29</div> <div>103.45 103.20 -70.29 -74.19</div> <div>103.20 102.84 -74.19 -79.93</div> <div>102.84 102.44 -143.95 -160.92</div> <div>102.44 101.74 -160.92 -190.62</div> <div>101.74 101.44 -190.62 -203.35</div> <div>101.44 100.44 -203.35 -245.77</div> <div>100.44 99.45 -245.77 -288.19</div> <div>99.45 98.45 -288.19 -330.62</div> <div>98.45 98.10 -330.62 -345.47</div> <div>98.10 80.00 -345.47 -1114.70</div> <div>Schnittgrößen (Bemessungswerte)</div> <div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.45 -23.3 -4.3 -1.4</div><div>106.00 -34.8 -9.0 -4.3</div><div>105.50 -42.1 -5.8 -8.7</div><div>105.45 -42.6 -5.1 -9.0</div><div>105.00 -47.5 -1.2 -10.2</div><div>104.41 -54.5 -0.4 -10.5</div><div>104.07 -58.8 -1.4 -10.8</div><div>103.94 -60.5 -2.1 -11.0</div><div>103.45 -69.7 -17.6 -15.6</div><div>103.20 -74.3 -27.8 -21.1</div><div>102.84 -81.2 -44.5 -34.2</div><div>102.44 -75.2 -25.1 -47.9</div><div>101.74 -67.4 0.1 -56.1</div><div>101.44 -65.1 7.7 -54.8</div><div>100.44 -60.5 21.7 -38.8</div><div>99.45 -59.9 20.8 -16.5</div><div>98.45 -62.4 7.5 -1.3</div><div>98.10 -63.9 0.0 0.0</div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.45 -20.3 -3.7 -1.2</div><div>106.00 -30.3 -7.8 -3.8</div><div>105.50 -36.6 -5.1 -7.6</div><div>105.45 -37.1 -4.5 -7.8</div><div>105.00 -41.4 -1.1 -8.9</div><div>104.41 -47.4 -0.3 -9.2</div><div>104.07 -51.2 -1.2 -9.4</div><div>103.94 -52.6 -1.8 -9.6</div><div>103.45 -60.6 -15.2 -13.6</div><div>103.20 -64.7 -24.0 -18.4</div><div>102.84 -70.7 -38.4 -29.6</div><div>102.44 -65.4 -21.7 -41.5</div><div>101.74 -58.7 0.1 -48.5</div><div>101.44 -56.6 6.7 -47.5</div><div>100.44 -52.6 18.8 -33.6</div><div>99.45 -52.1 18.0 -14.2</div><div>98.45 -54.3 6.5 -1.2</div><div>98.10 -55.6 0.0 0.0</div></div></div> <div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.45 -20.3 -3.7 -1.2</div><div>106.00 -30.3 -7.8 -3.8</div><div>105.50 -36.6 -5.1 -7.6</div><div>105.45 -37.1 -4.5 -7.8</div><div>105.00 -41.4 -1.1 -8.9</div><div>104.41 -47.4 -0.3 -9.2</div><div>104.07 -51.2 -1.2 -9.4</div><div>103.94 -52.6 -1.8 -9.6</div><div>103.45 -60.6 -15.2 -13.6</div></div></div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																									
Auftraggeber:		Stadtverwaltung Leipzig																											
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																									
<div><div><div>103.20</div><div>-64.7</div><div>-24.0</div><div>-18.4</div></div><div><div>102.84</div><div>-70.7</div><div>-38.4</div><div>-29.6</div></div><div><div>102.44</div><div>-65.4</div><div>-21.7</div><div>-41.5</div></div><div><div>101.74</div><div>-58.7</div><div>0.1</div><div>-48.5</div></div><div><div>101.44</div><div>-56.6</div><div>6.7</div><div>-47.5</div></div><div><div>100.44</div><div>-52.6</div><div>18.8</div><div>-33.6</div></div><div><div>99.45</div><div>-52.1</div><div>18.0</div><div>-14.2</div></div><div><div>98.45</div><div>-54.3</div><div>6.5</div><div>-1.2</div></div><div><div>98.10</div><div>-55.6</div><div>0.0</div><div>0.0</div></div></div> <div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.07</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.94</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.20</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.84</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.74</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div></div> <div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>107.45</div><div>-3.5</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-3.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-2.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-2.7</div><div>10.00</div><div>27.10</div><div>42.79</div></div><div><div>105.50</div><div>-2.7</div><div>10.00</div><div>26.90</div><div>47.55</div></div><div><div>105.50</div><div>-2.7</div><div>10.00</div><div>26.90</div><div>47.55</div></div><div><div>105.45</div><div>-2.7</div><div>10.00</div><div>26.70</div><div>52.30</div></div><div><div>105.45</div><div>-2.7</div><div>10.00</div><div>26.70</div><div>52.30</div></div><div><div>105.40</div><div>-2.7</div><div>10.00</div><div>26.50</div><div>57.06</div></div><div><div>105.05</div><div>-2.5</div><div>10.00</div><div>25.11</div><div>90.34</div></div><div><div>105.00</div><div>-2.5</div><div>10.00</div><div>24.91</div><div>95.10</div></div><div><div>105.00</div><div>-2.5</div><div>10.00</div><div>24.91</div><div>95.10</div></div><div><div>104.95</div><div>-2.5</div><div>10.00</div><div>24.72</div><div>97.56</div></div><div><div>104.46</div><div>-2.3</div><div>10.00</div><div>22.80</div><div>122.16</div></div><div><div>104.41</div><div>-2.3</div><div>10.00</div><div>22.61</div><div>124.62</div></div><div><div>104.41</div><div>-2.3</div><div>10.00</div><div>22.61</div><div>124.62</div></div><div><div>104.36</div><div>-2.2</div><div>10.00</div><div>22.42</div><div>127.08</div></div><div><div>104.12</div><div>-2.1</div><div>10.00</div><div>21.48</div><div>139.38</div></div><div><div>104.07</div><div>-2.1</div><div>10.00</div><div>21.30</div><div>141.84</div></div><div><div>104.07</div><div>-2.1</div><div>10.00</div><div>21.30</div><div>141.84</div></div><div><div>104.02</div><div>-2.1</div><div>10.00</div><div>21.14</div><div>143.94</div></div><div><div>103.98</div><div>-2.1</div><div>10.00</div><div>20.98</div><div>146.05</div></div><div><div>103.94</div><div>-2.1</div><div>10.00</div><div>20.82</div><div>148.15</div></div><div><div>103.94</div><div>-2.1</div><div>5.00</div><div>10.41</div><div>101.53</div></div><div><div>103.89</div><div>-2.1</div><div>5.00</div><div>10.32</div><div>102.80</div></div><div><div>103.50</div><div>-1.9</div><div>5.00</div><div>9.58</div><div>112.95</div></div><div><div>103.45</div><div>-1.9</div><div>5.00</div><div>9.49</div><div>114.22</div></div><div><div>103.45</div><div>-1.9</div><div>5.00</div><div>9.49</div><div>114.22</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage A2</td><td colspan="2">Schnitt 1R</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">1</td><td colspan="2">LF 1.1 (BS-T, ohne Lasten)</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr> <tr><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr>						Schnitt:		Anlage A2		Schnitt 1R		Kapitel:		1		LF 1.1 (BS-T, ohne Lasten)		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025							
Schnitt:		Anlage A2		Schnitt 1R																									
Kapitel:		1		LF 1.1 (BS-T, ohne Lasten)																									
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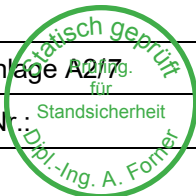
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																															
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<table><tr><td>103.40</td><td>-1.9</td><td>5.00</td><td>9.40</td><td>115.49</td></tr><tr><td>103.25</td><td>-1.8</td><td>5.00</td><td>9.13</td><td>119.29</td></tr><tr><td>103.20</td><td>-1.8</td><td>5.00</td><td>9.04</td><td>120.56</td></tr><tr><td>103.20</td><td>-1.8</td><td>5.00</td><td>9.04</td><td>120.56</td></tr><tr><td>103.15</td><td>-1.8</td><td>5.00</td><td>8.95</td><td>121.90</td></tr><tr><td>102.89</td><td>-1.7</td><td>5.00</td><td>8.49</td><td>128.56</td></tr><tr><td>102.84</td><td>-1.7</td><td>5.00</td><td>8.40</td><td>129.89</td></tr><tr><td>102.84</td><td>-1.7</td><td>50.00</td><td>83.97</td><td>233.92</td></tr><tr><td>102.79</td><td>-1.7</td><td>50.00</td><td>83.11</td><td>237.37</td></tr><tr><td>102.49</td><td>-1.6</td><td>50.00</td><td>78.08</td><td>258.05</td></tr><tr><td>102.44</td><td>-1.5</td><td>50.00</td><td>77.27</td><td>261.50</td></tr><tr><td>102.44</td><td>-1.5</td><td>50.00</td><td>77.27</td><td>261.50</td></tr><tr><td>102.39</td><td>-1.5</td><td>50.00</td><td>76.47</td><td>264.95</td></tr><tr><td>101.79</td><td>-1.4</td><td>50.00</td><td>67.59</td><td>306.31</td></tr><tr><td>101.74</td><td>-1.3</td><td>50.00</td><td>66.92</td><td>309.76</td></tr><tr><td>101.74</td><td>-1.3</td><td>50.00</td><td>66.92</td><td>309.76</td></tr><tr><td>101.69</td><td>-1.3</td><td>50.00</td><td>66.25</td><td>313.20</td></tr><tr><td>101.49</td><td>-1.3</td><td>50.00</td><td>63.70</td><td>326.99</td></tr><tr><td>101.44</td><td>-1.3</td><td>50.00</td><td>63.09</td><td>330.44</td></tr><tr><td>101.44</td><td>-1.3</td><td>50.00</td><td>63.09</td><td>330.44</td></tr><tr><td>101.39</td><td>-1.2</td><td>50.00</td><td>62.49</td><td>333.89</td></tr><tr><td>100.49</td><td>-1.1</td><td>50.00</td><td>53.22</td><td>395.93</td></tr><tr><td>100.44</td><td>-1.1</td><td>50.00</td><td>52.79</td><td>399.38</td></tr><tr><td>100.44</td><td>-1.1</td><td>50.00</td><td>52.79</td><td>399.38</td></tr><tr><td>100.39</td><td>-1.0</td><td>50.00</td><td>52.36</td><td>402.82</td></tr><tr><td>99.50</td><td>-0.9</td><td>50.00</td><td>45.63</td><td>464.87</td></tr><tr><td>99.45</td><td>-0.9</td><td>50.00</td><td>45.29</td><td>468.32</td></tr><tr><td>99.45</td><td>-0.9</td><td>50.00</td><td>45.29</td><td>468.32</td></tr><tr><td>99.40</td><td>-0.9</td><td>50.00</td><td>44.96</td><td>471.76</td></tr><tr><td>98.50</td><td>-0.8</td><td>50.00</td><td>39.35</td><td>533.81</td></tr><tr><td>98.45</td><td>-0.8</td><td>50.00</td><td>39.05</td><td>537.26</td></tr><tr><td>98.45</td><td>-0.8</td><td>50.00</td><td>39.05</td><td>537.26</td></tr><tr><td>98.40</td><td>-0.8</td><td>50.00</td><td>38.75</td><td>540.70</td></tr><tr><td>98.15</td><td>-0.7</td><td>50.00</td><td>37.23</td><td>557.94</td></tr><tr><td>98.10</td><td>-0.7</td><td>50.00</td><td>36.93</td><td>561.38</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.00693640 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p>			103.40	-1.9	5.00	9.40	115.49	103.25	-1.8	5.00	9.13	119.29	103.20	-1.8	5.00	9.04	120.56	103.20	-1.8	5.00	9.04	120.56	103.15	-1.8	5.00	8.95	121.90	102.89	-1.7	5.00	8.49	128.56	102.84	-1.7	5.00	8.40	129.89	102.84	-1.7	50.00	83.97	233.92	102.79	-1.7	50.00	83.11	237.37	102.49	-1.6	50.00	78.08	258.05	102.44	-1.5	50.00	77.27	261.50	102.44	-1.5	50.00	77.27	261.50	102.39	-1.5	50.00	76.47	264.95	101.79	-1.4	50.00	67.59	306.31	101.74	-1.3	50.00	66.92	309.76	101.74	-1.3	50.00	66.92	309.76	101.69	-1.3	50.00	66.25	313.20	101.49	-1.3	50.00	63.70	326.99	101.44	-1.3	50.00	63.09	330.44	101.44	-1.3	50.00	63.09	330.44	101.39	-1.2	50.00	62.49	333.89	100.49	-1.1	50.00	53.22	395.93	100.44	-1.1	50.00	52.79	399.38	100.44	-1.1	50.00	52.79	399.38	100.39	-1.0	50.00	52.36	402.82	99.50	-0.9	50.00	45.63	464.87	99.45	-0.9	50.00	45.29	468.32	99.45	-0.9	50.00	45.29	468.32	99.40	-0.9	50.00	44.96	471.76	98.50	-0.8	50.00	39.35	533.81	98.45	-0.8	50.00	39.05	537.26	98.45	-0.8	50.00	39.05	537.26	98.40	-0.8	50.00	38.75	540.70	98.15	-0.7	50.00	37.23	557.94	98.10	-0.7	50.00	36.93	561.38
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Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_k = 176.93 \text{ kN/m}$</p> <p>$G'_{k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 53.13 \text{ kN/m}$ ($E_{ah,k} = 284.29 \text{ kN/m}$)</p> <p>$B_{v,k} = 124.34$</p> <p>Summe $V_{k} = 105.72 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k} [\text{kN/m}^2]$</th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>106.00</td> <td>103.94</td> <td>0.00</td> <td>S1: Auffüllungen</td> </tr> <tr> <td>103.94</td> <td>102.84</td> <td>0.00</td> <td>S2: Auelehm</td> </tr> <tr> <td>102.84</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 260.70 / 1.40 = 186.21 \text{ kN/m}$</p> <p>$R_{d} = R_{b,d} + R_{s1,d} = 1051.26 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.10 + 0.00 = 273.41 \text{ kN/m}$</p> <p>$\Rightarrow \mu = V_d / R_d = 273.41 / 1051.26 = 0.26$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	103.94	0.00	S1: Auffüllungen	103.94	102.84	0.00	S2: Auelehm	102.84	98.10	55.00	s3: Flussskies, -sand
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Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/6																
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025																
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 11_BS 1_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 3.00 4.57 1.57 1.73 1.65 0.86 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 4.75 107.45 107.45 107.45 102.60 100.48 nein 2 110.00 0.00 2.00 107.45 107.45 107.45 105.39 104.49 ja Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 106.00 103.94 10.000 10.000 103.94 102.84 5.000 5.000 102.84 80.00 50.000 50.000</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



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<div>Ausnutzungsgrad $\mu_e = 582.078 / 1086.356 = 0.536$ Bettungslager $B_{h,d} = 582.078 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1086.356 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>46.780</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.450</td><td>46.780</td><td>54.166</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.000</td><td>54.166</td><td>57.873</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>57.873</td><td>62.067</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.447</td><td>62.067</td><td>62.327</td><td>0.00</td><td>0.53</td></tr><tr><td>105.447</td><td>105.394</td><td>62.327</td><td>62.586</td><td>0.53</td><td>1.06</td></tr><tr><td>105.394</td><td>105.000</td><td>62.586</td><td>45.901</td><td>1.06</td><td>5.00</td></tr><tr><td>105.000</td><td>104.487</td><td>45.901</td><td>24.147</td><td>5.00</td><td>5.00</td></tr><tr><td>104.487</td><td>104.434</td><td>24.147</td><td>24.404</td><td>5.00</td><td>5.00</td></tr><tr><td>104.434</td><td>104.066</td><td>24.404</td><td>26.201</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.940</td><td>26.201</td><td>28.513</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.448</td><td>34.965</td><td>46.183</td><td>5.00</td><td>5.00</td></tr><tr><td>103.448</td><td>103.202</td><td>46.183</td><td>51.792</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.840</td><td>51.793</td><td>53.789</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.596</td><td>39.509</td><td>40.730</td><td>5.00</td><td>5.00</td></tr><tr><td>102.596</td><td>102.422</td><td>40.730</td><td>41.306</td><td>5.00</td><td>5.00</td></tr><tr><td>102.422</td><td>102.372</td><td>41.306</td><td>41.427</td><td>5.00</td><td>5.00</td></tr><tr><td>102.372</td><td>101.426</td><td>41.427</td><td>43.714</td><td>5.00</td><td>5.00</td></tr><tr><td>101.426</td><td>100.479</td><td>43.714</td><td>46.002</td><td>5.00</td><td>5.00</td></tr><tr><td>100.479</td><td>100.429</td><td>46.002</td><td>46.206</td><td>5.00</td><td>5.00</td></tr><tr><td>100.429</td><td>99.438</td><td>46.206</td><td>50.274</td><td>5.00</td><td>5.00</td></tr><tr><td>99.438</td><td>98.446</td><td>50.274</td><td>54.341</td><td>5.00</td><td>5.00</td></tr><tr><td>98.446</td><td>98.099</td><td>54.341</td><td>55.765</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>55.765</td><td>129.999</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>$w(\text{oben})$</th><th>$w(\text{unten})$</th><th>$z(\text{oben})$</th><th>$z(\text{unten})$</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> 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Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																																			
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105.447	105.394	62.327	62.586	0.53	1.06																																																																																																																																																																																																																																																																																																								
105.394	105.000	62.586	45.901	1.06	5.00																																																																																																																																																																																																																																																																																																								
105.000	104.487	45.901	24.147	5.00	5.00																																																																																																																																																																																																																																																																																																								
104.487	104.434	24.147	24.404	5.00	5.00																																																																																																																																																																																																																																																																																																								
104.434	104.066	24.404	26.201	5.00	5.00																																																																																																																																																																																																																																																																																																								
104.066	103.940	26.201	28.513	5.00	5.00																																																																																																																																																																																																																																																																																																								
103.940	103.448	34.965	46.183	5.00	5.00																																																																																																																																																																																																																																																																																																								
103.448	103.202	46.183	51.792	5.00	5.00																																																																																																																																																																																																																																																																																																								
103.202	102.840	51.793	53.789	5.00	5.00																																																																																																																																																																																																																																																																																																								
102.840	102.596	39.509	40.730	5.00	5.00																																																																																																																																																																																																																																																																																																								
102.596	102.422	40.730	41.306	5.00	5.00																																																																																																																																																																																																																																																																																																								
102.422	102.372	41.306	41.427	5.00	5.00																																																																																																																																																																																																																																																																																																								
102.372	101.426	41.427	43.714	5.00	5.00																																																																																																																																																																																																																																																																																																								
101.426	100.479	43.714	46.002	5.00	5.00																																																																																																																																																																																																																																																																																																								
100.479	100.429	46.002	46.206	5.00	5.00																																																																																																																																																																																																																																																																																																								
100.429	99.438	46.206	50.274	5.00	5.00																																																																																																																																																																																																																																																																																																								
99.438	98.446	50.274	54.341	5.00	5.00																																																																																																																																																																																																																																																																																																								
98.446	98.099	54.341	55.765	5.00	5.00																																																																																																																																																																																																																																																																																																								
98.099	80.000	55.765	129.999	5.00	5.00																																																																																																																																																																																																																																																																																																								
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																										
0.00	0.00	107.45	106.00																																																																																																																																																																																																																																																																																																										
Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ																																																																																																																																																																																																																																																																																																							
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1	103.94	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																																																																																							
2	102.84	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																							
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																							
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																								
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																																																																																																								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																								
<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.45</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.37</td></tr><tr><td>105.45</td><td>105.39</td><td>-32.37</td><td>-35.49</td></tr><tr><td>105.39</td><td>105.00</td><td>-35.49</td><td>-58.52</td></tr><tr><td>105.00</td><td>104.49</td><td>-58.52</td><td>-74.33</td></tr><tr><td>104.49</td><td>104.43</td><td>-74.33</td><td>-75.95</td></tr><tr><td>104.43</td><td>104.07</td><td>-75.95</td><td>-87.28</td></tr><tr><td>104.07</td><td>103.94</td><td>-87.28</td><td>-91.17</td></tr><tr><td>103.94</td><td>103.45</td><td>-62.48</td><td>-70.29</td></tr><tr><td>103.45</td><td>103.20</td><td>-70.29</td><td>-74.19</td></tr><tr><td>103.20</td><td>102.84</td><td>-74.19</td><td>-79.93</td></tr><tr><td>102.84</td><td>102.60</td><td>-143.95</td><td>-154.33</td></tr><tr><td>102.60</td><td>102.42</td><td>-154.33</td><td>-161.71</td></tr><tr><td>102.42</td><td>102.37</td><td>-161.71</td><td>-163.83</td></tr><tr><td>102.37</td><td>101.43</td><td>-163.83</td><td>-204.06</td></tr><tr><td>101.43</td><td>100.48</td><td>-204.06</td><td>-244.30</td></tr><tr><td>100.48</td><td>100.43</td><td>-244.30</td><td>-246.41</td></tr><tr><td>100.43</td><td>99.44</td><td>-246.41</td><td>-288.56</td></tr><tr><td>99.44</td><td>98.45</td><td>-288.56</td><td>-330.71</td></tr><tr><td>98.45</td><td>98.10</td><td>-330.71</td><td>-345.47</td></tr><tr><td>98.10</td><td>80.00</td><td>-345.47</td><td>-1114.70</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td></tr><tr><td>106.45</td><td>-45.2</td><td>-64.4</td><td>-31.4</td></tr><tr><td>106.00</td><td>-66.6</td><td>-96.3</td><td>-67.5</td></tr><tr><td>105.50</td><td>-74.0</td><td>-120.8</td><td>-122.9</td></tr><tr><td>105.45</td><td>-74.0</td><td>-121.8</td><td>-129.3</td></tr><tr><td>105.39</td><td>-73.9</td><td>-122.6</td><td>-135.8</td></tr><tr><td>105.00</td><td>-69.4</td><td>-114.7</td><td>-183.3</td></tr><tr><td>104.49</td><td>-61.0</td><td>-85.5</td><td>-234.9</td></tr><tr><td>104.43</td><td>-60.3</td><td>-82.2</td><td>-239.3</td></tr><tr><td>104.07</td><td>-56.3</td><td>-62.2</td><td>-265.8</td></tr><tr><td>103.94</td><td>-55.3</td><td>-56.6</td><td>-273.3</td></tr><tr><td>103.45</td><td>-61.2</td><td>-64.5</td><td>-302.6</td></tr><tr><td>103.20</td><td>-64.5</td><td>-72.0</td><td>-319.4</td></tr><tr><td>102.84</td><td>-69.7</td><td>-86.1</td><td>-347.9</td></tr><tr><td>102.60</td><td>-51.5</td><td>-39.6</td><td>-363.1</td></tr><tr><td>102.42</td><td>-40.2</td><td>-10.8</td><td>-367.4</td></tr><tr><td>102.37</td><td>-37.1</td><td>-3.1</td><td>-367.8</td></tr><tr><td>101.43</td><td>2.8</td><td>97.7</td><td>-316.6</td></tr><tr><td>100.48</td><td>16.2</td><td>129.0</td><td>-204.7</td></tr><tr><td>100.43</td><td>16.3</td><td>129.1</td><td>-198.3</td></tr><tr><td>99.44</td><td>9.1</td><td>104.4</td><td>-78.5</td></tr><tr><td>98.45</td><td>-10.8</td><td>34.4</td><td>-6.1</td></tr><tr><td>98.10</td><td>-15.4</td><td>0.0</td><td>0.0</td></tr></tbody></table>			von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.45	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.37	105.45	105.39	-32.37	-35.49	105.39	105.00	-35.49	-58.52	105.00	104.49	-58.52	-74.33	104.49	104.43	-74.33	-75.95	104.43	104.07	-75.95	-87.28	104.07	103.94	-87.28	-91.17	103.94	103.45	-62.48	-70.29	103.45	103.20	-70.29	-74.19	103.20	102.84	-74.19	-79.93	102.84	102.60	-143.95	-154.33	102.60	102.42	-154.33	-161.71	102.42	102.37	-161.71	-163.83	102.37	101.43	-163.83	-204.06	101.43	100.48	-204.06	-244.30	100.48	100.43	-244.30	-246.41	100.43	99.44	-246.41	-288.56	99.44	98.45	-288.56	-330.71	98.45	98.10	-330.71	-345.47	98.10	80.00	-345.47	-1114.70	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	-0.1	0.0	106.45	-45.2	-64.4	-31.4	106.00	-66.6	-96.3	-67.5	105.50	-74.0	-120.8	-122.9	105.45	-74.0	-121.8	-129.3	105.39	-73.9	-122.6	-135.8	105.00	-69.4	-114.7	-183.3	104.49	-61.0	-85.5	-234.9	104.43	-60.3	-82.2	-239.3	104.07	-56.3	-62.2	-265.8	103.94	-55.3	-56.6	-273.3	103.45	-61.2	-64.5	-302.6	103.20	-64.5	-72.0	-319.4	102.84	-69.7	-86.1	-347.9	102.60	-51.5	-39.6	-363.1	102.42	-40.2	-10.8	-367.4	102.37	-37.1	-3.1	-367.8	101.43	2.8	97.7	-316.6	100.48	16.2	129.0	-204.7	100.43	16.3	129.1	-198.3	99.44	9.1	104.4	-78.5	98.45	-10.8	34.4	-6.1	98.10	-15.4	0.0	0.0
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Statisch geprüft

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Dipl.-Ing. A. Forner

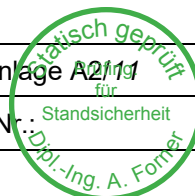


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																								
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<tr><td>103.45</td><td>-53.9</td><td>-52.3</td><td>-237.8</td></tr> <tr><td>103.20</td><td>-56.8</td><td>-59.2</td><td>-251.5</td></tr> <tr><td>102.84</td><td>-61.5</td><td>-71.9</td><td>-275.2</td></tr> <tr><td>102.60</td><td>-46.8</td><td>-34.4</td><td>-288.0</td></tr> <tr><td>102.42</td><td>-37.6</td><td>-11.0</td><td>-291.9</td></tr> <tr><td>102.37</td><td>-35.2</td><td>-4.8</td><td>-292.3</td></tr> <tr><td>101.43</td><td>-2.7</td><td>77.0</td><td>-253.0</td></tr> <tr><td>100.48</td><td>8.5</td><td>103.0</td><td>-164.1</td></tr> <tr><td>100.43</td><td>8.6</td><td>103.1</td><td>-158.9</td></tr> <tr><td>99.44</td><td>3.1</td><td>83.7</td><td>-63.0</td></tr> <tr><td>98.45</td><td>-12.6</td><td>27.7</td><td>-4.9</td></tr> <tr><td>98.10</td><td>-16.5</td><td>0.0</td><td>0.0</td></tr> </table> <p>Schnittgrößen (g+w,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr> 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</table>				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	-0.1	0.0	106.45	-37.3	-50.4	-24.6	106.00	-55.0	-75.6	-52.8	105.50	-61.6	-95.0	-96.4	105.45	-61.7	-95.8	-101.4	105.39	-61.7	-96.4	-106.6	105.00	-58.6	-89.9	-143.9	104.49	-52.4	-66.9	-184.3	104.43	-51.9	-64.4	-187.7	104.07	-49.2	-48.8	-208.5	103.94	-48.5	-44.5	-214.3	103.45	-53.9	-52.3	-237.8	103.20	-56.8	-59.2	-251.5	102.84	-61.5	-71.9	-275.2	102.60	-46.8	-34.4	-288.0	102.42	-37.6	-11.0	-291.9	102.37	-35.2	-4.8	-292.3	101.43	-2.7	77.0	-253.0	100.48	8.5	103.0	-164.1	100.43	8.6	103.1	-158.9	99.44	3.1	83.7	-63.0	98.45	-12.6	27.7	-4.9	98.10	-16.5	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.45	-21.7	-7.6	-3.2	106.00	-32.4	-13.5	-7.9	105.50	-40.5	-17.8	-16.0	105.45	-41.1	-17.8	-16.9	105.39	-41.7	-17.7	-17.9	105.00	-44.8	-15.0	-24.4	104.49	-47.6	-10.4	-30.8	104.43	-47.9	-10.1	-31.3	104.07	-50.5	-9.1	-34.8	103.94	-51.4	-9.2	-36.0	103.45	-58.8	-24.5	-44.0	103.20	-62.6	-34.6	-51.2	102.84	-68.3	-51.1	-66.7	102.60	-62.1	-34.8	-77.1	102.42	-58.1	-24.6	-82.3	102.37	-57.0	-21.8	-83.4	101.43	-41.7	16.8	-83.8	100.48	-34.3	33.1	-58.6	100.43	-34.1	33.5	-56.9	99.44	-33.1	30.5	-23.7	98.45	-37.1	10.7	-1.9	98.10	-39.7	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	-0.1	0.0	106.45	-15.6	-42.8	-21.4	106.00	-22.6	-62.1	-45.0	105.50	-21.1	-77.2	-80.4	105.45	-20.5	-78.0	-84.5	105.39	-19.9	-78.6	-88.7	105.00	-13.8	-75.0	-119.4	104.49	-4.8	-56.6	-153.5	104.43	-4.0	-54.3	-156.4	104.07	1.3	-39.8	-173.7	103.94	2.9	-35.3	-178.4
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<table><tr><td>103.45</td><td>4.9</td><td>-27.8</td><td>-193.8</td></tr><tr><td>103.20</td><td>5.8</td><td>-24.7</td><td>-200.3</td></tr><tr><td>102.84</td><td>6.8</td><td>-20.8</td><td>-208.5</td></tr><tr><td>102.60</td><td>15.3</td><td>0.5</td><td>-210.9</td></tr><tr><td>102.42</td><td>20.5</td><td>13.5</td><td>-209.7</td></tr><tr><td>102.37</td><td>21.8</td><td>17.0</td><td>-208.9</td></tr><tr><td>101.43</td><td>39.0</td><td>60.2</td><td>-169.2</td></tr><tr><td>100.48</td><td>42.8</td><td>69.8</td><td>-105.5</td></tr><tr><td>100.43</td><td>42.7</td><td>69.6</td><td>-102.0</td></tr><tr><td>99.44</td><td>36.2</td><td>53.2</td><td>-39.3</td></tr><tr><td>98.45</td><td>24.5</td><td>17.0</td><td>-3.0</td></tr><tr><td>98.10</td><td>23.2</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-11.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-11.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-11.8</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-10.6</td><td>4.02</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-10.5</td><td>4.02</td><td>42.24</td><td>47.55</td></tr><tr><td>105.50</td><td>-10.5</td><td>4.53</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-10.4</td><td>4.53</td><td>46.89</td><td>52.61</td></tr><tr><td>105.45</td><td>-10.4</td><td>5.08</td><td>52.61</td><td>52.61</td></tr><tr><td>105.39</td><td>-10.2</td><td>5.08</td><td>51.87</td><td>57.67</td></tr><tr><td>105.39</td><td>-10.2</td><td>5.65</td><td>57.67</td><td>57.67</td></tr><tr><td>105.34</td><td>-10.1</td><td>5.65</td><td>56.92</td><td>62.35</td></tr><tr><td>105.05</td><td>-9.3</td><td>9.74</td><td>90.43</td><td>90.42</td></tr><tr><td>105.00</td><td>-9.2</td><td>9.74</td><td>89.16</td><td>95.10</td></tr><tr><td>105.00</td><td>-9.2</td><td>10.00</td><td>91.56</td><td>95.10</td></tr><tr><td>104.95</td><td>-9.0</td><td>10.00</td><td>90.21</td><td>97.67</td></tr><tr><td>104.54</td><td>-8.0</td><td>10.00</td><td>79.62</td><td>118.21</td></tr><tr><td>104.49</td><td>-7.8</td><td>10.00</td><td>78.33</td><td>120.78</td></tr><tr><td>104.49</td><td>-7.8</td><td>10.00</td><td>78.33</td><td>120.78</td></tr><tr><td>104.43</td><td>-7.7</td><td>10.00</td><td>77.02</td><td>123.41</td></tr><tr><td>104.43</td><td>-7.7</td><td>10.00</td><td>77.02</td><td>123.41</td></tr><tr><td>104.38</td><td>-7.6</td><td>10.00</td><td>75.71</td><td>126.05</td></tr><tr><td>104.12</td><td>-6.9</td><td>10.00</td><td>69.33</td><td>139.20</td></tr><tr><td>104.07</td><td>-6.8</td><td>10.00</td><td>68.08</td><td>141.84</td></tr><tr><td>104.07</td><td>-6.8</td><td>10.00</td><td>68.08</td><td>141.84</td></tr><tr><td>104.02</td><td>-6.7</td><td>10.00</td><td>67.09</td><td>143.94</td></tr><tr><td>103.98</td><td>-6.6</td><td>10.00</td><td>66.11</td><td>146.05</td></tr><tr><td>103.94</td><td>-6.5</td><td>10.00</td><td>65.13</td><td>148.15</td></tr><tr><td>103.94</td><td>-6.5</td><td>5.00</td><td>32.57</td><td>101.53</td></tr><tr><td>103.89</td><td>-6.4</td><td>5.00</td><td>32.00</td><td>102.80</td></tr><tr><td>103.50</td><td>-5.5</td><td>5.00</td><td>27.62</td><td>112.95</td></tr><tr><td>103.45</td><td>-5.4</td><td>5.00</td><td>27.09</td><td>114.22</td></tr><tr><td>103.45</td><td>-5.4</td><td>5.00</td><td>27.09</td><td>114.22</td></tr><tr><td>103.40</td><td>-5.3</td><td>5.00</td><td>26.57</td><td>115.49</td></tr><tr><td>103.25</td><td>-5.0</td><td>5.00</td><td>25.03</td><td>119.29</td></tr><tr><td>103.20</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>120.56</td></tr><tr><td>103.20</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>120.56</td></tr><tr><td>103.15</td><td>-4.8</td><td>5.00</td><td>24.01</td><td>121.90</td></tr><tr><td>102.89</td><td>-4.3</td><td>5.00</td><td>21.49</td><td>128.56</td></tr><tr><td>102.84</td><td>-4.2</td><td>5.00</td><td>21.01</td><td>129.89</td></tr><tr><td>102.84</td><td>-4.2</td><td>50.00</td><td>210.08</td><td>233.92</td></tr><tr><td>102.79</td><td>-4.1</td><td>50.00</td><td>205.56</td><td>237.30</td></tr><tr><td>102.64</td><td>-3.8</td><td>50.00</td><td>192.32</td><td>247.42</td></tr><tr><td>102.60</td><td>-3.8</td><td>50.00</td><td>188.02</td><td>250.79</td></tr><tr><td>102.60</td><td>-3.8</td><td>50.00</td><td>188.02</td><td>250.79</td></tr><tr><td>102.54</td><td>-3.7</td><td>50.00</td><td>183.00</td><td>254.78</td></tr></table>						103.45	4.9	-27.8	-193.8	103.20	5.8	-24.7	-200.3	102.84	6.8	-20.8	-208.5	102.60	15.3	0.5	-210.9	102.42	20.5	13.5	-209.7	102.37	21.8	17.0	-208.9	101.43	39.0	60.2	-169.2	100.48	42.8	69.8	-105.5	100.43	42.7	69.6	-102.0	99.44	36.2	53.2	-39.3	98.45	24.5	17.0	-3.0	98.10	23.2	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-16.0	-	-	-	107.45	-16.0	-	-	-	107.45	-16.0	-	-	-	107.40	-15.9	-	-	-	106.50	-13.3	-	-	-	106.45	-13.2	-	-	-	106.45	-13.2	-	-	-	106.38	-13.0	-	-	-	106.05	-12.0	-	-	-	106.00	-11.9	0.00	0.00	0.00	106.00	-11.9	0.00	0.00	0.00	105.95	-11.8	0.00	0.00	4.75	105.55	-10.6	4.02	42.80	42.79	105.50	-10.5	4.02	42.24	47.55	105.50	-10.5	4.53	47.55	47.55	105.45	-10.4	4.53	46.89	52.61	105.45	-10.4	5.08	52.61	52.61	105.39	-10.2	5.08	51.87	57.67	105.39	-10.2	5.65	57.67	57.67	105.34	-10.1	5.65	56.92	62.35	105.05	-9.3	9.74	90.43	90.42	105.00	-9.2	9.74	89.16	95.10	105.00	-9.2	10.00	91.56	95.10	104.95	-9.0	10.00	90.21	97.67	104.54	-8.0	10.00	79.62	118.21	104.49	-7.8	10.00	78.33	120.78	104.49	-7.8	10.00	78.33	120.78	104.43	-7.7	10.00	77.02	123.41	104.43	-7.7	10.00	77.02	123.41	104.38	-7.6	10.00	75.71	126.05	104.12	-6.9	10.00	69.33	139.20	104.07	-6.8	10.00	68.08	141.84	104.07	-6.8	10.00	68.08	141.84	104.02	-6.7	10.00	67.09	143.94	103.98	-6.6	10.00	66.11	146.05	103.94	-6.5	10.00	65.13	148.15	103.94	-6.5	5.00	32.57	101.53	103.89	-6.4	5.00	32.00	102.80	103.50	-5.5	5.00	27.62	112.95	103.45	-5.4	5.00	27.09	114.22	103.45	-5.4	5.00	27.09	114.22	103.40	-5.3	5.00	26.57	115.49	103.25	-5.0	5.00	25.03	119.29	103.20	-4.9	5.00	24.53	120.56	103.20	-4.9	5.00	24.53	120.56	103.15	-4.8	5.00	24.01	121.90	102.89	-4.3	5.00	21.49	128.56	102.84	-4.2	5.00	21.01	129.89	102.84	-4.2	50.00	210.08	233.92	102.79	-4.1	50.00	205.56	237.30	102.64	-3.8	50.00	192.32	247.42	102.60	-3.8	50.00	188.02	250.79	102.60	-3.8	50.00	188.02	250.79	102.54	-3.7	50.00	183.00	254.78
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105.45	-10.4	5.08	52.61	52.61																																																																																																																																																																																																																																																																																																																																									
105.39	-10.2	5.08	51.87	57.67																																																																																																																																																																																																																																																																																																																																									
105.39	-10.2	5.65	57.67	57.67																																																																																																																																																																																																																																																																																																																																									
105.34	-10.1	5.65	56.92	62.35																																																																																																																																																																																																																																																																																																																																									
105.05	-9.3	9.74	90.43	90.42																																																																																																																																																																																																																																																																																																																																									
105.00	-9.2	9.74	89.16	95.10																																																																																																																																																																																																																																																																																																																																									
105.00	-9.2	10.00	91.56	95.10																																																																																																																																																																																																																																																																																																																																									
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104.54	-8.0	10.00	79.62	118.21																																																																																																																																																																																																																																																																																																																																									
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103.94	-6.5	5.00	32.57	101.53																																																																																																																																																																																																																																																																																																																																									
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103.15	-4.8	5.00	24.01	121.90																																																																																																																																																																																																																																																																																																																																									
102.89	-4.3	5.00	21.49	128.56																																																																																																																																																																																																																																																																																																																																									
102.84	-4.2	5.00	21.01	129.89																																																																																																																																																																																																																																																																																																																																									
102.84	-4.2	50.00	210.08	233.92																																																																																																																																																																																																																																																																																																																																									
102.79	-4.1	50.00	205.56	237.30																																																																																																																																																																																																																																																																																																																																									
102.64	-3.8	50.00	192.32	247.42																																																																																																																																																																																																																																																																																																																																									
102.60	-3.8	50.00	188.02	250.79																																																																																																																																																																																																																																																																																																																																									
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102.54	-3.7	50.00	183.00	254.78																																																																																																																																																																																																																																																																																																																																									
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																		
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<table><tr><td>102.48</td><td>-3.6</td><td>50.00</td><td>178.07</td><td>258.78</td></tr><tr><td>102.42</td><td>-3.5</td><td>50.00</td><td>173.21</td><td>262.78</td></tr><tr><td>102.42</td><td>-3.5</td><td>50.00</td><td>173.21</td><td>262.78</td></tr><tr><td>102.37</td><td>-3.4</td><td>50.00</td><td>169.10</td><td>266.22</td></tr><tr><td>102.37</td><td>-3.4</td><td>50.00</td><td>169.10</td><td>266.22</td></tr><tr><td>102.32</td><td>-3.3</td><td>50.00</td><td>165.05</td><td>269.66</td></tr><tr><td>101.48</td><td>-2.1</td><td>50.00</td><td>105.43</td><td>328.16</td></tr><tr><td>101.43</td><td>-2.0</td><td>50.00</td><td>102.44</td><td>331.60</td></tr><tr><td>101.43</td><td>-2.0</td><td>50.00</td><td>102.44</td><td>331.60</td></tr><tr><td>101.38</td><td>-2.0</td><td>50.00</td><td>99.50</td><td>335.04</td></tr><tr><td>100.53</td><td>-1.1</td><td>50.00</td><td>56.86</td><td>393.54</td></tr><tr><td>100.48</td><td>-1.1</td><td>50.00</td><td>54.72</td><td>396.99</td></tr><tr><td>100.48</td><td>-1.1</td><td>50.00</td><td>54.72</td><td>396.99</td></tr><tr><td>100.43</td><td>-1.1</td><td>50.00</td><td>52.63</td><td>400.41</td></tr><tr><td>100.43</td><td>-1.1</td><td>50.00</td><td>52.63</td><td>400.41</td></tr><tr><td>100.38</td><td>-1.0</td><td>50.00</td><td>50.57</td><td>403.84</td></tr><tr><td>99.49</td><td>-0.4</td><td>50.00</td><td>17.97</td><td>465.49</td></tr><tr><td>99.44</td><td>-0.3</td><td>50.00</td><td>16.35</td><td>468.91</td></tr><tr><td>99.44</td><td>-0.3</td><td>50.00</td><td>16.35</td><td>468.91</td></tr><tr><td>99.39</td><td>-0.3</td><td>50.00</td><td>14.73</td><td>472.34</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-12.91</td><td>533.98</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-14.40</td><td>537.41</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-14.40</td><td>537.41</td></tr><tr><td>98.40</td><td>0.3</td><td>50.00</td><td>-15.90</td><td>540.83</td></tr><tr><td>98.15</td><td>0.5</td><td>50.00</td><td>-23.37</td><td>557.96</td></tr><tr><td>98.10</td><td>0.5</td><td>50.00</td><td>-24.87</td><td>561.38</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03452934 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 81.30 kN/m (Eah,k = 439.57 kN/m) Bv,k = 184.98 Summe V,k = 73.25 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>103.94</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>103.94</td><td>102.84</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.84</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 260.70 / 1.40 = 186.21 kN/m Rd = Rb,d + Rs1,d = 1051.26 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 96.43 + 0.00 = 308.74 kN/m ==> µ = V,d / Rd = 308.74 / 1051.26 = 0.29</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.48	-3.6	50.00	178.07	258.78	102.42	-3.5	50.00	173.21	262.78	102.42	-3.5	50.00	173.21	262.78	102.37	-3.4	50.00	169.10	266.22	102.37	-3.4	50.00	169.10	266.22	102.32	-3.3	50.00	165.05	269.66	101.48	-2.1	50.00	105.43	328.16	101.43	-2.0	50.00	102.44	331.60	101.43	-2.0	50.00	102.44	331.60	101.38	-2.0	50.00	99.50	335.04	100.53	-1.1	50.00	56.86	393.54	100.48	-1.1	50.00	54.72	396.99	100.48	-1.1	50.00	54.72	396.99	100.43	-1.1	50.00	52.63	400.41	100.43	-1.1	50.00	52.63	400.41	100.38	-1.0	50.00	50.57	403.84	99.49	-0.4	50.00	17.97	465.49	99.44	-0.3	50.00	16.35	468.91	99.44	-0.3	50.00	16.35	468.91	99.39	-0.3	50.00	14.73	472.34	98.50	0.3	50.00	-12.91	533.98	98.45	0.3	50.00	-14.40	537.41	98.45	0.3	50.00	-14.40	537.41	98.40	0.3	50.00	-15.90	540.83	98.15	0.5	50.00	-23.37	557.96	98.10	0.5	50.00	-24.87	561.38	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	103.94	0.00	S1: Auffüllungen	103.94	102.84	0.00	S2: Auelehm	102.84	98.10	55.00	s3: Flussskies, -sand
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Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																		



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																							
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 12_BS 1_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>3.00</td><td>4.57</td><td>1.57</td><td>1.73</td><td>1.65</td><td>0.86</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad $\mu_e = 291.532 / 421.009 = 0.692$ Bettungslager $B_{h,d} = 291.532$ kN/m Erdwiderstand $E_{ph,d} = 421.009$ kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	3.00	4.57	1.57	1.73	1.65	0.86	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
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Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																											
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<div>Anker und Steifen</div> <div>N_d' = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_d'</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-78.31</td><td>-67.77</td><td>-67.77</td><td>-7.47</td><td>6.900E+4</td><td>2.100E+7</td><td>-86.41</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-3.8</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-3.9</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-3.9</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-4.0</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-4.1</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-4.2</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-4.3</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-4.5</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-4.6</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-4.7</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-4.8</td><td>0.0</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-4.9</td><td>0.1</td><td>-78.31</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 1\Rechtes Ufer\10_BS 1_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0033</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{a,k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckkoordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>20.610</td><td>20.610</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.450</td><td>20.610</td><td>20.610</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>105.500</td><td>20.610</td><td>20.610</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>20.610</td><td>20.610</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>20.610</td><td>20.610</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.402</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>104.402</td><td>104.258</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>104.258</td><td>104.066</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.940</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.400</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>103.202</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _d '	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-78.31	-67.77	-67.77	-7.47	6.900E+4	2.100E+7	-86.41	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-3.8	0.0	-78.31	0.00	0.00	-0.90	106.95	-3.9	0.0	-78.31	0.00	0.00	-0.90	106.95	-3.9	0.0	-78.31	0.00	0.00	-0.80	106.95	-4.0	0.0	-78.31	0.00	0.00	-0.70	106.95	-4.1	0.0	-78.31	0.00	0.00	-0.60	106.95	-4.2	0.0	-78.31	0.00	0.00	-0.50	106.95	-4.3	0.0	-78.31	0.00	0.00	-0.40	106.95	-4.5	0.0	-78.31	0.00	0.00	-0.30	106.95	-4.6	0.0	-78.31	0.00	0.00	-0.20	106.95	-4.7	0.0	-78.31	0.00	0.00	-0.10	106.95	-4.8	0.0	-78.31	0.00	0.00	0.00	106.95	-4.9	0.1	-78.31	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0033	Schicht	UK	γ _{m,k}	γ _{a,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	20.610	20.610	0.00	0.00	106.950	106.450	20.610	20.610	0.00	0.00	106.450	105.500	20.610	20.610	0.00	0.00	105.500	105.450	20.610	20.610	0.00	0.50	105.450	105.000	20.610	20.610	0.50	5.00	105.000	104.402	17.175	17.175	5.00	5.00	104.402	104.258	17.175	17.175	5.00	5.00	104.258	104.066	17.175	17.175	5.00	5.00	104.066	103.940	17.175	17.175	5.00	5.00	103.940	103.400	17.175	17.175	5.00	5.00	103.400	103.202	17.175	17.175	5.00	5.00	Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/14	
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<table><tr><td>103.202</td><td>102.840</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.550</td><td>17.175</td><td>17.175</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>33.941</td><td>34.352</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>34.352</td><td>36.813</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>36.813</td><td>38.454</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.454</td><td>42.557</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>42.557</td><td>46.660</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>46.660</td><td>50.763</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>50.763</td><td>52.199</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.199</td><td>126.432</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.84</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-15.2</td><td>-11.9</td><td>-3.0</td><td>-78.3</td></tr><tr><td>106.95</td><td>-15.2</td><td>66.5</td><td>-3.0</td><td></td></tr><tr><td>106.45</td><td>-30.4</td><td>54.6</td><td>27.3</td><td></td></tr><tr><td>105.50</td><td>-59.3</td><td>32.1</td><td>68.5</td><td></td></tr><tr><td>105.45</td><td>-60.8</td><td>30.9</td><td>70.1</td><td></td></tr><tr><td>105.00</td><td>-74.5</td><td>18.7</td><td>81.3</td><td></td></tr><tr><td>104.40</td><td>-91.8</td><td>3.3</td><td>87.9</td><td></td></tr><tr><td>104.26</td><td>-95.9</td><td>-0.4</td><td>88.1</td><td></td></tr><tr><td>104.07</td><td>-101.5</td><td>-5.3</td><td>87.6</td><td></td></tr><tr><td>103.94</td><td>-105.2</td><td>-8.6</td><td>86.7</td><td></td></tr><tr><td>103.40</td><td>-119.8</td><td>-22.5</td><td>78.3</td><td></td></tr><tr><td>103.20</td><td>-125.1</td><td>-27.6</td><td>73.4</td><td></td></tr><tr><td>102.84</td><td>-134.9</td><td>-36.9</td><td>61.7</td><td></td></tr><tr><td>102.55</td><td>-143.5</td><td>-44.3</td><td>49.9</td><td></td></tr><tr><td>102.45</td><td>-146.3</td><td>-48.7</td><td>45.3</td><td></td></tr><tr><td>101.85</td><td>-152.3</td><td>-59.0</td><td>11.6</td><td></td></tr><tr><td>101.45</td><td>-150.0</td><td>-50.9</td><td>-10.7</td><td></td></tr><tr><td>100.45</td><td>-130.9</td><td>-0.1</td><td>-36.2</td><td></td></tr><tr><td>99.45</td><td>-121.0</td><td>22.6</td><td>-22.0</td><td></td></tr><tr><td>98.45</td><td>-122.6</td><td>11.6</td><td>-2.1</td><td></td></tr><tr><td>98.10</td><td>-125.8</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.202	102.840	17.175	17.175	5.00	5.00	102.840	102.550	17.175	17.175	5.00	5.00	102.550	102.450	33.941	34.352	5.00	5.00	102.450	101.850	34.352	36.813	5.00	5.00	101.850	101.450	36.813	38.454	5.00	5.00	101.450	100.449	38.454	42.557	5.00	5.00	100.449	99.449	42.557	46.660	5.00	5.00	99.449	98.449	46.660	50.763	5.00	5.00	98.449	98.099	50.763	52.199	5.00	5.00	98.099	80.000	52.199	126.432	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.84	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-15.2	-11.9	-3.0	-78.3	106.95	-15.2	66.5	-3.0		106.45	-30.4	54.6	27.3		105.50	-59.3	32.1	68.5		105.45	-60.8	30.9	70.1		105.00	-74.5	18.7	81.3		104.40	-91.8	3.3	87.9		104.26	-95.9	-0.4	88.1		104.07	-101.5	-5.3	87.6		103.94	-105.2	-8.6	86.7		103.40	-119.8	-22.5	78.3		103.20	-125.1	-27.6	73.4		102.84	-134.9	-36.9	61.7		102.55	-143.5	-44.3	49.9		102.45	-146.3	-48.7	45.3		101.85	-152.3	-59.0	11.6		101.45	-150.0	-50.9	-10.7		100.45	-130.9	-0.1	-36.2		99.45	-121.0	22.6	-22.0		98.45	-122.6	11.6	-2.1		98.10	-125.8	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																												
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																														
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																												
<div><div><div>101.450.00.00.0.0</div><div>100.450.00.0.0.0.0</div><div>99.450.00.0.0.0.0</div><div>98.450.00.0.0.0.0</div><div>98.100.00.0.0.0.0</div></div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div><div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.45</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.31</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.26</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.26</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.21</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.11</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.01</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.95</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.89</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.90</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.79</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-2.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-2.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-2.8</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-2.8</td><td>1.22</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-2.8</td><td>1.22</td><td>3.42</td><td>6.91</td></tr><tr><td>102.45</td><td>-2.8</td><td>2.47</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-2.8</td><td>2.47</td><td>6.84</td><td>10.36</td></tr><tr><td>101.90</td><td>-2.5</td><td>18.08</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-2.5</td><td>18.08</td><td>44.38</td><td>48.36</td></tr><tr><td>101.85</td><td>-2.5</td><td>19.70</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-2.4</td><td>19.70</td><td>47.78</td><td>51.81</td></tr><tr><td>101.50</td><td>-2.2</td><td>32.26</td><td>72.54</td><td>72.54</td></tr></table></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-4.3	-	-	-	107.40	-4.3	-	-	-	107.00	-4.3	-	-	-	106.95	-4.3	-	-	-	106.95	-4.3	-	-	-	106.90	-4.3	-	-	-	106.50	-4.2	-	-	-	106.45	-4.2	-	-	-	106.45	-4.2	-	-	-	106.40	-4.2	-	-	-	105.55	-4.0	-	-	-	105.50	-4.0	-	-	-	105.50	-4.0	-	-	-	105.45	-4.0	-	-	-	105.45	-4.0	-	-	-	105.40	-4.0	-	-	-	105.05	-3.9	-	-	-	105.00	-3.9	-	-	-	105.00	-3.9	-	-	-	104.95	-3.9	-	-	-	104.45	-3.7	-	-	-	104.40	-3.7	-	-	-	104.40	-3.7	-	-	-	104.35	-3.7	-	-	-	104.31	-3.7	-	-	-	104.26	-3.7	-	-	-	104.26	-3.7	-	-	-	104.21	-3.6	-	-	-	104.11	-3.6	-	-	-	104.07	-3.6	-	-	-	104.07	-3.6	-	-	-	104.01	-3.6	-	-	-	103.95	-3.5	-	-	-	103.94	-3.5	-	-	-	103.94	-3.5	-	-	-	103.89	-3.5	-	-	-	103.45	-3.3	-	-	-	103.40	-3.3	-	-	-	103.40	-3.3	-	-	-	103.35	-3.3	-	-	-	103.25	-3.2	-	-	-	103.20	-3.2	-	-	-	103.20	-3.2	-	-	-	103.15	-3.2	-	-	-	102.90	-3.0	-	-	-	102.84	-3.0	-	-	-	102.84	-3.0	-	-	-	102.79	-3.0	-	-	-	102.60	-2.9	-	-	-	102.55	-2.9	0.00	0.00	0.00	102.55	-2.9	0.00	0.00	0.00	102.50	-2.8	0.00	0.00	3.45	102.50	-2.8	1.22	3.45	3.45	102.45	-2.8	1.22	3.42	6.91	102.45	-2.8	2.47	6.91	6.91	102.40	-2.8	2.47	6.84	10.36	101.90	-2.5	18.08	44.91	44.91	101.85	-2.5	18.08	44.38	48.36	101.85	-2.5	19.70	48.36	48.36	101.80	-2.4	19.70	47.78	51.81	101.50	-2.2	32.26	72.54	72.54
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104.35	-3.7	-	-	-																																																																																																																																																																																																																																																																																																																												
104.31	-3.7	-	-	-																																																																																																																																																																																																																																																																																																																												
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102.45	-2.8	1.22	3.42	6.91																																																																																																																																																																																																																																																																																																																												
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102.40	-2.8	2.47	6.84	10.36																																																																																																																																																																																																																																																																																																																												
101.90	-2.5	18.08	44.91	44.91																																																																																																																																																																																																																																																																																																																												
101.85	-2.5	18.08	44.38	48.36																																																																																																																																																																																																																																																																																																																												
101.85	-2.5	19.70	48.36	48.36																																																																																																																																																																																																																																																																																																																												
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101.50	-2.2	32.26	72.54	72.54																																																																																																																																																																																																																																																																																																																												
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

101.45	-2.2	32.26	71.59	75.99
101.45	-2.2	34.24	76.00	75.99
101.40	-2.2	34.24	74.99	79.45
100.50	-1.7	50.00	83.84	141.63
100.45	-1.6	50.00	82.48	145.08
100.45	-1.6	50.00	82.48	145.08
100.40	-1.6	50.00	81.12	148.53
99.50	-1.2	50.00	57.67	210.71
99.45	-1.1	50.00	56.41	214.17
99.45	-1.1	50.00	56.41	214.17
99.40	-1.1	50.00	55.16	217.62
98.50	-0.7	50.00	33.15	279.80
98.45	-0.6	50.00	31.94	283.25
98.45	-0.6	50.00	31.94	283.25
98.40	-0.6	50.00	30.73	286.71
98.15	-0.5	50.00	24.69	303.98
98.10	-0.5	50.00	23.48	307.43

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.02768577$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 9.35 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$
 $G_{k} = 176.93$ kN/m
 $G'_{k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 53.13$ kN/m ($E_{ah,k} = 284.29$ kN/m)
 $B_{v,k} = 100.28$
Summe $V_{k} = 129.78$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m

Einwirkungen
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.10 + 0.00 = 273.41$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 273.41 / 1039.87 = 0.26$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage A2 Schnitt 1R	Seite Anlage A2/18
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 21118
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 13_BS 1_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 3.00 4.57 1.57 1.73 1.65 0.86 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 4.57 107.45 107.45 107.45 102.79 100.76 nein 2 110.00 0.00 2.00 107.45 107.45 107.45 105.39 104.49 ja (Verkehrslasten werden nicht umgelagert) Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/19
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																											
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																											
<div>Ausnutzungsgrad $\mu_e = 338.315 / 421.023 = 0.804$ Bettungslager $B_{h,d} = 338.315 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 421.023 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>N_d</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-225.25</td><td>-183.71</td><td>-93.15</td><td>-7.95</td><td>6.900E+4</td><td>2.100E+7</td><td>-254.61</td></tr></table> <div>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>N_d</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-3.8</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-4.1</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-4.1</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-4.4</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-4.8</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-5.1</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-5.4</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-5.7</td><td>0.0</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-6.1</td><td>0.1</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-6.4</td><td>0.1</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-6.7</td><td>0.1</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-7.0</td><td>0.1</td><td>-225.25</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 1\Rechtes Ufer\10_BS 1_LF1.1 (ohne Lasten).vrb eingeliesen. Anker/Steife Tiefe Vorverformung</div> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0033</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>26.893</td><td>69.758</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>69.758</td><td>69.758</td><td>0.00</td></tr><tr><td>106.950</td><td>106.450</td><td>69.758</td><td>69.758</td><td>0.00</td></tr><tr><td>106.450</td><td>105.500</td><td>69.758</td><td>69.758</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>69.758</td><td>69.758</td><td>0.50</td></tr><tr><td>105.450</td><td>105.394</td><td>69.758</td><td>69.758</td><td>1.06</td></tr><tr><td>105.394</td><td>105.000</td><td>69.758</td><td>51.151</td><td>1.06</td></tr><tr><td></td><td></td><td></td><td></td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-225.25	-183.71	-93.15	-7.95	6.900E+4	2.100E+7	-254.61	x	y	$w_{x,d}$	$w_{y,d}$	N_d	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-3.8	0.0	-225.25	0.00	0.00	-0.90	106.95	-4.1	0.0	-225.25	0.00	0.00	-0.90	106.95	-4.1	0.0	-225.25	0.00	0.00	-0.80	106.95	-4.4	0.0	-225.25	0.00	0.00	-0.70	106.95	-4.8	0.0	-225.25	0.00	0.00	-0.60	106.95	-5.1	0.0	-225.25	0.00	0.00	-0.50	106.95	-5.4	0.0	-225.25	0.00	0.00	-0.40	106.95	-5.7	0.0	-225.25	0.00	0.00	-0.30	106.95	-6.1	0.1	-225.25	0.00	0.00	-0.20	106.95	-6.4	0.1	-225.25	0.00	0.00	-0.10	106.95	-6.7	0.1	-225.25	0.00	0.00	0.00	106.95	-7.0	0.1	-225.25	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0033	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	26.893	69.758	0.00	107.448	106.950	69.758	69.758	0.00	106.950	106.450	69.758	69.758	0.00	106.450	105.500	69.758	69.758	0.00	105.500	105.450	69.758	69.758	0.50	105.450	105.394	69.758	69.758	1.06	105.394	105.000	69.758	51.151	1.06					5.00	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																																																			
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]																																																																																																																																																																																																																																																																																			
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[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																			
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																			
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																			
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																			
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[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																						
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																						
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																						
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																						
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107.450	107.448	26.893	69.758	0.00																																																																																																																																																																																																																																																																																									
107.448	106.950	69.758	69.758	0.00																																																																																																																																																																																																																																																																																									
106.950	106.450	69.758	69.758	0.00																																																																																																																																																																																																																																																																																									
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																			
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																			
<table><tr><td>105.000</td><td>104.693</td><td>46.669</td><td>32.142</td><td>5.00</td><td>5.00</td></tr><tr><td>104.693</td><td>104.487</td><td>32.142</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>104.487</td><td>104.402</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>104.402</td><td>104.066</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.940</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.400</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>103.202</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.840</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.789</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>102.789</td><td>102.550</td><td>22.411</td><td>22.411</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.422</td><td>40.539</td><td>40.954</td><td>5.00</td><td>5.00</td></tr><tr><td>102.422</td><td>101.869</td><td>40.954</td><td>42.251</td><td>5.00</td><td>5.00</td></tr><tr><td>101.869</td><td>101.416</td><td>42.251</td><td>43.312</td><td>5.00</td><td>5.00</td></tr><tr><td>101.416</td><td>100.761</td><td>43.312</td><td>44.845</td><td>5.00</td><td>5.00</td></tr><tr><td>100.761</td><td>100.410</td><td>44.845</td><td>46.287</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>46.287</td><td>50.408</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>50.408</td><td>54.529</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>54.529</td><td>55.765</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>55.765</td><td>129.999</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 107.45 102.55</p> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 3 80.00 6.006 6.054 32.500 -21.68 16.35</p> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.79 102.55 0.00 0.00 102.55 102.42 0.00 -5.43 102.42 101.87 -5.43 -28.96 101.87 101.42 -28.96 -48.22 101.42 100.76 -48.22 -76.03 100.76 100.41 -76.03 -90.97 100.41 99.40 -90.97 -133.68 99.40 98.40 -133.68 -176.38 98.40 98.10 -176.38 -189.19 98.10 80.00 -189.19 -958.43</p> <p>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 107.45 0.0 0.0 0.0 107.45 -0.1 -0.1 0.0 106.95 -26.6 -43.3 -10.8 -225.3 106.95 -26.6 182.0 -10.8 106.45 -53.3 138.7 69.4 105.50 -103.9 56.4 162.0 105.45 -106.6 52.0 164.7 105.39 -109.6 47.1 167.5 105.00 -128.9 16.3 179.7 104.69 -140.9 -0.3 182.0 104.49 -147.8 -8.1 181.1 104.40 -150.4 -10.8 180.3 104.07 -160.9 -21.5 174.9 103.94 -164.8 -25.5 171.9 103.40 -180.3 -42.6 153.6 103.20 -186.0 -48.9 144.5 102.84 -196.4 -60.4 124.7 102.79 -198.0 -62.1 121.6 102.55 -205.6 -69.6 105.8 102.42 -209.0 -76.0 96.5</p>								105.000	104.693	46.669	32.142	5.00	5.00	104.693	104.487	32.142	22.411	5.00	5.00	104.487	104.402	22.411	22.411	5.00	5.00	104.402	104.066	22.411	22.411	5.00	5.00	104.066	103.940	22.411	22.411	5.00	5.00	103.940	103.400	22.411	22.411	5.00	5.00	103.400	103.202	22.411	22.411	5.00	5.00	103.202	102.840	22.411	22.411	5.00	5.00	102.840	102.789	22.411	22.411	5.00	5.00	102.789	102.550	22.411	22.411	5.00	5.00	102.550	102.422	40.539	40.954	5.00	5.00	102.422	101.869	40.954	42.251	5.00	5.00	101.869	101.416	42.251	43.312	5.00	5.00	101.416	100.761	43.312	44.845	5.00	5.00	100.761	100.410	44.845	46.287	5.00	5.00	100.410	99.405	46.287	50.408	5.00	5.00	99.405	98.400	50.408	54.529	5.00	5.00	98.400	98.099	54.529	55.765	5.00	5.00	98.099	80.000	55.765	129.999	5.00	5.00
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>101.87</div><div>-214.3</div><div>-88.8</div><div>49.8</div></div><div><div>101.42</div><div>-211.4</div><div>-81.5</div><div>10.6</div></div><div><div>100.76</div><div>-195.7</div><div>-43.1</div><div>-31.9</div></div><div><div>100.41</div><div>-183.8</div><div>-14.2</div><div>-41.8</div></div><div><div>99.40</div><div>-164.0</div><div>29.2</div><div>-29.4</div></div><div><div>98.40</div><div>-165.1</div><div>15.1</div><div>-2.4</div></div><div><div>98.10</div><div>-169.3</div><div>0.0</div><div>0.0</div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-22.1</div><div>-34.8</div><div>-8.7</div><div>-183.7</div></div><div><div>106.95</div><div>-22.1</div><div>148.9</div><div>-8.7</div><div></div></div><div><div>106.45</div><div>-44.3</div><div>114.0</div><div>57.0</div><div></div></div><div><div>105.50</div><div>-86.4</div><div>47.7</div><div>133.9</div><div></div></div><div><div>105.45</div><div>-88.6</div><div>44.2</div><div>136.2</div><div></div></div><div><div>105.39</div><div>-91.1</div><div>40.3</div><div>138.5</div><div></div></div><div><div>105.00</div><div>-107.2</div><div>15.3</div><div>149.3</div><div></div></div><div><div>104.69</div><div>-117.5</div><div>1.6</div><div>151.8</div><div></div></div><div><div>104.49</div><div>-123.4</div><div>-5.0</div><div>151.4</div><div></div></div><div><div>104.40</div><div>-125.7</div><div>-7.3</div><div>150.9</div><div></div></div><div><div>104.07</div><div>-134.8</div><div>-16.6</div><div>146.8</div><div></div></div><div><div>103.94</div><div>-138.2</div><div>-20.0</div><div>144.5</div><div></div></div><div><div>103.40</div><div>-151.7</div><div>-34.8</div><div>129.7</div><div></div></div><div><div>103.20</div><div>-156.6</div><div>-40.2</div><div>122.3</div><div></div></div><div><div>102.84</div><div>-165.6</div><div>-50.2</div><div>105.9</div><div></div></div><div><div>102.79</div><div>-167.1</div><div>-51.6</div><div>103.3</div><div></div></div><div><div>102.55</div><div>-173.7</div><div>-58.1</div><div>90.2</div><div></div></div><div><div>102.42</div><div>-176.7</div><div>-63.6</div><div>82.5</div><div></div></div><div><div>101.87</div><div>-181.4</div><div>-75.0</div><div>43.2</div><div></div></div><div><div>101.42</div><div>-179.1</div><div>-69.2</div><div>10.0</div><div></div></div><div><div>100.76</div><div>-165.9</div><div>-36.9</div><div>-26.2</div><div></div></div><div><div>100.41</div><div>-155.7</div><div>-12.4</div><div>-34.7</div><div></div></div><div><div>99.40</div><div>-138.8</div><div>24.3</div><div>-24.6</div><div></div></div><div><div>98.40</div><div>-139.5</div><div>12.7</div><div>-2.0</div><div></div></div><div><div>98.10</div><div>-143.0</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-14.4</div><div>-13.4</div><div>-3.4</div><div>-93.1</div></div><div><div>106.95</div><div>-14.4</div><div>79.7</div><div>-3.4</div><div></div></div><div><div>106.45</div><div>-28.7</div><div>66.3</div><div>33.1</div><div></div></div><div><div>105.50</div><div>-56.0</div><div>40.7</div><div>83.9</div><div></div></div><div><div>105.45</div><div>-57.4</div><div>39.4</div><div>85.9</div><div></div></div><div><div>105.39</div><div>-59.1</div><div>37.8</div><div>88.1</div><div></div></div><div><div>105.00</div><div>-70.4</div><div>26.0</div><div>100.7</div><div></div></div><div><div>104.69</div><div>-78.7</div><div>17.6</div><div>107.4</div><div></div></div><div><div>104.49</div><div>-84.3</div><div>11.9</div><div>110.5</div><div></div></div><div><div>104.40</div><div>-86.6</div><div>9.6</div><div>111.4</div><div></div></div><div><div>104.07</div><div>-95.6</div><div>0.4</div><div>113.1</div><div></div></div><div><div>103.94</div><div>-99.1</div><div>-3.0</div><div>112.9</div><div></div></div><div><div>103.40</div><div>-112.5</div><div>-17.8</div><div>107.3</div><div></div></div><div><div>103.20</div><div>-117.5</div><div>-23.3</div><div>103.2</div><div></div></div><div><div>102.84</div><div>-126.5</div><div>-33.2</div><div>93.0</div><div></div></div><div><div>102.79</div><div>-127.9</div><div>-34.6</div><div>91.2</div><div></div></div><div><div>102.55</div><div>-134.6</div><div>-41.1</div><div>82.2</div><div></div></div><div><div>102.42</div><div>-137.5</div><div>-46.7</div><div>76.6</div><div></div></div><div><div>101.87</div><div>-143.2</div><div>-60.4</div><div>46.2</div><div></div></div><div><div>101.42</div><div>-142.5</div><div>-58.6</div><div>18.8</div><div></div></div><div><div>100.76</div><div>-132.5</div><div>-34.6</div><div>-13.2</div><div></div></div><div><div>100.41</div><div>-124.2</div><div>-14.7</div><div>-21.7</div><div></div></div><div><div>99.40</div><div>-109.5</div><div>16.4</div><div>-17.6</div><div></div></div><div><div>98.40</div><div>-108.4</div><div>9.4</div><div>-1.5</div><div></div></div><div><div>98.10</div><div>-110.6</div><div>0.0</div><div>0.0</div><div></div></div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage A2 Schnitt 1R</td><td colspan="2">Seite Anlage A2/22</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">4 LF 2.2 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage A2 Schnitt 1R		Seite Anlage A2/22		Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage A2 Schnitt 1R		Seite Anlage A2/22																			
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<div>Schnittgrößen (q,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>0.0</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-7.8</td><td>-21.4</td><td>-5.3</td><td>-90.6</td></tr><tr><td>106.95</td><td>-7.8</td><td>69.2</td><td>-5.3</td><td></td></tr><tr><td>106.45</td><td>-15.6</td><td>47.8</td><td>23.9</td><td></td></tr><tr><td>105.50</td><td>-30.4</td><td>7.0</td><td>49.9</td><td></td></tr><tr><td>105.45</td><td>-31.2</td><td>4.9</td><td>50.2</td><td></td></tr><tr><td>105.39</td><td>-32.1</td><td>2.5</td><td>50.4</td><td></td></tr><tr><td>105.00</td><td>-36.9</td><td>-10.7</td><td>48.6</td><td></td></tr><tr><td>104.69</td><td>-38.8</td><td>-16.0</td><td>44.3</td><td></td></tr><tr><td>104.49</td><td>-39.2</td><td>-17.0</td><td>40.9</td><td></td></tr><tr><td>104.40</td><td>-39.2</td><td>-17.0</td><td>39.5</td><td></td></tr><tr><td>104.07</td><td>-39.2</td><td>-17.0</td><td>33.8</td><td></td></tr><tr><td>103.94</td><td>-39.2</td><td>-17.0</td><td>31.6</td><td></td></tr><tr><td>103.40</td><td>-39.2</td><td>-17.0</td><td>22.5</td><td></td></tr><tr><td>103.20</td><td>-39.2</td><td>-17.0</td><td>19.1</td><td></td></tr><tr><td>102.84</td><td>-39.2</td><td>-17.0</td><td>13.0</td><td></td></tr><tr><td>102.79</td><td>-39.2</td><td>-17.0</td><td>12.1</td><td></td></tr><tr><td>102.55</td><td>-39.2</td><td>-17.0</td><td>8.1</td><td></td></tr><tr><td>102.42</td><td>-39.1</td><td>-16.9</td><td>5.9</td><td></td></tr><tr><td>101.87</td><td>-38.2</td><td>-14.6</td><td>-3.0</td><td></td></tr><tr><td>101.42</td><td>-36.6</td><td>-10.5</td><td>-8.7</td><td></td></tr><tr><td>100.76</td><td>-33.3</td><td>-2.3</td><td>-13.0</td><td></td></tr><tr><td>100.41</td><td>-31.5</td><td>2.2</td><td>-13.0</td><td></td></tr><tr><td>99.40</td><td>-29.3</td><td>7.9</td><td>-7.0</td><td></td></tr><tr><td>98.40</td><td>-31.1</td><td>3.3</td><td>-0.5</td><td></td></tr><tr><td>98.10</td><td>-32.4</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> <div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.39</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.39</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.34</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.54</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.49</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.49</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr></tbody></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	0.0	-0.1	0.0		106.95	-7.8	-21.4	-5.3	-90.6	106.95	-7.8	69.2	-5.3		106.45	-15.6	47.8	23.9		105.50	-30.4	7.0	49.9		105.45	-31.2	4.9	50.2		105.39	-32.1	2.5	50.4		105.00	-36.9	-10.7	48.6		104.69	-38.8	-16.0	44.3		104.49	-39.2	-17.0	40.9		104.40	-39.2	-17.0	39.5		104.07	-39.2	-17.0	33.8		103.94	-39.2	-17.0	31.6		103.40	-39.2	-17.0	22.5		103.20	-39.2	-17.0	19.1		102.84	-39.2	-17.0	13.0		102.79	-39.2	-17.0	12.1		102.55	-39.2	-17.0	8.1		102.42	-39.1	-16.9	5.9		101.87	-38.2	-14.6	-3.0		101.42	-36.6	-10.5	-8.7		100.76	-33.3	-2.3	-13.0		100.41	-31.5	2.2	-13.0		99.40	-29.3	7.9	-7.0		98.40	-31.1	3.3	-0.5		98.10	-32.4	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-5.9	-	-	-	107.45	-5.9	-	-	-	107.45	-5.9	-	-	-	107.40	-5.9	-	-	-	107.00	-5.9	-	-	-	106.95	-5.9	-	-	-	106.95	-5.9	-	-	-	106.90	-5.9	-	-	-	106.50	-5.9	-	-	-	106.45	-5.9	-	-	-	106.45	-5.9	-	-	-	106.38	-5.9	-	-	-	105.55	-5.9	-	-	-	105.50	-5.9	-	-	-	105.50	-5.9	-	-	-	105.45	-5.8	-	-	-	105.45	-5.8	-	-	-	105.39	-5.8	-	-	-	105.39	-5.8	-	-	-	105.34	-5.8	-	-	-	105.05	-5.7	-	-	-	105.00	-5.7	-	-	-	105.00	-5.7	-	-	-	104.95	-5.7	-	-	-	104.74	-5.6	-	-	-	104.69	-5.6	-	-	-	104.69	-5.6	-	-	-	104.64	-5.6	-	-	-	104.54	-5.6	-	-	-	104.49	-5.5	-	-	-	104.49	-5.5	-	-	-	104.45	-5.5	-	-	-	104.45	-5.5	-	-	-	104.40	-5.5	-	-	-	104.40	-5.5	-	-	-	104.35	-5.5	-	-	-
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																	
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<p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04882054 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p>							104.11	-5.4	-	-	-		104.07	-5.3	-	-	-		104.07	-5.3	-	-	-		104.01	-5.3	-	-	-		103.95	-5.3	-	-	-		103.94	-5.3	-	-	-		103.94	-5.3	-	-	-		103.89	-5.2	-	-	-		103.45	-5.0	-	-	-		103.40	-4.9	-	-	-		103.40	-4.9	-	-	-		103.35	-4.9	-	-	-		103.25	-4.8	-	-	-		103.20	-4.8	-	-	-		103.20	-4.8	-	-	-		103.15	-4.7	-	-	-		102.90	-4.5	-	-	-		102.84	-4.5	-	-	-		102.84	-4.5	-	-	-		102.79	-4.5	-	-	-		102.79	-4.5	-	-	-		102.74	-4.4	-	-	-		102.60	-4.3	-	-	-		102.55	-4.3	0.00	0.00	0.00		102.55	-4.3	0.00	0.00	0.00		102.51	-4.2	0.00	0.00	2.94		102.46	-4.2	1.41	5.88	5.88		102.42	-4.1	1.41	5.83	8.82		102.42	-4.1	2.13	8.82	8.82		102.37	-4.1	2.13	8.73	12.30		101.92	-3.7	11.81	43.59	43.59		101.87	-3.6	11.81	43.03	47.06		101.87	-3.6	12.92	47.07	47.06		101.82	-3.6	12.92	46.45	50.54		101.47	-3.3	22.97	74.88	74.88		101.42	-3.2	22.97	73.77	78.35		101.42	-3.2	24.39	78.35	78.35		101.37	-3.2	24.39	77.18	81.83		100.81	-2.6	45.59	120.07	120.07		100.76	-2.6	45.59	117.90	123.55		100.76	-2.6	47.78	123.55	123.55		100.71	-2.5	47.78	121.28	127.02		100.46	-2.3	50.00	115.12	144.36		100.41	-2.3	50.00	112.78	147.83		100.41	-2.3	50.00	112.78	147.83		100.36	-2.2	50.00	110.45	151.30		99.46	-1.4	50.00	69.77	213.75		99.40	-1.4	50.00	67.58	217.22		99.40	-1.4	50.00	67.58	217.22		99.35	-1.3	50.00	65.38	220.69		98.45	-0.5	50.00	26.53	283.14		98.40	-0.5	50.00	24.39	286.61		98.40	-0.5	50.00	24.39	286.61		98.35	-0.4	50.00	22.25	290.08		98.15	-0.3	50.00	13.69	303.96		98.10	-0.2	50.00	11.55	307.43	
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102.74	-4.4	-	-	-																																																																																																																																																																																																																																																																																																																																																		
102.60	-4.3	-	-	-																																																																																																																																																																																																																																																																																																																																																		
102.55	-4.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																		
102.55	-4.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																		
102.51	-4.2	0.00	0.00	2.94																																																																																																																																																																																																																																																																																																																																																		
102.46	-4.2	1.41	5.88	5.88																																																																																																																																																																																																																																																																																																																																																		
102.42	-4.1	1.41	5.83	8.82																																																																																																																																																																																																																																																																																																																																																		
102.42	-4.1	2.13	8.82	8.82																																																																																																																																																																																																																																																																																																																																																		
102.37	-4.1	2.13	8.73	12.30																																																																																																																																																																																																																																																																																																																																																		
101.92	-3.7	11.81	43.59	43.59																																																																																																																																																																																																																																																																																																																																																		
101.87	-3.6	11.81	43.03	47.06																																																																																																																																																																																																																																																																																																																																																		
101.87	-3.6	12.92	47.07	47.06																																																																																																																																																																																																																																																																																																																																																		
101.82	-3.6	12.92	46.45	50.54																																																																																																																																																																																																																																																																																																																																																		
101.47	-3.3	22.97	74.88	74.88																																																																																																																																																																																																																																																																																																																																																		
101.42	-3.2	22.97	73.77	78.35																																																																																																																																																																																																																																																																																																																																																		
101.42	-3.2	24.39	78.35	78.35																																																																																																																																																																																																																																																																																																																																																		
101.37	-3.2	24.39	77.18	81.83																																																																																																																																																																																																																																																																																																																																																		
100.81	-2.6	45.59	120.07	120.07																																																																																																																																																																																																																																																																																																																																																		
100.76	-2.6	45.59	117.90	123.55																																																																																																																																																																																																																																																																																																																																																		
100.76	-2.6	47.78	123.55	123.55																																																																																																																																																																																																																																																																																																																																																		
100.71	-2.5	47.78	121.28	127.02																																																																																																																																																																																																																																																																																																																																																		
100.46	-2.3	50.00	115.12	144.36																																																																																																																																																																																																																																																																																																																																																		
100.41	-2.3	50.00	112.78	147.83																																																																																																																																																																																																																																																																																																																																																		
100.41	-2.3	50.00	112.78	147.83																																																																																																																																																																																																																																																																																																																																																		
100.36	-2.2	50.00	110.45	151.30																																																																																																																																																																																																																																																																																																																																																		
99.46	-1.4	50.00	69.77	213.75																																																																																																																																																																																																																																																																																																																																																		
99.40	-1.4	50.00	67.58	217.22																																																																																																																																																																																																																																																																																																																																																		
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99.35	-1.3	50.00	65.38	220.69																																																																																																																																																																																																																																																																																																																																																		
98.45	-0.5	50.00	26.53	283.14																																																																																																																																																																																																																																																																																																																																																		
98.40	-0.5	50.00	24.39	286.61																																																																																																																																																																																																																																																																																																																																																		
98.40	-0.5	50.00	24.39	286.61																																																																																																																																																																																																																																																																																																																																																		
98.35	-0.4	50.00	22.25	290.08																																																																																																																																																																																																																																																																																																																																																		
98.15	-0.3	50.00	13.69	303.96																																																																																																																																																																																																																																																																																																																																																		
98.10	-0.2	50.00	11.55	307.43																																																																																																																																																																																																																																																																																																																																																		
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}$ $G_{s,k} = 176.93 \text{ kN/m}$ $G'_{s,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 81.13 \text{ kN/m}$ ($E_{ah,k} = 438.72 \text{ kN/m}$) $B_{v,k} = 115.58$ Summe $V_{s,k} = 142.48 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältnisswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m $\implies R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_d = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen $V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 96.23 + 0.00 = 308.55 \text{ kN/m}$ $\implies \mu = V_{s,d} / R_d = 308.55 / 1039.87 = 0.30$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/25								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 14_BS 1_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 109.02 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 109.02 109.02 109.01 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 110.00 0.00 2.00 109.02 109.02 109.02 106.96 106.06 ja</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -31.20 0.00 0.00 0.00 48.70 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.92 m</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/26
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 34.604 / 166.649 = 0.208$
Bettungslager $B_{h,d} = 34.604 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 166.649 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-606.29	-493.80	-251.29	-50.63	3.900E+7	2.100E+7	-684.16 Steife

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-4.0	0.0	-606.78	0.00	0.00
-7.47	103.72	-4.0	0.0	-606.78	0.00	0.00
-7.47	103.72	-4.0	0.0	-606.78	0.00	0.00
-6.64	103.72	-4.1	0.0	-606.78	0.00	0.00
-5.81	103.72	-4.1	0.0	-606.78	0.00	0.00
-4.98	103.72	-4.1	0.0	-606.78	0.00	0.00
-4.15	103.72	-4.1	0.1	-606.78	0.00	0.00
-3.32	103.72	-4.1	0.1	-606.78	0.00	0.00
-2.49	103.72	-4.1	0.1	-606.78	0.00	0.00
-1.66	103.72	-4.1	0.1	-606.78	0.00	0.00
-0.83	103.72	-4.1	0.1	-606.78	0.00	0.00
0.00	103.72	-4.2	0.1	-606.78	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0035

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

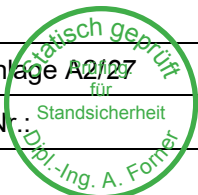
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
109.020	109.018	0.000	39.614	0.00
109.018	109.014	39.614	46.806	0.00
109.014	108.020	46.806	54.166	0.00
108.020	107.450	54.166	58.386	0.00

Schnitt:	Anlage A2	Schnitt 1R	Seite Anlage A2/27
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>107.450</td><td>107.020</td><td>58.386</td><td>61.570</td><td>0.00</td><td>0.00</td></tr><tr><td>107.020</td><td>106.964</td><td>61.570</td><td>61.987</td><td>0.00</td><td>0.00</td></tr><tr><td>106.964</td><td>106.057</td><td>61.987</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>106.057</td><td>106.020</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>106.020</td><td>105.500</td><td>26.109</td><td>29.959</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.970</td><td>29.959</td><td>32.024</td><td>0.00</td><td>5.30</td></tr><tr><td>104.970</td><td>103.980</td><td>32.024</td><td>35.882</td><td>5.30</td><td>15.20</td></tr><tr><td>103.980</td><td>103.940</td><td>35.882</td><td>36.038</td><td>15.20</td><td>15.60</td></tr><tr><td>103.940</td><td>103.720</td><td>44.631</td><td>45.567</td><td>15.60</td><td>17.80</td></tr><tr><td>103.720</td><td>102.975</td><td>45.567</td><td>48.737</td><td>17.80</td><td>25.25</td></tr><tr><td>102.975</td><td>102.840</td><td>48.737</td><td>49.312</td><td>25.25</td><td>26.60</td></tr><tr><td>102.840</td><td>102.550</td><td>36.319</td><td>37.508</td><td>26.60</td><td>29.50</td></tr><tr><td>102.550</td><td>102.000</td><td>37.508</td><td>39.765</td><td>0.00</td><td>0.00</td></tr><tr><td>102.000</td><td>101.000</td><td>39.765</td><td>43.867</td><td>0.00</td><td>0.00</td></tr><tr><td>101.000</td><td>99.999</td><td>43.867</td><td>47.970</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>98.999</td><td>47.970</td><td>52.073</td><td>0.00</td><td>0.00</td></tr><tr><td>98.999</td><td>98.099</td><td>52.073</td><td>55.765</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>55.765</td><td>129.999</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>109.02</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.84</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.00</td><td>0.00</td><td>-23.38</td></tr><tr><td>102.00</td><td>101.00</td><td>-23.38</td><td>-65.90</td></tr><tr><td>101.00</td><td>100.00</td><td>-65.90</td><td>-108.41</td></tr><tr><td>100.00</td><td>99.00</td><td>-108.41</td><td>-150.93</td></tr><tr><td>99.00</td><td>98.10</td><td>-150.93</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.02</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.2</td><td>-0.3</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-45.2</td><td>-64.4</td><td>-31.4</td><td></td></tr><tr><td>107.45</td><td>-72.4</td><td>-104.9</td><td>-79.5</td><td></td></tr><tr><td>107.45</td><td>-130.8</td><td>-104.9</td><td>-117.0</td><td></td></tr><tr><td>107.02</td><td>-152.0</td><td>-137.3</td><td>-169.0</td><td></td></tr><tr><td>106.96</td><td>-154.8</td><td>-141.7</td><td>-176.9</td><td></td></tr><tr><td>106.06</td><td>-192.3</td><td>-190.4</td><td>-330.8</td><td></td></tr><tr><td>106.02</td><td>-193.5</td><td>-191.5</td><td>-337.8</td><td></td></tr><tr><td>105.50</td><td>-210.9</td><td>-208.3</td><td>-441.6</td><td></td></tr><tr><td>104.97</td><td>-229.3</td><td>-228.9</td><td>-557.3</td><td></td></tr><tr><td>103.98</td><td>-264.9</td><td>-279.7</td><td>-807.7</td><td></td></tr><tr><td>103.94</td><td>-266.4</td><td>-282.1</td><td>-818.9</td><td></td></tr><tr><td>103.72</td><td>-274.2</td><td>-297.9</td><td>-882.7</td><td>-606.8</td></tr><tr><td>103.72</td><td>-274.2</td><td>308.9</td><td>-882.7</td><td></td></tr><tr><td>102.98</td><td>-301.3</td><td>249.2</td><td>-674.2</td><td></td></tr><tr><td>102.84</td><td>-306.3</td><td>237.4</td><td>-641.4</td><td></td></tr><tr><td>102.55</td><td>-317.5</td><td>215.3</td><td>-575.7</td><td></td></tr><tr><td>102.00</td><td>-326.4</td><td>200.4</td><td>-462.2</td><td></td></tr><tr><td>101.00</td><td>-338.9</td><td>175.5</td><td>-271.0</td><td></td></tr><tr><td>100.00</td><td>-360.2</td><td>123.5</td><td>-120.0</td><td></td></tr><tr><td>99.00</td><td>-383.1</td><td>60.6</td><td>-27.5</td><td></td></tr><tr><td>98.10</td><td>-402.3</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	107.020	58.386	61.570	0.00	0.00	107.020	106.964	61.570	61.987	0.00	0.00	106.964	106.057	61.987	25.836	0.00	0.00	106.057	106.020	25.836	26.109	0.00	0.00	106.020	105.500	26.109	29.959	0.00	0.00	105.500	104.970	29.959	32.024	0.00	5.30	104.970	103.980	32.024	35.882	5.30	15.20	103.980	103.940	35.882	36.038	15.20	15.60	103.940	103.720	44.631	45.567	15.60	17.80	103.720	102.975	45.567	48.737	17.80	25.25	102.975	102.840	48.737	49.312	25.25	26.60	102.840	102.550	36.319	37.508	26.60	29.50	102.550	102.000	37.508	39.765	0.00	0.00	102.000	101.000	39.765	43.867	0.00	0.00	101.000	99.999	43.867	47.970	0.00	0.00	99.999	98.999	47.970	52.073	0.00	0.00	98.999	98.099	52.073	55.765	0.00	0.00	98.099	80.000	55.765	129.999	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	109.02	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.84	102.55	0.00	0.00	102.55	102.00	0.00	-23.38	102.00	101.00	-23.38	-65.90	101.00	100.00	-65.90	-108.41	100.00	99.00	-108.41	-150.93	99.00	98.10	-150.93	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	109.02	0.0	0.0	0.0		109.02	-0.1	-0.1	0.0		109.01	-0.2	-0.3	0.0		108.02	-45.2	-64.4	-31.4		107.45	-72.4	-104.9	-79.5		107.45	-130.8	-104.9	-117.0		107.02	-152.0	-137.3	-169.0		106.96	-154.8	-141.7	-176.9		106.06	-192.3	-190.4	-330.8		106.02	-193.5	-191.5	-337.8		105.50	-210.9	-208.3	-441.6		104.97	-229.3	-228.9	-557.3		103.98	-264.9	-279.7	-807.7		103.94	-266.4	-282.1	-818.9		103.72	-274.2	-297.9	-882.7	-606.8	103.72	-274.2	308.9	-882.7		102.98	-301.3	249.2	-674.2		102.84	-306.3	237.4	-641.4		102.55	-317.5	215.3	-575.7		102.00	-326.4	200.4	-462.2		101.00	-338.9	175.5	-271.0		100.00	-360.2	123.5	-120.0		99.00	-383.1	60.6	-27.5		98.10	-402.3	0.0	0.0	
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Dipl.-Ing. A. Forner



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<div>Schnittgrößen ([g+q+w],k)</div> 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Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																					
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																					



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>103.98 -39.2 -107.5 -405.4</div><div>103.94 -39.2 -107.5 -409.7</div><div>103.72 -39.2 -107.5 -433.4 -252.3</div><div>103.72 -39.2 135.0 -433.4</div><div>102.98 -39.2 135.0 -332.8</div><div>102.84 -39.2 135.0 -314.6</div><div>102.55 -39.2 135.0 -275.5</div><div>102.00 -42.2 127.4 -202.4</div><div>101.00 -59.8 83.1 -97.0</div><div>100.00 -75.5 43.7 -34.4</div><div>99.00 -86.1 15.1 -6.0</div><div>98.10 -90.4 0.0 0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>109.02 -25.6 - - -</div><div>109.02 -25.5 - - -</div><div>109.02 -25.5 - - -</div><div>109.01 -25.5 - - -</div><div>109.01 -25.5 - - -</div><div>108.96 -25.3 - - -</div><div>108.07 -21.0 - - -</div><div>108.02 -20.8 - - -</div><div>108.02 -20.8 - - -</div><div>107.97 -20.6 - - -</div><div>107.52 -18.5 - - -</div><div>107.45 -18.1 - - -</div><div>107.45 -18.1 - - -</div><div>107.40 -17.9 - - -</div><div>107.07 -16.3 - - -</div><div>107.02 -16.1 - - -</div><div>107.02 -16.1 - - -</div><div>106.96 -15.9 - - -</div><div>106.96 -15.9 - - -</div><div>106.91 -15.6 - - -</div><div>106.11 -12.0 - - -</div><div>106.06 -11.8 - - -</div><div>106.06 -11.8 - - -</div><div>106.02 -11.7 - - -</div><div>106.02 -11.7 - - -</div><div>105.97 -11.4 - - -</div><div>105.52 -9.6 - - -</div><div>105.50 -9.5 - - -</div><div>105.50 -9.5 - - -</div><div>105.45 -9.3 - - -</div><div>105.02 -7.6 - - -</div><div>104.97 -7.5 - - -</div><div>104.97 -7.5 - - -</div><div>104.92 -7.3 - - -</div><div>104.02 -4.4 - - -</div><div>103.98 -4.3 - - -</div><div>103.98 -4.3 - - -</div><div>103.94 -4.2 - - -</div><div>103.94 -4.2 - - -</div><div>103.89 -4.0 - - -</div><div>103.78 -3.7 - - -</div><div>103.72 -3.6 - - -</div><div>103.72 -3.6 - - -</div><div>103.67 -3.5 - - -</div><div>103.02 -2.2 - - -</div><div>102.98 -2.1 - - -</div><div>102.98 -2.1 - - -</div><div>102.93 -2.0 - - -</div><div>102.89 -2.0 - - -</div><div>102.84 -1.9 - - -</div><div>102.84 -1.9 - - -</div><div>102.79 -1.8 - - -</div><div>102.60 -1.5 - - -</div><div>102.55 -1.5 0.00 0.00 0.00</div></div></div></div>					
Schnitt:		Anlage A2 Schnitt 1R		Seite Anlage A2/30	
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

102.55	-1.5	0.00	0.00	0.00
102.50	-1.4	0.00	0.00	3.45
102.05	-0.9	37.35	34.54	34.54
102.00	-0.9	37.35	32.84	38.00
102.00	-0.9	43.22	38.00	38.00
101.95	-0.8	43.22	36.10	41.45
101.05	-0.3	50.00	13.94	103.63
101.00	-0.3	50.00	12.95	107.08
101.00	-0.3	50.00	12.95	107.08
100.95	-0.2	50.00	12.00	110.54
100.05	0.0	50.00	1.39	172.71
100.00	0.0	50.00	1.07	176.17
100.00	0.0	50.00	1.07	176.17
99.95	0.0	50.00	0.78	179.62
99.05	0.0	50.00	-1.93	241.80
99.00	0.0	50.00	-1.99	245.25
99.00	0.0	50.00	-1.99	245.25
98.95	0.0	50.00	-2.04	248.71
98.15	0.1	50.00	-2.62	303.98
98.10	0.1	50.00	-2.65	307.43

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.00066694$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 10.92 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$
 $G_{v,k} = 206.64$ kN/m
 $G'_{v,k} = 0.00$ kN/m
 $P_{v,k} = 48.70$ kN/m
 $E_{av,k} = 90.11$ kN/m ($E_{ah,k} = 488.53$ kN/m)
 $B_{v,k} = 16.43$
Summe $V_{v,k} = 329.02$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältnisswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m

Einwirkungen
 $V_{d} = G_{d} - G'_{v,k} + E_{av,d} + P_{v,d} = 247.97 - 0.00 + 106.56 + 58.44 = 412.97$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 412.97 / 1039.87 = 0.40$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage A2 Schnitt 1R	Seite Anlage A2/01
Kapitel: 5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2103
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 15_BS 1_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 109.02 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 109.02 109.02 109.01 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -31.20 0.00 0.00 0.00 48.70 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.92 m</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/32
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																										
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																										
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 220.494 / 440.781 = 0.500$</div> <div>Bettungslager $B_{h,d} = 220.494 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 440.781 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>$N_{d'}$</td><td>$N(g+q+w),k$</td><td>$N(g+w),k$</td><td>$N_{w,k}$</td><td>EA</td><td>EI</td><td>$N_{d'}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-296.42</td><td>-230.08</td><td>-230.08</td><td>-50.59</td><td>3.900E+7</td><td>2.100E+7</td><td>-293.35 Steife</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><td>x</td><td>y</td><td>$w_{x,d}$</td><td>$w_{y,d}$</td><td>$N_{d'}$</td><td>$Q_{d'}$</td><td>$M_{d'}$</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-4.5</td><td>0.0</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-4.5</td><td>0.1</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-4.5</td><td>0.1</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-4.5</td><td>0.1</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-4.5</td><td>0.1</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-4.5</td><td>0.1</td><td>-297.14</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0035</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{m',k}$</td><td>$\phi_{i,k}$</td><td>$c(pas),k$</td><td>$c(akt),k$</td><td>$d(p)/\phi$</td><td>$d(a)/\phi$</td><td>q_c</td><td>$c_{u,k}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table></div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td><td>$k_{agh}(40^\circ)$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>109.020</td><td>109.014</td><td>0.000</td><td>1.992</td><td>0.00</td><td>0.00</td></tr><tr><td>109.014</td><td>108.020</td><td>1.992</td><td>9.352</td><td>0.00</td><td>0.00</td></tr><tr><td>108.020</td><td>107.450</td><td>9.352</td><td>13.573</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>107.020</td><td>13.573</td><td>16.756</td><td>0.00</td><td>0.00</td></tr></table></div>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-296.42	-230.08	-230.08	-50.59	3.900E+7	2.100E+7	-293.35 Steife	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-4.5	0.0	-297.14	0.00	0.00	-7.47	103.72	-4.5	0.0	-297.14	0.00	0.00	-7.47	103.72	-4.5	0.0	-297.14	0.00	0.00	-6.64	103.72	-4.5	0.0	-297.14	0.00	0.00	-5.81	103.72	-4.5	0.0	-297.14	0.00	0.00	-4.98	103.72	-4.5	0.0	-297.14	0.00	0.00	-4.15	103.72	-4.5	0.0	-297.14	0.00	0.00	-3.32	103.72	-4.5	0.1	-297.14	0.00	0.00	-2.49	103.72	-4.5	0.1	-297.14	0.00	0.00	-1.66	103.72	-4.5	0.1	-297.14	0.00	0.00	-0.83	103.72	-4.5	0.1	-297.14	0.00	0.00	0.00	103.72	-4.5	0.1	-297.14	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0035	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	109.020	109.014	0.000	1.992	0.00	0.00	109.014	108.020	1.992	9.352	0.00	0.00	108.020	107.450	9.352	13.573	0.00	0.00	107.450	107.020	13.573	16.756	0.00	0.00
Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																																		
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<table><tr><td>107.020</td><td>105.970</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.970</td><td>105.500</td><td>24.530</td><td>28.010</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.970</td><td>28.010</td><td>30.076</td><td>0.00</td><td>5.30</td></tr><tr><td>104.970</td><td>103.980</td><td>30.076</td><td>33.933</td><td>5.30</td><td>15.20</td></tr><tr><td>103.980</td><td>103.940</td><td>33.933</td><td>34.089</td><td>15.20</td><td>15.60</td></tr><tr><td>103.940</td><td>103.720</td><td>42.128</td><td>43.064</td><td>15.60</td><td>17.80</td></tr><tr><td>103.720</td><td>102.975</td><td>43.064</td><td>46.234</td><td>17.80</td><td>25.25</td></tr><tr><td>102.975</td><td>102.840</td><td>46.234</td><td>46.809</td><td>25.25</td><td>26.60</td></tr><tr><td>102.840</td><td>102.550</td><td>34.535</td><td>35.725</td><td>26.60</td><td>29.50</td></tr><tr><td>102.550</td><td>102.000</td><td>35.725</td><td>37.981</td><td>0.00</td><td>0.00</td></tr><tr><td>102.000</td><td>101.000</td><td>37.981</td><td>42.084</td><td>0.00</td><td>0.00</td></tr><tr><td>101.000</td><td>99.999</td><td>42.084</td><td>46.187</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>98.999</td><td>46.187</td><td>50.289</td><td>0.00</td><td>0.00</td></tr><tr><td>98.999</td><td>98.099</td><td>50.289</td><td>53.982</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>53.982</td><td>128.215</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>109.02</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.84</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.00</td><td>-11.33</td><td>-33.04</td></tr><tr><td>102.00</td><td>101.00</td><td>-33.04</td><td>-72.52</td></tr><tr><td>101.00</td><td>100.00</td><td>-72.52</td><td>-111.99</td></tr><tr><td>100.00</td><td>99.00</td><td>-111.99</td><td>-151.47</td></tr><tr><td>99.00</td><td>98.10</td><td>-151.47</td><td>-187.00</td></tr><tr><td>98.10</td><td>80.00</td><td>-187.00</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-43.5</td><td>-15.5</td><td>-9.1</td><td></td></tr><tr><td>107.45</td><td>-109.3</td><td>-15.5</td><td>-51.3</td><td></td></tr><tr><td>107.02</td><td>-122.7</td><td>-23.8</td><td>-59.7</td><td></td></tr><tr><td>105.97</td><td>-158.1</td><td>-51.5</td><td>-98.3</td><td></td></tr><tr><td>105.50</td><td>-175.1</td><td>-67.2</td><td>-126.1</td><td></td></tr><tr><td>104.97</td><td>-195.1</td><td>-88.7</td><td>-167.2</td><td></td></tr><tr><td>103.98</td><td>-233.7</td><td>-142.8</td><td>-280.3</td><td></td></tr><tr><td>103.94</td><td>-235.3</td><td>-145.4</td><td>-286.1</td><td></td></tr><tr><td>103.72</td><td>-243.8</td><td>-162.3</td><td>-319.9</td><td>-297.1</td></tr><tr><td>103.72</td><td>-243.8</td><td>134.8</td><td>-319.9</td><td></td></tr><tr><td>102.98</td><td>-273.1</td><td>70.8</td><td>-242.7</td><td></td></tr><tr><td>102.84</td><td>-278.5</td><td>58.0</td><td>-234.0</td><td></td></tr><tr><td>102.55</td><td>-290.7</td><td>34.1</td><td>-220.6</td><td></td></tr><tr><td>102.00</td><td>-294.4</td><td>32.7</td><td>-203.7</td><td></td></tr><tr><td>101.00</td><td>-284.3</td><td>67.4</td><td>-152.6</td><td></td></tr><tr><td>100.00</td><td>-284.8</td><td>70.3</td><td>-81.0</td><td></td></tr><tr><td>99.00</td><td>-294.6</td><td>44.4</td><td>-21.4</td><td></td></tr><tr><td>98.10</td><td>-310.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.020	105.970	16.756	24.530	0.00	0.00	105.970	105.500	24.530	28.010	0.00	0.00	105.500	104.970	28.010	30.076	0.00	5.30	104.970	103.980	30.076	33.933	5.30	15.20	103.980	103.940	33.933	34.089	15.20	15.60	103.940	103.720	42.128	43.064	15.60	17.80	103.720	102.975	43.064	46.234	17.80	25.25	102.975	102.840	46.234	46.809	25.25	26.60	102.840	102.550	34.535	35.725	26.60	29.50	102.550	102.000	35.725	37.981	0.00	0.00	102.000	101.000	37.981	42.084	0.00	0.00	101.000	99.999	42.084	46.187	0.00	0.00	99.999	98.999	46.187	50.289	0.00	0.00	98.999	98.099	50.289	53.982	0.00	0.00	98.099	80.000	53.982	128.215	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	109.02	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.84	102.55	0.00	0.00	102.55	102.00	-11.33	-33.04	102.00	101.00	-33.04	-72.52	101.00	100.00	-72.52	-111.99	100.00	99.00	-111.99	-151.47	99.00	98.10	-151.47	-187.00	98.10	80.00	-187.00	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	109.02	0.0	0.0	0.0		109.01	-0.1	0.0	0.0		108.02	-26.7	-7.2	-2.8		107.45	-43.5	-15.5	-9.1		107.45	-109.3	-15.5	-51.3		107.02	-122.7	-23.8	-59.7		105.97	-158.1	-51.5	-98.3		105.50	-175.1	-67.2	-126.1		104.97	-195.1	-88.7	-167.2		103.98	-233.7	-142.8	-280.3		103.94	-235.3	-145.4	-286.1		103.72	-243.8	-162.3	-319.9	-297.1	103.72	-243.8	134.8	-319.9		102.98	-273.1	70.8	-242.7		102.84	-278.5	58.0	-234.0		102.55	-290.7	34.1	-220.6		102.00	-294.4	32.7	-203.7		101.00	-284.3	67.4	-152.6		100.00	-284.8	70.3	-81.0		99.00	-294.6	44.4	-21.4		98.10	-310.2	0.0	0.0	
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Dipl.-Ing. A. Forner



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08.02	-11.3	-	-	-	107.97	-11.2	-	-	-	107.52	-10.3	-	-	-	107.45	-10.2	-	-	-	107.45	-10.2	-	-	-	107.40	-10.1	-	-	-	107.07	-9.4	-	-	-	107.02	-9.3	-	-	-	107.02	-9.3	-	-	-	106.97	-9.2	-	-	-	106.02	-7.4	-	-	-	105.97	-7.3	-	-	-	105.97	-7.3	-	-	-	105.92	-7.2	-	-	-	105.52	-6.4	-	-	-	105.50	-6.4	-	-	-	105.50	-6.4	-	-	-	105.45	-6.3	-	-	-	105.02	-5.6	-	-	-	104.97	-5.5	-	-	-	104.97	-5.5	-	-	-	104.92	-5.4	-	-	-	104.02	-4.0	-	-	-	103.98	-3.9	-	-	-	103.98	-3.9	-	-	-	103.94	-3.8	-	-	-	103.94	-3.8	-	-	-	103.89	-3.8	-	-	-	103.78	-3.6	-	-	-	103.72	-3.5	-	-	-	103.72	-3.5	-	-	-	103.67	-3.5	-	-	-	103.02	-2.7	-	-	-	102.98	-2.7	-	-	-	102.98	-2.7	-	-	-	102.93	-2.6	-	-	-	102.89	-2.6	-	-	-	102.84	-2.5	-	-	-	102.84	-2.5	-	-	-	102.79	-2.5	-	-	-	102.60	-2.3	-	-	-	102.55	-2.3	0.00	0.00	0.00	102.55	-2.3	0.00	0.00	19.82	102.50	-2.2	0.00	0.00	23.27	102.05	-1.8	29.63	54.37	54.36	102.00	-1.8	29.63	53.23	57.82	102.00	-1.8	32.18	57.82	57.82	101.95	-1.8	32.18	56.61	61.27	101.05	-1.2	50.00	59.41	123.45	101.00	-1.2	50.00	58.09	126.90	101.00	-1.2	50.00	58.09	126.90	100.95	-1.1	50.00	56.81	130.36	100.05	-0.7	50.00	37.30	192.53	100.00	-0.7	50.00	36.38	195.99	100.00	-0.7	50.00	36.38	195.99	99.95	-0.7	50.00	35.48	199.44	99.05	-0.4	50.00	20.87	261.62
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102.55	-2.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.55	-2.3	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																																
102.50	-2.2	0.00	0.00	23.27																																																																																																																																																																																																																																																																																																																																																
102.05	-1.8	29.63	54.37	54.36																																																																																																																																																																																																																																																																																																																																																
102.00	-1.8	29.63	53.23	57.82																																																																																																																																																																																																																																																																																																																																																
102.00	-1.8	32.18	57.82	57.82																																																																																																																																																																																																																																																																																																																																																
101.95	-1.8	32.18	56.61	61.27																																																																																																																																																																																																																																																																																																																																																
101.05	-1.2	50.00	59.41	123.45																																																																																																																																																																																																																																																																																																																																																
101.00	-1.2	50.00	58.09	126.90																																																																																																																																																																																																																																																																																																																																																
101.00	-1.2	50.00	58.09	126.90																																																																																																																																																																																																																																																																																																																																																
100.95	-1.1	50.00	56.81	130.36																																																																																																																																																																																																																																																																																																																																																
100.05	-0.7	50.00	37.30	192.53																																																																																																																																																																																																																																																																																																																																																
100.00	-0.7	50.00	36.38	195.99																																																																																																																																																																																																																																																																																																																																																
100.00	-0.7	50.00	36.38	195.99																																																																																																																																																																																																																																																																																																																																																
99.95	-0.7	50.00	35.48	199.44																																																																																																																																																																																																																																																																																																																																																
99.05	-0.4	50.00	20.87	261.62																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage A2 Schnitt 1R		Seite Anlage A2/36																																																																																																																																																																																																																																																																																																																																																
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2106																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div><div><div>99.00</div><div>-0.4</div><div>50.00</div><div>20.12</div><div>265.07</div></div><div><div>99.00</div><div>-0.4</div><div>50.00</div><div>20.12</div><div>265.07</div></div><div><div>98.95</div><div>-0.4</div><div>50.00</div><div>19.38</div><div>268.53</div></div><div><div>98.15</div><div>-0.2</div><div>50.00</div><div>7.68</div><div>323.80</div></div><div><div>98.10</div><div>-0.1</div><div>50.00</div><div>6.96</div><div>327.25</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.01662932</div><div>Theoretischer Fußpunkt = 98.099 m</div></div><div><div>Einbindetiefe tg = 4.45 m</div><div>Profillänge = 10.92 m</div></div><div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k + Eav,k >= Bv,k</div><div>G,k = 206.64 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 48.70 kN/m</div><div>Eav,k = 66.68 kN/m (Eah,k = 359.91 kN/m)</div><div>Bv,k = 68.91</div><div>Summe V,k = 253.11 kN/m (Druck)</div></div><div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältnisswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div></div><div><div>Mantelreibung</div><div><div><div>von</div><div>bis</div><div>qs,k [kN/m²]</div><div>Bezeichnung</div></div><div><div>102.55</div><div>98.10</div><div>55.00</div><div>s3: Flussskies, -sand</div></div></div><div>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m</div><div>Rd = Rb,d + Rs1,d = 1039.87 kN/m</div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 278.96 - 0.00 + 85.02 + 65.75 = 429.73 kN/m</div><div>==> µ = V,d / Rd = 429.73 / 1039.87 = 0.41</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/37
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2103
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 16_BS 1_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 109.02 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 109.02 109.02 109.01 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -31.20 0.00 0.00 0.00 48.70 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.92 m</div>		
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/38
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 198.243 / 474.687 = 0.418$
Bettungslager $B_{h,d} = 198.243 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 474.687 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-291.66	-251.84	-251.84	-50.60	3.900E+7	2.100E+7	-321.09

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-4.0	0.0	-292.14	0.00	0.00
-7.47	103.72	-4.0	0.0	-292.14	0.00	0.00
-7.47	103.72	-4.0	0.0	-292.14	0.00	0.00
-6.64	103.72	-4.0	0.0	-292.14	0.00	0.00
-5.81	103.72	-4.0	0.0	-292.14	0.00	0.00
-4.98	103.72	-4.0	0.0	-292.14	0.00	0.00
-4.15	103.72	-4.1	0.0	-292.14	0.00	0.00
-3.32	103.72	-4.1	0.0	-292.14	0.00	0.00
-2.49	103.72	-4.1	0.1	-292.14	0.00	0.00
-1.66	103.72	-4.1	0.1	-292.14	0.00	0.00
-0.83	103.72	-4.1	0.1	-292.14	0.00	0.00
0.00	103.72	-4.1	0.1	-292.14	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0035

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
109.020	109.014	0.000	3.941	0.00
109.014	108.020	3.941	11.301	0.00
108.020	107.450	11.301	15.521	0.00
107.450	107.020	15.521	18.705	0.00

Schnitt:	Anlage A2	Schnitt 1R	Seite Anlage A2/39
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																									
Auftraggeber:		Stadtverwaltung Leipzig																													
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																									
<div><div><div>107.020105.97018.70526.4790.000.00</div><div>105.970105.50026.47929.9590.000.00</div><div>105.500104.97029.95932.0240.005.30</div><div>104.970103.98032.02435.8825.3015.20</div><div>103.980103.94035.88236.03815.2015.60</div><div>103.940103.72044.63145.56715.6017.80</div><div>103.720102.97545.56748.73717.8025.25</div><div>102.975102.84048.73749.31225.2526.60</div><div>102.840102.55036.31937.50826.6029.50</div><div>102.550102.00037.50839.7650.000.00</div><div>102.000101.00039.76543.8670.000.00</div><div>101.00099.99943.86747.9700.000.00</div><div>99.99998.99947.97052.0730.000.00</div><div>98.99998.09952.07355.7650.000.00</div><div>98.09980.00055.765129.9990.000.00</div></div><div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><div>w(oben)w(unten)z(oben)z(unten)</div><div>[kN/m²][kN/m²][mNHN][mNHN]</div><div>0.000.00109.02102.55</div></div><div><div>Passive Erddruckbeiwerte</div><div>bestimmt nach: DIN 4085:2017</div><div>SchichtUKkpghkpchphi,kdeltatheta</div><div>[-][mNHN][-][-][°][°][°]</div><div>380.006.0066.05432.500-21.6816.35</div></div><div><div>Passive Erddruckordinaten (Bemessungswerte)</div><div>Teilsicherheit Erdwiderstand = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div>vonbisobenunten</div><div>[mNHN][mNHN][kN/m²][kN/m²]</div><div>102.84102.550.000.00</div><div>102.55102.00-12.20-35.58</div><div>102.00101.00-35.58-78.09</div><div>101.00100.00-78.09-120.61</div><div>100.0099.00-120.61-163.12</div><div>99.0098.10-163.12-201.38</div><div>98.1080.00-201.38-970.62</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div>TiefeNQM A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>109.020.00.00.0</div><div>109.01-0.10.00.0</div><div>108.02-24.9-8.7-3.6</div><div>107.45-40.5-17.5-11.0</div><div>107.45-99.0-17.5-48.4</div><div>107.02-111.4-26.0-57.7</div><div>105.97-144.2-53.3-98.5</div><div>105.50-160.0-68.5-127.0</div><div>104.97-178.4-89.1-168.6</div><div>103.98-214.0-139.9-280.6</div><div>103.94-215.5-142.3-286.2</div><div>103.72-223.3-158.1-319.3-292.1</div><div>103.72-223.3134.0-319.3</div><div>102.98-250.474.4-241.1</div><div>102.84-255.462.6-231.8</div><div>102.55-266.640.5-216.8</div><div>102.00-270.038.1-196.5</div><div>101.00-261.366.2-143.2</div><div>100.00-262.166.0-74.7</div><div>99.00-271.040.7-19.6</div><div>98.10-284.50.00.0</div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="4">Anlage A2 Schnitt 1R</td><td colspan="2">Seite Anlage A2/40</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="4">7 LF 5 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="4">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>								Schnitt:		Anlage A2 Schnitt 1R				Seite Anlage A2/40		Kapitel:		7 LF 5 (BS-T, mit Lasten)				Archiv Nr.:		Vorgang:		Genehmigungsstatik				Projekt-Nr.: 2004-0025	
Schnitt:		Anlage A2 Schnitt 1R				Seite Anlage A2/40																									
Kapitel:		7 LF 5 (BS-T, mit Lasten)				Archiv Nr.:																									
Vorgang:		Genehmigungsstatik				Projekt-Nr.: 2004-0025																									



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																													
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102.84	-2.5	-	-	-																																																																																																																																																																																																																																																																																																																																																										
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102.60	-2.3	-	-	-																																																																																																																																																																																																																																																																																																																																																										
102.55	-2.2	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
102.55	-2.2	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																																										
102.50	-2.2	0.00	0.00	23.27																																																																																																																																																																																																																																																																																																																																																										
102.05	-1.8	30.18	54.36	54.36																																																																																																																																																																																																																																																																																																																																																										
102.00	-1.8	30.18	53.21	57.82																																																																																																																																																																																																																																																																																																																																																										
102.00	-1.8	32.80	57.82	57.82																																																																																																																																																																																																																																																																																																																																																										
101.95	-1.7	32.80	56.59	61.27																																																																																																																																																																																																																																																																																																																																																										
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100.00	-0.7	50.00	36.02	195.99																																																																																																																																																																																																																																																																																																																																																										
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Schnitt:		Anlage A2 Schnitt 1R		Seite Anlage A2/42																																																																																																																																																																																																																																																																																																																																																										
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																										
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>98.95-0.450.0020.10268.53</div><div>98.15-0.250.009.24323.80</div><div>98.10-0.250.008.57327.25</div></div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.01542214 Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 4.45 m Profillänge = 10.92 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 206.64 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 48.70 \text{ kN/m}$ $E_{av,k} = 70.53 \text{ kN/m}$ ($E_{ah,k} = 381.01 \text{ kN/m}$) $B_{v,k} = 68.64$ Summe $V_{,k} = 257.23 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältnswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table><div>Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</div></div><div>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 247.97 - 0.00 + 81.11 + 58.44 = 387.52 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 387.52 / 1039.87 = 0.37$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage A2 Schnitt 1R		Seite Anlage A2/43								
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Statisch geprüft für Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage B2 Schnitt 2R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 10_BS 2_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>3.00</td><td>4.57</td><td>1.57</td><td>1.73</td><td>1.65</td><td>0.86</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.09</td><td>10.000</td><td>10.000</td></tr><tr><td>105.09</td><td>102.69</td><td>5.000</td><td>5.000</td></tr><tr><td>102.69</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 370.644 / 1268.505 = 0.292 Bettungslager Bh,d = 370.644 kN/m Erdwiderstand Eph,d = 1268.505 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	3.00	4.57	1.57	1.73	1.65	0.86	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.09	10.000	10.000	105.09	102.69	5.000	5.000	102.69	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	3.00	4.57	1.57	1.73	1.65	0.86	0.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.09	10.000	10.000																																														
105.09	102.69	5.000	5.000																																														
102.69	80.00	50.000	50.000																																														
Schnitt:	Anlage B2 Schnitt 2R	Seite Anlage B2/19.																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 19. für Standsicherheit																																															
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

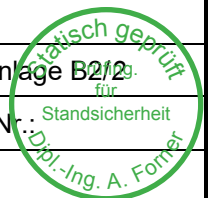
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																			
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																			
<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.450</td><td>0.000</td><td>7.404</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.000</td><td>7.404</td><td>10.736</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>10.736</td><td>14.438</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.449</td><td>14.438</td><td>14.637</td><td>0.00</td><td>0.51</td></tr><tr><td>105.449</td><td>105.090</td><td>14.637</td><td>16.035</td><td>0.51</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>18.935</td><td>19.318</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.410</td><td>19.318</td><td>21.828</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.066</td><td>21.828</td><td>23.292</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.405</td><td>23.292</td><td>37.524</td><td>5.00</td><td>5.00</td></tr><tr><td>103.405</td><td>103.202</td><td>37.524</td><td>41.902</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.690</td><td>41.903</td><td>44.080</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.440</td><td>32.592</td><td>33.615</td><td>5.00</td><td>5.00</td></tr><tr><td>102.440</td><td>101.692</td><td>33.615</td><td>36.685</td><td>5.00</td><td>5.00</td></tr><tr><td>101.692</td><td>101.442</td><td>36.685</td><td>37.709</td><td>5.00</td><td>5.00</td></tr><tr><td>101.442</td><td>100.444</td><td>37.709</td><td>41.803</td><td>5.00</td><td>5.00</td></tr><tr><td>100.444</td><td>99.446</td><td>41.803</td><td>45.896</td><td>5.00</td><td>5.00</td></tr><tr><td>99.446</td><td>98.448</td><td>45.896</td><td>49.990</td><td>5.00</td><td>5.00</td></tr><tr><td>98.448</td><td>98.099</td><td>49.990</td><td>51.423</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.423</td><td>125.656</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.09</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.69</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.45</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.26</td></tr><tr><td>105.45</td><td>105.09</td><td>-32.26</td><td>-53.25</td></tr><tr><td>105.09</td><td>105.00</td><td>-39.50</td><td>-42.35</td></tr><tr><td>105.00</td><td>104.41</td><td>-42.35</td><td>-51.71</td></tr><tr><td>104.41</td><td>104.07</td><td>-51.71</td><td>-57.17</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.450	0.000	7.404	0.00	0.00	106.450	106.000	7.404	10.736	0.00	0.00	106.000	105.500	10.736	14.438	0.00	0.00	105.500	105.449	14.438	14.637	0.00	0.51	105.449	105.090	14.637	16.035	0.51	4.10	105.090	105.000	18.935	19.318	4.10	5.00	105.000	104.410	19.318	21.828	5.00	5.00	104.410	104.066	21.828	23.292	5.00	5.00	104.066	103.405	23.292	37.524	5.00	5.00	103.405	103.202	37.524	41.902	5.00	5.00	103.202	102.690	41.903	44.080	5.00	5.00	102.690	102.440	32.592	33.615	5.00	5.00	102.440	101.692	33.615	36.685	5.00	5.00	101.692	101.442	36.685	37.709	5.00	5.00	101.442	100.444	37.709	41.803	5.00	5.00	100.444	99.446	41.803	45.896	5.00	5.00	99.446	98.448	45.896	49.990	5.00	5.00	98.448	98.099	49.990	51.423	5.00	5.00	98.099	80.000	51.423	125.656	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.09	5.005	5.388	30.000	-20.01	18.10	2	102.69	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.45	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.26	105.45	105.09	-32.26	-53.25	105.09	105.00	-39.50	-42.35	105.00	104.41	-42.35	-51.71	104.41	104.07	-51.71	-57.17	<div>Schnitt: Anlage B2 Schnitt 2R</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage B2/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																											
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3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																											
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2	102.69	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																															
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statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>104.07103.41-57.17-67.66</div><div>103.41103.20-67.66-70.89</div><div>103.20102.69-70.89-79.01</div><div>102.69102.44-142.12-152.73</div><div>102.44101.69-152.73-184.55</div><div>101.69101.44-184.55-195.15</div><div>101.44100.44-195.15-237.57</div><div>100.4499.45-237.57-279.99</div><div>99.4598.45-279.99-322.41</div><div>98.4598.10-322.41-337.26</div><div>98.1080.00-337.26-1106.50</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.45-23.3-4.3-1.4</div><div>106.00-34.8-9.0-4.3</div><div>105.50-41.6-4.4-8.6</div><div>105.45-41.9-3.1-8.8</div><div>105.09-44.63.8-8.6</div><div>105.00-46.13.1-8.3</div><div>104.41-56.1-3.8-8.3</div><div>104.07-62.0-9.1-10.5</div><div>103.41-73.8-26.4-21.6</div><div>103.20-77.5-34.2-27.7</div><div>102.69-87.0-56.2-50.8</div><div>102.44-81.3-39.3-62.7</div><div>101.69-68.6-0.5-76.5</div><div>101.44-65.58.7-75.4</div><div>100.44-58.529.7-54.3</div><div>99.45-58.129.3-23.2</div><div>98.45-63.110.6-1.9</div><div>98.10-66.00.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.45-20.3-3.7-1.2</div><div>106.00-30.3-7.8-3.8</div><div>105.50-36.2-3.8-7.5</div><div>105.45-36.5-2.8-7.6</div><div>105.09-38.83.2-7.5</div><div>105.00-40.12.6-7.2</div><div>104.41-48.8-3.3-7.3</div><div>104.07-54.0-7.9-9.2</div><div>103.41-64.2-22.8-18.8</div><div>103.20-67.4-29.5-24.1</div><div>102.69-75.6-48.6-44.0</div><div>102.44-70.8-34.0-54.3</div><div>101.69-59.7-0.4-66.2</div><div>101.44-57.07.5-65.3</div><div>100.44-50.925.7-47.0</div><div>99.45-50.625.3-20.1</div><div>98.45-54.99.2-1.7</div><div>98.10-57.40.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.45-20.3-3.7-1.2</div><div>106.00-30.3-7.8-3.8</div><div>105.50-36.2-3.8-7.5</div><div>105.45-36.5-2.8-7.6</div><div>105.09-38.83.2-7.5</div><div>105.00-40.12.6-7.2</div><div>104.41-48.8-3.3-7.3</div><div>104.07-54.0-7.9-9.2</div><div>103.41-64.2-22.8-18.8</div></div></div></div>		
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Fortner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>103.20</div><div>-67.4</div><div>-29.5</div><div>-24.1</div></div><div><div>102.69</div><div>-75.6</div><div>-48.6</div><div>-44.0</div></div><div><div>102.44</div><div>-70.8</div><div>-34.0</div><div>-54.3</div></div><div><div>101.69</div><div>-59.7</div><div>-0.4</div><div>-66.2</div></div><div><div>101.44</div><div>-57.0</div><div>7.5</div><div>-65.3</div></div><div><div>100.44</div><div>-50.9</div><div>25.7</div><div>-47.0</div></div><div><div>99.45</div><div>-50.6</div><div>25.3</div><div>-20.1</div></div><div><div>98.45</div><div>-54.9</div><div>9.2</div><div>-1.7</div></div><div><div>98.10</div><div>-57.4</div><div>0.0</div><div>0.0</div></div></div> <div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.09</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.07</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.20</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.69</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.69</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div></div> <div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig_{Bh,k}</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>107.45</div><div>-4.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-4.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-4.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-4.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-4.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-3.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-3.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-3.8</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-3.6</div><div>10.00</div><div>36.03</div><div>42.79</div></div><div><div>105.50</div><div>-3.6</div><div>10.00</div><div>35.74</div><div>47.55</div></div><div><div>105.50</div><div>-3.6</div><div>10.00</div><div>35.74</div><div>47.55</div></div><div><div>105.45</div><div>-3.5</div><div>10.00</div><div>35.44</div><div>52.42</div></div><div><div>105.45</div><div>-3.5</div><div>10.00</div><div>35.44</div><div>52.42</div></div><div><div>105.40</div><div>-3.5</div><div>10.00</div><div>35.14</div><div>57.30</div></div><div><div>105.14</div><div>-3.4</div><div>10.00</div><div>33.65</div><div>81.67</div></div><div><div>105.09</div><div>-3.3</div><div>10.00</div><div>33.36</div><div>86.54</div></div><div><div>105.09</div><div>-3.3</div><div>5.00</div><div>16.68</div><div>64.18</div></div><div><div>105.05</div><div>-3.3</div><div>5.00</div><div>16.55</div><div>66.50</div></div><div><div>105.05</div><div>-3.3</div><div>5.00</div><div>16.55</div><div>66.50</div></div><div><div>105.00</div><div>-3.3</div><div>5.00</div><div>16.42</div><div>68.82</div></div><div><div>105.00</div><div>-3.3</div><div>5.00</div><div>16.42</div><div>68.82</div></div><div><div>104.95</div><div>-3.3</div><div>5.00</div><div>16.28</div><div>70.09</div></div><div><div>104.46</div><div>-3.0</div><div>5.00</div><div>14.87</div><div>82.77</div></div><div><div>104.41</div><div>-2.9</div><div>5.00</div><div>14.73</div><div>84.03</div></div><div><div>104.41</div><div>-2.9</div><div>5.00</div><div>14.73</div><div>84.03</div></div><div><div>104.36</div><div>-2.9</div><div>5.00</div><div>14.59</div><div>85.30</div></div><div><div>104.12</div><div>-2.8</div><div>5.00</div><div>13.89</div><div>91.64</div></div><div><div>104.07</div><div>-2.8</div><div>5.00</div><div>13.75</div><div>92.90</div></div><div><div>104.07</div><div>-2.8</div><div>5.00</div><div>13.75</div><div>92.90</div></div><div><div>104.02</div><div>-2.7</div><div>5.00</div><div>13.61</div><div>94.21</div></div><div><div>103.46</div><div>-2.4</div><div>5.00</div><div>12.05</div><div>108.64</div></div><div><div>103.41</div><div>-2.4</div><div>5.00</div><div>11.91</div><div>109.95</div></div></div></div> <div><div>Schnitt:</div><div>Anlage B2</div><div>Schnitt 2R</div></div> <div><div>Seite Anlage B2/4</div><div>Archiv Nr.:</div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div><div>Projekt-Nr.: 2004-0025</div></div> <div><div>Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner</div></div>					



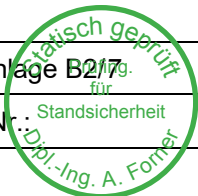
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.41 -2.4 5.00 11.91 109.95 103.35 -2.4 5.00 11.77 111.26 103.25 -2.3 5.00 11.49 113.88 103.20 -2.3 5.00 11.35 115.19 103.20 -2.3 5.00 11.35 115.19 103.15 -2.2 5.00 11.22 116.51 102.74 -2.0 5.00 10.13 127.07 102.69 -2.0 5.00 10.00 128.39 102.69 -2.0 50.00 99.99 230.95 102.64 -2.0 50.00 98.71 234.40 102.49 -1.9 50.00 94.94 244.74 102.44 -1.9 50.00 93.71 248.18 102.44 -1.9 50.00 93.71 248.18 102.39 -1.8 50.00 92.49 251.63 101.74 -1.6 50.00 77.74 296.44 101.69 -1.5 50.00 76.71 299.89 101.69 -1.5 50.00 76.71 299.89 101.64 -1.5 50.00 75.68 303.33 101.49 -1.5 50.00 72.69 313.67 101.44 -1.4 50.00 71.72 317.12 101.44 -1.4 50.00 71.72 317.12 101.39 -1.4 50.00 70.77 320.57 100.49 -1.1 50.00 55.78 382.61 100.44 -1.1 50.00 55.06 386.05 100.44 -1.1 50.00 55.06 386.05 100.39 -1.1 50.00 54.35 389.50 99.50 -0.9 50.00 42.89 451.54 99.45 -0.8 50.00 42.31 454.99 99.45 -0.8 50.00 42.31 454.99 99.40 -0.8 50.00 41.74 458.44 98.50 -0.6 50.00 31.86 520.48 98.45 -0.6 50.00 31.33 523.92 98.45 -0.6 50.00 31.33 523.92 98.40 -0.6 50.00 30.79 527.37 98.15 -0.6 50.00 28.12 544.60 98.10 -0.6 50.00 27.58 548.05 </div> </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.01228097 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> </div>		
Schnitt:	Anlage B2 Schnitt 2R	Seite Anlage B2/5
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2109
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig																		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: $P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}$</div> <div>$G_k = 176.93 \text{ kN/m}$</div> <div>$G'_k = 0.00 \text{ kN/m}$</div> <div>$P_{v,k} = 0.00 \text{ kN/m}$</div> <div>$E_{av,k} = 51.66 \text{ kN/m}$ ($E_{ah,k} = 284.98 \text{ kN/m}$)</div> <div>$B_{v,k} = 122.56$</div> <div>Summe $V_k = 106.03 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand $D = 0.88 \text{ m}$</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div> <div>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div> <div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.09</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.09</td><td>102.69</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.69</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 98.10 m = 1.000 m²/m/m $\implies R_{s1,d}$</div> <div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 252.45 / 1.40 = 180.32 \text{ kN/m}$</div> <div>$R_d = R_{b,d} + R_{s1,d} = 1045.37 \text{ kN/m}$</div> <div>Einwirkungen</div> <div>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 59.40 + 0.00 = 271.72 \text{ kN/m}$</div> <div>$\implies \mu = V_d / R_d = 271.72 / 1045.37 = 0.26$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.09	0.00	S1: Auffüllungen	105.09	102.69	0.00	S2: Auelehm	102.69	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.09	0.00	S1: Auffüllungen															
105.09	102.69	0.00	S2: Auelehm															
102.69	98.10	55.00	s3: Flussskies, -sand															
Schnitt:	Anlage B2 Schnitt 2R	Seite Anlage B2/6																
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2219																
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 11_BS 2_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 3.00 4.57 1.57 1.73 1.65 0.86 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 4.75 107.45 107.45 107.45 102.78 100.73 nein 2 110.00 0.00 2.00 107.45 107.45 107.45 105.44 104.58 ja Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 106.00 105.09 10.000 10.000 105.09 102.69 5.000 5.000 102.69 80.00 50.000 50.000</div>		
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
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<div>Ausnutzungsgrad $\mu_e = 618.904 / 896.468 = 0.690$ Bettungslager $B_{h,d} = 618.904 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 896.468 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{a,k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>46.780</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.450</td><td>46.780</td><td>54.166</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.000</td><td>54.166</td><td>57.899</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>57.899</td><td>62.126</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.439</td><td>62.126</td><td>62.427</td><td>0.00</td><td>0.61</td></tr><tr><td>105.439</td><td>105.090</td><td>62.427</td><td>46.774</td><td>0.61</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>58.423</td><td>53.173</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.578</td><td>53.173</td><td>28.556</td><td>5.00</td><td>5.00</td></tr><tr><td>104.578</td><td>104.424</td><td>28.556</td><td>29.417</td><td>5.00</td><td>5.00</td></tr><tr><td>104.424</td><td>104.066</td><td>29.417</td><td>31.426</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.405</td><td>31.426</td><td>46.550</td><td>5.00</td><td>5.00</td></tr><tr><td>103.405</td><td>103.202</td><td>46.550</td><td>51.204</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.777</td><td>51.204</td><td>53.587</td><td>5.00</td><td>5.00</td></tr><tr><td>102.777</td><td>102.690</td><td>53.587</td><td>53.861</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.427</td><td>39.560</td><td>40.194</td><td>5.00</td><td>5.00</td></tr><tr><td>102.427</td><td>102.178</td><td>40.194</td><td>40.781</td><td>5.00</td><td>5.00</td></tr><tr><td>102.178</td><td>101.430</td><td>40.781</td><td>42.542</td><td>5.00</td><td>5.00</td></tr><tr><td>101.430</td><td>100.733</td><td>42.542</td><td>44.186</td><td>5.00</td><td>5.00</td></tr><tr><td>100.733</td><td>100.435</td><td>44.186</td><td>45.409</td><td>5.00</td><td>5.00</td></tr><tr><td>100.435</td><td>100.285</td><td>45.409</td><td>46.021</td><td>5.00</td><td>5.00</td></tr><tr><td>100.285</td><td>99.441</td><td>46.021</td><td>49.486</td><td>5.00</td><td>5.00</td></tr><tr><td>99.441</td><td>98.447</td><td>49.486</td><td>53.563</td><td>5.00</td><td>5.00</td></tr><tr><td>98.447</td><td>98.099</td><td>53.563</td><td>54.989</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>54.989</td><td>129.223</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>$w(\text{oben})$</th><th>$w(\text{unten})$</th><th>$z(\text{oben})$</th><th>$z(\text{unten})$</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></tbody></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> 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Standssicherheit

Dipl.-Ing. A. Forner



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<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.45</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.44</td><td>-29.26</td><td>-32.82</td></tr><tr><td>105.44</td><td>105.09</td><td>-32.82</td><td>-53.25</td></tr><tr><td>105.09</td><td>105.00</td><td>-39.50</td><td>-42.35</td></tr><tr><td>105.00</td><td>104.58</td><td>-42.35</td><td>-49.05</td></tr><tr><td>104.58</td><td>104.42</td><td>-49.05</td><td>-51.49</td></tr><tr><td>104.42</td><td>104.07</td><td>-51.49</td><td>-57.17</td></tr><tr><td>104.07</td><td>103.41</td><td>-57.17</td><td>-67.66</td></tr><tr><td>103.41</td><td>103.20</td><td>-67.66</td><td>-70.89</td></tr><tr><td>103.20</td><td>102.78</td><td>-70.89</td><td>-77.63</td></tr><tr><td>102.78</td><td>102.69</td><td>-77.63</td><td>-79.01</td></tr><tr><td>102.69</td><td>102.43</td><td>-142.12</td><td>-153.31</td></tr><tr><td>102.43</td><td>102.18</td><td>-153.31</td><td>-163.90</td></tr><tr><td>102.18</td><td>101.43</td><td>-163.90</td><td>-195.66</td></tr><tr><td>101.43</td><td>100.73</td><td>-195.66</td><td>-225.31</td></tr><tr><td>100.73</td><td>100.43</td><td>-225.31</td><td>-237.99</td></tr><tr><td>100.43</td><td>100.29</td><td>-237.99</td><td>-244.32</td></tr><tr><td>100.29</td><td>99.44</td><td>-244.32</td><td>-280.23</td></tr><tr><td>99.44</td><td>98.45</td><td>-280.23</td><td>-322.48</td></tr><tr><td>98.45</td><td>98.10</td><td>-322.48</td><td>-337.26</td></tr><tr><td>98.10</td><td>80.00</td><td>-337.26</td><td>-1106.50</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td></tr><tr><td>106.45</td><td>-45.2</td><td>-64.4</td><td>-31.4</td></tr><tr><td>106.00</td><td>-66.6</td><td>-96.3</td><td>-67.5</td></tr><tr><td>105.50</td><td>-74.0</td><td>-120.8</td><td>-122.9</td></tr><tr><td>105.44</td><td>-74.0</td><td>-122.0</td><td>-130.3</td></tr><tr><td>105.09</td><td>-71.1</td><td>-117.8</td><td>-172.7</td></tr><tr><td>105.00</td><td>-71.2</td><td>-117.5</td><td>-183.3</td></tr><tr><td>104.58</td><td>-72.2</td><td>-110.4</td><td>-231.7</td></tr><tr><td>104.42</td><td>-72.9</td><td>-106.3</td><td>-248.4</td></tr><tr><td>104.07</td><td>-74.9</td><td>-99.3</td><td>-285.1</td></tr><tr><td>103.41</td><td>-80.3</td><td>-99.4</td><td>-349.7</td></tr><tr><td>103.20</td><td>-82.4</td><td>-103.3</td><td>-370.3</td></tr><tr><td>102.78</td><td>-87.4</td><td>-115.6</td><td>-416.7</td></tr><tr><td>102.69</td><td>-88.5</td><td>-118.6</td><td>-426.8</td></tr><tr><td>102.43</td><td>-64.3</td><td>-56.9</td><td>-450.0</td></tr><tr><td>102.18</td><td>-43.1</td><td>-2.8</td><td>-457.2</td></tr><tr><td>101.43</td><td>1.4</td><td>110.3</td><td>-412.8</td></tr><tr><td>100.73</td><td>21.3</td><td>159.8</td><td>-315.8</td></tr><tr><td>100.43</td><td>24.5</td><td>167.1</td><td>-266.8</td></tr><tr><td>100.29</td><td>25.1</td><td>168.0</td><td>-241.8</td></tr><tr><td>99.44</td><td>16.4</td><td>141.2</td><td>-107.6</td></tr><tr><td>98.45</td><td>3.3</td><td>47.6</td><td>-8.5</td></tr><tr><td>98.10</td><td>4.7</td><td>0.0</td><td>0.0</td></tr></tbody></table>			von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.45	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.44	-29.26	-32.82	105.44	105.09	-32.82	-53.25	105.09	105.00	-39.50	-42.35	105.00	104.58	-42.35	-49.05	104.58	104.42	-49.05	-51.49	104.42	104.07	-51.49	-57.17	104.07	103.41	-57.17	-67.66	103.41	103.20	-67.66	-70.89	103.20	102.78	-70.89	-77.63	102.78	102.69	-77.63	-79.01	102.69	102.43	-142.12	-153.31	102.43	102.18	-153.31	-163.90	102.18	101.43	-163.90	-195.66	101.43	100.73	-195.66	-225.31	100.73	100.43	-225.31	-237.99	100.43	100.29	-237.99	-244.32	100.29	99.44	-244.32	-280.23	99.44	98.45	-280.23	-322.48	98.45	98.10	-322.48	-337.26	98.10	80.00	-337.26	-1106.50	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	-0.1	0.0	106.45	-45.2	-64.4	-31.4	106.00	-66.6	-96.3	-67.5	105.50	-74.0	-120.8	-122.9	105.44	-74.0	-122.0	-130.3	105.09	-71.1	-117.8	-172.7	105.00	-71.2	-117.5	-183.3	104.58	-72.2	-110.4	-231.7	104.42	-72.9	-106.3	-248.4	104.07	-74.9	-99.3	-285.1	103.41	-80.3	-99.4	-349.7	103.20	-82.4	-103.3	-370.3	102.78	-87.4	-115.6	-416.7	102.69	-88.5	-118.6	-426.8	102.43	-64.3	-56.9	-450.0	102.18	-43.1	-2.8	-457.2	101.43	1.4	110.3	-412.8	100.73	21.3	159.8	-315.8	100.43	24.5	167.1	-266.8	100.29	25.1	168.0	-241.8	99.44	16.4	141.2	-107.6	98.45	3.3	47.6	-8.5	98.10	4.7	0.0	0.0
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<tr><td>102.43</td><td>-66.9</td><td>-45.2</td><td>-114.8</td></tr> <tr><td>102.18</td><td>-58.9</td><td>-24.4</td><td>-123.4</td></tr> <tr><td>101.43</td><td>-41.0</td><td>21.3</td><td>-123.1</td></tr> <tr><td>100.73</td><td>-31.7</td><td>44.2</td><td>-99.2</td></tr> <tr><td>100.43</td><td>-29.5</td><td>49.0</td><td>-85.3</td></tr> <tr><td>100.29</td><td>-28.8</td><td>50.4</td><td>-77.8</td></tr> <tr><td>99.44</td><td>-28.9</td><td>45.8</td><td>-35.8</td></tr> <tr><td>98.45</td><td>-37.1</td><td>16.2</td><td>-2.9</td></tr> <tr><td>98.10</td><td>-41.9</td><td>0.0</td><td>0.0</td></tr> </table> <p>Schnittgrößen (q,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr> <tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>107.45</td><td>0.0</td><td>-0.1</td><td>0.0</td></tr> <tr><td>106.45</td><td>-15.6</td><td>-42.8</td><td>-21.4</td></tr> 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</table>				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	-0.1	0.0	106.45	-37.3	-50.4	-24.6	106.00	-55.0	-75.6	-52.8	105.50	-61.6	-95.0	-96.4	105.44	-61.7	-95.9	-102.2	105.09	-59.8	-92.4	-135.5	105.00	-60.0	-92.2	-143.8	104.58	-61.4	-87.0	-181.9	104.42	-62.1	-84.0	-195.0	104.07	-64.1	-79.1	-224.1	103.41	-69.3	-80.8	-276.0	103.20	-71.3	-84.7	-292.9	102.78	-75.8	-96.1	-331.2	102.69	-76.8	-98.8	-339.6	102.43	-57.2	-48.8	-359.1	102.18	-40.0	-4.9	-365.6	101.43	-3.7	87.2	-331.3	100.73	12.7	127.9	-254.1	100.43	15.4	134.1	-214.8	100.29	16.0	134.9	-194.8	99.44	9.3	113.7	-86.8	98.45	-1.7	38.4	-6.9	98.10	-1.2	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.45	-21.7	-7.6	-3.2	106.00	-32.4	-13.5	-7.9	105.50	-40.4	-17.5	-15.9	105.44	-41.1	-17.5	-17.0	105.09	-44.0	-15.1	-22.8	105.00	-45.0	-15.4	-24.2	104.58	-50.0	-17.9	-31.1	104.42	-51.9	-19.3	-34.0	104.07	-56.4	-23.7	-41.6	103.41	-65.4	-39.4	-61.8	103.20	-68.2	-46.7	-70.6	102.78	-74.4	-64.2	-94.1	102.69	-75.7	-68.0	-99.8	102.43	-66.9	-45.2	-114.8	102.18	-58.9	-24.4	-123.4	101.43	-41.0	21.3	-123.1	100.73	-31.7	44.2	-99.2	100.43	-29.5	49.0	-85.3	100.29	-28.8	50.4	-77.8	99.44	-28.9	45.8	-35.8	98.45	-37.1	16.2	-2.9	98.10	-41.9	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	-0.1	0.0	106.45	-15.6	-42.8	-21.4	106.00	-22.6	-62.1	-45.0	105.50	-21.2	-77.5	-80.4	105.44	-20.6	-78.5	-85.2	105.09	-15.8	-77.3	-112.7	105.00	-15.0	-76.8	-119.6	104.58	-11.4	-69.1	-150.8	104.42	-10.2	-64.7	-161.0	104.07	-7.7	-55.3	-182.5	103.41	-4.0	-41.4	-214.2
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																									
<table><tr><td>103.20</td><td>-3.0</td><td>-38.0</td><td>-222.3</td></tr><tr><td>102.78</td><td>-1.4</td><td>-31.8</td><td>-237.1</td></tr><tr><td>102.69</td><td>-1.1</td><td>-30.8</td><td>-239.8</td></tr><tr><td>102.43</td><td>9.7</td><td>-3.6</td><td>-244.3</td></tr><tr><td>102.18</td><td>18.9</td><td>19.5</td><td>-242.2</td></tr><tr><td>101.43</td><td>37.3</td><td>66.0</td><td>-208.3</td></tr><tr><td>100.73</td><td>44.4</td><td>83.6</td><td>-154.8</td></tr><tr><td>100.43</td><td>44.9</td><td>85.0</td><td>-129.6</td></tr><tr><td>100.29</td><td>44.7</td><td>84.5</td><td>-116.9</td></tr><tr><td>99.44</td><td>38.1</td><td>67.9</td><td>-51.0</td></tr><tr><td>98.45</td><td>35.4</td><td>22.2</td><td>-4.0</td></tr><tr><td>98.10</td><td>40.7</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-21.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-21.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-21.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-17.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-15.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-15.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-15.7</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-14.3</td><td>3.00</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-14.1</td><td>3.00</td><td>42.26</td><td>47.55</td></tr><tr><td>105.50</td><td>-14.1</td><td>3.37</td><td>47.55</td><td>47.55</td></tr><tr><td>105.44</td><td>-13.9</td><td>3.37</td><td>46.83</td><td>53.33</td></tr><tr><td>105.44</td><td>-13.9</td><td>3.84</td><td>53.34</td><td>53.33</td></tr><tr><td>105.39</td><td>-13.7</td><td>3.84</td><td>52.66</td><td>58.08</td></tr><tr><td>105.14</td><td>-12.8</td><td>6.37</td><td>81.80</td><td>81.80</td></tr><tr><td>105.09</td><td>-12.7</td><td>6.37</td><td>80.70</td><td>86.54</td></tr><tr><td>105.09</td><td>-12.7</td><td>5.00</td><td>63.32</td><td>64.18</td></tr><tr><td>105.05</td><td>-12.5</td><td>5.00</td><td>62.55</td><td>66.50</td></tr><tr><td>105.05</td><td>-12.5</td><td>5.00</td><td>62.55</td><td>66.50</td></tr><tr><td>105.00</td><td>-12.4</td><td>5.00</td><td>61.77</td><td>68.82</td></tr><tr><td>105.00</td><td>-12.4</td><td>5.00</td><td>61.77</td><td>68.82</td></tr><tr><td>104.95</td><td>-12.2</td><td>5.00</td><td>60.86</td><td>70.18</td></tr><tr><td>104.63</td><td>-11.1</td><td>5.00</td><td>55.51</td><td>78.34</td></tr><tr><td>104.58</td><td>-10.9</td><td>5.00</td><td>54.63</td><td>79.70</td></tr><tr><td>104.58</td><td>-10.9</td><td>5.00</td><td>54.63</td><td>79.70</td></tr><tr><td>104.53</td><td>-10.8</td><td>5.00</td><td>53.78</td><td>81.02</td></tr><tr><td>104.48</td><td>-10.6</td><td>5.00</td><td>52.94</td><td>82.34</td></tr><tr><td>104.42</td><td>-10.4</td><td>5.00</td><td>52.10</td><td>83.66</td></tr><tr><td>104.42</td><td>-10.4</td><td>5.00</td><td>52.10</td><td>83.66</td></tr><tr><td>104.37</td><td>-10.3</td><td>5.00</td><td>51.26</td><td>84.98</td></tr><tr><td>104.12</td><td>-9.4</td><td>5.00</td><td>47.15</td><td>91.58</td></tr><tr><td>104.07</td><td>-9.3</td><td>5.00</td><td>46.34</td><td>92.90</td></tr><tr><td>104.07</td><td>-9.3</td><td>5.00</td><td>46.34</td><td>92.90</td></tr><tr><td>104.02</td><td>-9.1</td><td>5.00</td><td>45.54</td><td>94.21</td></tr><tr><td>103.46</td><td>-7.4</td><td>5.00</td><td>37.12</td><td>108.64</td></tr><tr><td>103.41</td><td>-7.3</td><td>5.00</td><td>36.38</td><td>109.95</td></tr><tr><td>103.41</td><td>-7.3</td><td>5.00</td><td>36.38</td><td>109.95</td></tr><tr><td>103.35</td><td>-7.1</td><td>5.00</td><td>35.66</td><td>111.26</td></tr><tr><td>103.25</td><td>-6.8</td><td>5.00</td><td>34.23</td><td>113.88</td></tr><tr><td>103.20</td><td>-6.7</td><td>5.00</td><td>33.52</td><td>115.19</td></tr><tr><td>103.20</td><td>-6.7</td><td>5.00</td><td>33.52</td><td>115.19</td></tr><tr><td>103.15</td><td>-6.6</td><td>5.00</td><td>32.87</td><td>116.41</td></tr><tr><td>102.82</td><td>-5.7</td><td>5.00</td><td>28.47</td><td>124.94</td></tr><tr><td>102.78</td><td>-5.6</td><td>5.00</td><td>27.87</td><td>126.15</td></tr><tr><td>102.78</td><td>-5.6</td><td>5.00</td><td>27.87</td><td>126.15</td></tr><tr><td>102.73</td><td>-5.5</td><td>5.00</td><td>27.32</td><td>127.27</td></tr><tr><td>102.73</td><td>-5.5</td><td>5.00</td><td>27.32</td><td>127.27</td></tr><tr><td>102.69</td><td>-5.4</td><td>5.00</td><td>26.78</td><td>128.39</td></tr><tr><td>102.69</td><td>-5.4</td><td>43.13</td><td>230.97</td><td>230.95</td></tr><tr><td>102.68</td><td>-5.3</td><td>43.13</td><td>229.46</td><td>231.92</td></tr></table>						103.20	-3.0	-38.0	-222.3	102.78	-1.4	-31.8	-237.1	102.69	-1.1	-30.8	-239.8	102.43	9.7	-3.6	-244.3	102.18	18.9	19.5	-242.2	101.43	37.3	66.0	-208.3	100.73	44.4	83.6	-154.8	100.43	44.9	85.0	-129.6	100.29	44.7	84.5	-116.9	99.44	38.1	67.9	-51.0	98.45	35.4	22.2	-4.0	98.10	40.7	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-21.2	-	-	-	107.45	-21.2	-	-	-	107.45	-21.2	-	-	-	107.40	-21.0	-	-	-	106.50	-17.7	-	-	-	106.45	-17.5	-	-	-	106.45	-17.5	-	-	-	106.38	-17.3	-	-	-	106.05	-16.1	-	-	-	106.00	-15.9	0.00	0.00	0.00	106.00	-15.9	0.00	0.00	0.00	105.95	-15.7	0.00	0.00	4.75	105.55	-14.3	3.00	42.80	42.79	105.50	-14.1	3.00	42.26	47.55	105.50	-14.1	3.37	47.55	47.55	105.44	-13.9	3.37	46.83	53.33	105.44	-13.9	3.84	53.34	53.33	105.39	-13.7	3.84	52.66	58.08	105.14	-12.8	6.37	81.80	81.80	105.09	-12.7	6.37	80.70	86.54	105.09	-12.7	5.00	63.32	64.18	105.05	-12.5	5.00	62.55	66.50	105.05	-12.5	5.00	62.55	66.50	105.00	-12.4	5.00	61.77	68.82	105.00	-12.4	5.00	61.77	68.82	104.95	-12.2	5.00	60.86	70.18	104.63	-11.1	5.00	55.51	78.34	104.58	-10.9	5.00	54.63	79.70	104.58	-10.9	5.00	54.63	79.70	104.53	-10.8	5.00	53.78	81.02	104.48	-10.6	5.00	52.94	82.34	104.42	-10.4	5.00	52.10	83.66	104.42	-10.4	5.00	52.10	83.66	104.37	-10.3	5.00	51.26	84.98	104.12	-9.4	5.00	47.15	91.58	104.07	-9.3	5.00	46.34	92.90	104.07	-9.3	5.00	46.34	92.90	104.02	-9.1	5.00	45.54	94.21	103.46	-7.4	5.00	37.12	108.64	103.41	-7.3	5.00	36.38	109.95	103.41	-7.3	5.00	36.38	109.95	103.35	-7.1	5.00	35.66	111.26	103.25	-6.8	5.00	34.23	113.88	103.20	-6.7	5.00	33.52	115.19	103.20	-6.7	5.00	33.52	115.19	103.15	-6.6	5.00	32.87	116.41	102.82	-5.7	5.00	28.47	124.94	102.78	-5.6	5.00	27.87	126.15	102.78	-5.6	5.00	27.87	126.15	102.73	-5.5	5.00	27.32	127.27	102.73	-5.5	5.00	27.32	127.27	102.69	-5.4	5.00	26.78	128.39	102.69	-5.4	43.13	230.97	230.95	102.68	-5.3	43.13	229.46	231.92
103.20	-3.0	-38.0	-222.3																																																																																																																																																																																																																																																																																																																																										
102.78	-1.4	-31.8	-237.1																																																																																																																																																																																																																																																																																																																																										
102.69	-1.1	-30.8	-239.8																																																																																																																																																																																																																																																																																																																																										
102.43	9.7	-3.6	-244.3																																																																																																																																																																																																																																																																																																																																										
102.18	18.9	19.5	-242.2																																																																																																																																																																																																																																																																																																																																										
101.43	37.3	66.0	-208.3																																																																																																																																																																																																																																																																																																																																										
100.73	44.4	83.6	-154.8																																																																																																																																																																																																																																																																																																																																										
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100.29	44.7	84.5	-116.9																																																																																																																																																																																																																																																																																																																																										
99.44	38.1	67.9	-51.0																																																																																																																																																																																																																																																																																																																																										
98.45	35.4	22.2	-4.0																																																																																																																																																																																																																																																																																																																																										
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[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																																									
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106.38	-17.3	-	-	-																																																																																																																																																																																																																																																																																																																																									
106.05	-16.1	-	-	-																																																																																																																																																																																																																																																																																																																																									
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105.95	-15.7	0.00	0.00	4.75																																																																																																																																																																																																																																																																																																																																									
105.55	-14.3	3.00	42.80	42.79																																																																																																																																																																																																																																																																																																																																									
105.50	-14.1	3.00	42.26	47.55																																																																																																																																																																																																																																																																																																																																									
105.50	-14.1	3.37	47.55	47.55																																																																																																																																																																																																																																																																																																																																									
105.44	-13.9	3.37	46.83	53.33																																																																																																																																																																																																																																																																																																																																									
105.44	-13.9	3.84	53.34	53.33																																																																																																																																																																																																																																																																																																																																									
105.39	-13.7	3.84	52.66	58.08																																																																																																																																																																																																																																																																																																																																									
105.14	-12.8	6.37	81.80	81.80																																																																																																																																																																																																																																																																																																																																									
105.09	-12.7	6.37	80.70	86.54																																																																																																																																																																																																																																																																																																																																									
105.09	-12.7	5.00	63.32	64.18																																																																																																																																																																																																																																																																																																																																									
105.05	-12.5	5.00	62.55	66.50																																																																																																																																																																																																																																																																																																																																									
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105.00	-12.4	5.00	61.77	68.82																																																																																																																																																																																																																																																																																																																																									
105.00	-12.4	5.00	61.77	68.82																																																																																																																																																																																																																																																																																																																																									
104.95	-12.2	5.00	60.86	70.18																																																																																																																																																																																																																																																																																																																																									
104.63	-11.1	5.00	55.51	78.34																																																																																																																																																																																																																																																																																																																																									
104.58	-10.9	5.00	54.63	79.70																																																																																																																																																																																																																																																																																																																																									
104.58	-10.9	5.00	54.63	79.70																																																																																																																																																																																																																																																																																																																																									
104.53	-10.8	5.00	53.78	81.02																																																																																																																																																																																																																																																																																																																																									
104.48	-10.6	5.00	52.94	82.34																																																																																																																																																																																																																																																																																																																																									
104.42	-10.4	5.00	52.10	83.66																																																																																																																																																																																																																																																																																																																																									
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104.37	-10.3	5.00	51.26	84.98																																																																																																																																																																																																																																																																																																																																									
104.12	-9.4	5.00	47.15	91.58																																																																																																																																																																																																																																																																																																																																									
104.07	-9.3	5.00	46.34	92.90																																																																																																																																																																																																																																																																																																																																									
104.07	-9.3	5.00	46.34	92.90																																																																																																																																																																																																																																																																																																																																									
104.02	-9.1	5.00	45.54	94.21																																																																																																																																																																																																																																																																																																																																									
103.46	-7.4	5.00	37.12	108.64																																																																																																																																																																																																																																																																																																																																									
103.41	-7.3	5.00	36.38	109.95																																																																																																																																																																																																																																																																																																																																									
103.41	-7.3	5.00	36.38	109.95																																																																																																																																																																																																																																																																																																																																									
103.35	-7.1	5.00	35.66	111.26																																																																																																																																																																																																																																																																																																																																									
103.25	-6.8	5.00	34.23	113.88																																																																																																																																																																																																																																																																																																																																									
103.20	-6.7	5.00	33.52	115.19																																																																																																																																																																																																																																																																																																																																									
103.20	-6.7	5.00	33.52	115.19																																																																																																																																																																																																																																																																																																																																									
103.15	-6.6	5.00	32.87	116.41																																																																																																																																																																																																																																																																																																																																									
102.82	-5.7	5.00	28.47	124.94																																																																																																																																																																																																																																																																																																																																									
102.78	-5.6	5.00	27.87	126.15																																																																																																																																																																																																																																																																																																																																									
102.78	-5.6	5.00	27.87	126.15																																																																																																																																																																																																																																																																																																																																									
102.73	-5.5	5.00	27.32	127.27																																																																																																																																																																																																																																																																																																																																									
102.73	-5.5	5.00	27.32	127.27																																																																																																																																																																																																																																																																																																																																									
102.69	-5.4	5.00	26.78	128.39																																																																																																																																																																																																																																																																																																																																									
102.69	-5.4	43.13	230.97	230.95																																																																																																																																																																																																																																																																																																																																									
102.68	-5.3	43.13	229.46	231.92																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage B2 Schnitt 2R				Seite Anlage B2/14																																																																																																																																																																																																																																																																																																																																									
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig				-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024
102.48	-4.8	50.00	241.83	245.69
102.43	-4.7	50.00	235.97	249.13
102.43	-4.7	50.00	235.97	249.13
102.38	-4.6	50.00	230.18	252.57
102.23	-4.3	50.00	213.28	262.89
102.18	-4.2	50.00	207.80	266.33
102.18	-4.2	50.00	207.80	266.33
102.13	-4.0	50.00	202.40	269.78
101.48	-2.8	50.00	139.09	314.51
101.43	-2.7	50.00	134.73	317.95
101.43	-2.7	50.00	134.73	317.95
101.38	-2.6	50.00	130.45	321.39
100.78	-1.7	50.00	84.09	362.69
100.73	-1.6	50.00	80.61	366.13
100.73	-1.6	50.00	80.61	366.13
100.68	-1.5	50.00	77.20	369.56
100.48	-1.3	50.00	64.04	383.29
100.43	-1.2	50.00	60.88	386.73
100.43	-1.2	50.00	60.88	386.73
100.38	-1.2	50.00	57.75	390.16
100.34	-1.1	50.00	54.67	393.59
100.29	-1.0	50.00	51.64	397.02
100.29	-1.0	50.00	51.64	397.02
100.24	-1.0	50.00	48.64	400.46
99.49	-0.2	50.00	7.65	451.94
99.44	-0.1	50.00	5.13	455.38
99.44	-0.1	50.00	5.13	455.38
99.39	-0.1	50.00	2.61	458.81
98.50	0.8	50.00	-40.66	520.59
98.45	0.9	50.00	-43.01	524.02
98.45	0.9	50.00	-43.01	524.02
98.40	0.9	50.00	-45.36	527.46
98.15	1.1	50.00	-57.09	544.62
98.10	1.2	50.00	-59.44	548.05
<p>Verdrehung (Theoretischer Fußpunkt) [°]</p> <p>$\phi_{i,[g+q],k}$: -0.05409944</p> <p>Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe t_g = 7.90 m</p> <p>Profillänge = 9.35 m</p>				
Schnitt: Anlage B2 Schnitt 2R				Seite Anlage B2/12
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik				



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G'_k - G'_k + E_{av,k} \geq B_{v,k}$</p> <p>$G_k = 176.93 \text{ kN/m}$</p> <p>$G'_k = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 79.08 \text{ kN/m}$ ($E_{ah,k} = 441.31 \text{ kN/m}$)</p> <p>$B_{v,k} = 189.49$</p> <p>Summe $V_k = 66.52 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k} [\text{kN/m}^2]$</th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>106.00</td> <td>105.09</td> <td>0.00</td> <td>S1: Auffüllungen</td> </tr> <tr> <td>105.09</td> <td>102.69</td> <td>0.00</td> <td>S2: Auelehm</td> </tr> <tr> <td>102.69</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 252.45 / 1.40 = 180.32 \text{ kN/m}$</p> <p>$R_{d} = R_{b,d} + R_{s1,d} = 1045.37 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{d,k} = G_{d,k} - G'_{d,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 93.79 + 0.00 = 306.11 \text{ kN/m}$</p> <p>$\Rightarrow \mu = V_{d,k} / R_d = 306.11 / 1045.37 = 0.29$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.09	0.00	S1: Auffüllungen	105.09	102.69	0.00	S2: Auelehm	102.69	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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105.09	102.69	0.00	S2: Auelehm															
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Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/13																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit																
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																							
Auftraggeber: Stadtverwaltung Leipzig																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <div><div>GGU-RETAIN / Version 12.00 / 01.02.2024</div><div>Bohrpfahlwand</div><div>=====</div><div>Teilsicherheitskonzept (EC 7)</div><div>EMG TBA 3.2 - Schnitt 2</div><div>Datei: 12_BS 2_LF2.1 (ohne Lasten).vrb</div><div>Datum: 20.06.2024</div><div>Indices:</div><div>d = Bemessungswert</div><div>k = charakteristisch</div><div>g = Ständig, einschließlich Wasserdruck</div><div>q = Veränderlich</div><div>g+q = Ständig + Veränderlich, einschließlich Wasserdruck</div><div>w = Wasserdruck</div><div>Wandkopf = 107.45 mNHN</div><div>Maximale Teilung bis Baugrubensohle: 0.050 m</div><div>Maximale Teilung unter Baugrubensohle: 0.050 m</div><div>Baugrubensohle = 102.55 mNHN</div><div>Bohrpfahldurchmesser = 0.88 m</div><div>Bohrpfahlabstand = 1.50 m</div><div>Anzahl unbew. Pfähle = 1</div><div>Grundwasserstand (rechts) = 105.50 mNHN</div><div>Grundwasserstand (links) = 105.00 mNHN</div><div>Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div><div>Teilsicherheiten</div><div>BS: DIN EN 1997-1: BS-T</div><div>gamma(G) = 1.20</div><div>gamma(G,Ruhe) = 1.10</div><div>gamma(Q) = 1.30</div><div>gamma(Ep) = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div>Bermen auf der Aktivseite</div><div><table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>3.00</td><td>4.57</td><td>1.57</td><td>1.73</td><td>1.65</td><td>0.86</td><td>0.00</td><td>nein</td></tr></table></div><div>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet.</div><div>Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich.</div><div>Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div><div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div><div>Art des Fußlagers:</div><div>Profillänge automatisch und Fuß gebettet</div><div>Profillänge = 9.35 m</div><div>Bettungsmodule</div><div><table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table></div><div>Ausnutzungsgrad $\mu_e = 291.089 / 421.009 = 0.691$</div><div>Bettungslager $B_{h,d} = 291.089$ kN/m</div><div>Erdwiderstand $E_{ph,d} = 421.009$ kN/m</div></div>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	3.00	4.57	1.57	1.73	1.65	0.86	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																	
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Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/14																																							
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr. 2004-0025																																							
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																							

Statistisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																								
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																								
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-79.55</td><td>-68.85</td><td>-68.85</td><td>-7.60</td><td>6.900E+4</td><td>2.100E+7</td><td>-87.78</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-5.1</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-5.2</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-5.2</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-5.3</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-5.4</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-5.6</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-5.7</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-5.8</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-5.9</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-6.0</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-6.1</td><td>0.0</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-6.2</td><td>0.1</td><td>-79.55</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 2\Rechtes Ufer\10_BS 2_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0044</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ'_{m,k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>21.534</td><td>21.534</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.450</td><td>21.534</td><td>21.534</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>105.500</td><td>21.534</td><td>21.534</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>21.534</td><td>21.534</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.090</td><td>21.534</td><td>21.534</td><td>0.50</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>21.534</td><td>21.534</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.402</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>104.402</td><td>104.354</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>104.354</td><td>104.066</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.400</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>103.202</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-79.55	-68.85	-68.85	-7.60	6.900E+4	2.100E+7	-87.78	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-5.1	0.0	-79.55	0.00	0.00	-0.90	106.95	-5.2	0.0	-79.55	0.00	0.00	-0.90	106.95	-5.2	0.0	-79.55	0.00	0.00	-0.80	106.95	-5.3	0.0	-79.55	0.00	0.00	-0.70	106.95	-5.4	0.0	-79.55	0.00	0.00	-0.60	106.95	-5.6	0.0	-79.55	0.00	0.00	-0.50	106.95	-5.7	0.0	-79.55	0.00	0.00	-0.40	106.95	-5.8	0.0	-79.55	0.00	0.00	-0.30	106.95	-5.9	0.0	-79.55	0.00	0.00	-0.20	106.95	-6.0	0.0	-79.55	0.00	0.00	-0.10	106.95	-6.1	0.0	-79.55	0.00	0.00	0.00	106.95	-6.2	0.1	-79.55	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0044	Schicht	UK	γ _{m,k}	γ' _{m,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	21.534	21.534	0.00	0.00	106.950	106.450	21.534	21.534	0.00	0.00	106.450	105.500	21.534	21.534	0.00	0.00	105.500	105.450	21.534	21.534	0.00	0.50	105.450	105.090	21.534	21.534	0.50	4.10	105.090	105.000	21.534	21.534	4.10	5.00	105.000	104.402	17.945	17.945	5.00	5.00	104.402	104.354	17.945	17.945	5.00	5.00	104.354	104.066	17.945	17.945	5.00	5.00	104.066	103.400	17.945	17.945	5.00	5.00	103.400	103.202	17.945	17.945	5.00	5.00	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																
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<table><tr><td>103.202</td><td>102.690</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.550</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>33.166</td><td>33.576</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>33.576</td><td>36.038</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>36.038</td><td>37.679</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>37.679</td><td>41.781</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>41.781</td><td>45.884</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>45.884</td><td>49.987</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>49.987</td><td>51.423</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.423</td><td>125.656</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-15.4</td><td>-12.4</td><td>-3.1</td><td>-79.6</td></tr><tr><td>106.95</td><td>-15.4</td><td>67.2</td><td>-3.1</td><td></td></tr><tr><td>106.45</td><td>-30.8</td><td>54.8</td><td>27.4</td><td></td></tr><tr><td>105.50</td><td>-60.0</td><td>31.3</td><td>68.3</td><td></td></tr><tr><td>105.45</td><td>-61.6</td><td>30.0</td><td>69.8</td><td></td></tr><tr><td>105.09</td><td>-72.6</td><td>20.1</td><td>78.9</td><td></td></tr><tr><td>105.00</td><td>-75.2</td><td>17.4</td><td>80.6</td><td></td></tr><tr><td>104.40</td><td>-91.5</td><td>1.5</td><td>86.2</td><td></td></tr><tr><td>104.35</td><td>-92.8</td><td>0.2</td><td>86.2</td><td></td></tr><tr><td>104.07</td><td>-100.7</td><td>-7.5</td><td>85.2</td><td></td></tr><tr><td>103.40</td><td>-118.9</td><td>-25.2</td><td>74.3</td><td></td></tr><tr><td>103.20</td><td>-124.3</td><td>-30.5</td><td>68.7</td><td></td></tr><tr><td>102.69</td><td>-138.2</td><td>-44.1</td><td>49.6</td><td></td></tr><tr><td>102.55</td><td>-142.4</td><td>-47.9</td><td>43.2</td><td></td></tr><tr><td>102.45</td><td>-145.2</td><td>-52.1</td><td>38.2</td><td></td></tr><tr><td>101.85</td><td>-151.2</td><td>-61.9</td><td>2.6</td><td></td></tr><tr><td>101.45</td><td>-149.0</td><td>-53.5</td><td>-20.8</td><td></td></tr><tr><td>100.45</td><td>-128.0</td><td>2.9</td><td>-47.0</td><td></td></tr><tr><td>99.45</td><td>-117.1</td><td>28.9</td><td>-27.6</td><td></td></tr><tr><td>98.45</td><td>-120.5</td><td>14.4</td><td>-2.7</td><td></td></tr><tr><td>98.10</td><td>-124.9</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.202	102.690	17.945	17.945	5.00	5.00	102.690	102.550	17.945	17.945	5.00	5.00	102.550	102.450	33.166	33.576	5.00	5.00	102.450	101.850	33.576	36.038	5.00	5.00	101.850	101.450	36.038	37.679	5.00	5.00	101.450	100.449	37.679	41.781	5.00	5.00	100.449	99.449	41.781	45.884	5.00	5.00	99.449	98.449	45.884	49.987	5.00	5.00	98.449	98.099	49.987	51.423	5.00	5.00	98.099	80.000	51.423	125.656	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-15.4	-12.4	-3.1	-79.6	106.95	-15.4	67.2	-3.1		106.45	-30.8	54.8	27.4		105.50	-60.0	31.3	68.3		105.45	-61.6	30.0	69.8		105.09	-72.6	20.1	78.9		105.00	-75.2	17.4	80.6		104.40	-91.5	1.5	86.2		104.35	-92.8	0.2	86.2		104.07	-100.7	-7.5	85.2		103.40	-118.9	-25.2	74.3		103.20	-124.3	-30.5	68.7		102.69	-138.2	-44.1	49.6		102.55	-142.4	-47.9	43.2		102.45	-145.2	-52.1	38.2		101.85	-151.2	-61.9	2.6		101.45	-149.0	-53.5	-20.8		100.45	-128.0	2.9	-47.0		99.45	-117.1	28.9	-27.6		98.45	-120.5	14.4	-2.7		98.10	-124.9	0.0	0.0	
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Standssicherheit

Dipl.-Ing. A. Forner



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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.31</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.11</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.01</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.74</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-3.2</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-3.2</td><td>1.07</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-3.2</td><td>1.07</td><td>3.42</td><td>6.91</td></tr><tr><td>102.45</td><td>-3.2</td><td>2.16</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-3.2</td><td>2.16</td><td>6.83</td><td>10.36</td></tr><tr><td>101.90</td><td>-2.8</td><td>16.07</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-2.8</td><td>16.07</td><td>44.31</td><td>48.36</td></tr><tr><td>101.85</td><td>-2.8</td><td>17.54</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-2.7</td><td>17.54</td><td>47.71</td><td>51.81</td></tr><tr><td>101.50</td><td>-2.5</td><td>29.02</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-2.5</td><td>29.02</td><td>71.48</td><td>75.99</td></tr><tr><td>101.45</td><td>-2.5</td><td>30.86</td><td>76.00</td><td>75.99</td></tr></table>						101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-5.6	-	-	-	107.40	-5.6	-	-	-	107.00	-5.4	-	-	-	106.95	-5.4	-	-	-	106.95	-5.4	-	-	-	106.90	-5.4	-	-	-	106.50	-5.3	-	-	-	106.45	-5.3	-	-	-	106.45	-5.3	-	-	-	106.40	-5.2	-	-	-	105.55	-5.0	-	-	-	105.50	-4.9	-	-	-	105.50	-4.9	-	-	-	105.45	-4.9	-	-	-	105.45	-4.9	-	-	-	105.40	-4.9	-	-	-	105.14	-4.8	-	-	-	105.09	-4.8	-	-	-	105.09	-4.8	-	-	-	105.05	-4.7	-	-	-	105.05	-4.7	-	-	-	105.00	-4.7	-	-	-	105.00	-4.7	-	-	-	104.95	-4.7	-	-	-	104.45	-4.5	-	-	-	104.40	-4.4	-	-	-	104.40	-4.4	-	-	-	104.35	-4.4	-	-	-	104.35	-4.4	-	-	-	104.31	-4.4	-	-	-	104.11	-4.3	-	-	-	104.07	-4.3	-	-	-	104.07	-4.3	-	-	-	104.01	-4.2	-	-	-	103.45	-3.9	-	-	-	103.40	-3.8	-	-	-	103.40	-3.8	-	-	-	103.35	-3.8	-	-	-	103.25	-3.8	-	-	-	103.20	-3.7	-	-	-	103.20	-3.7	-	-	-	103.15	-3.7	-	-	-	102.74	-3.4	-	-	-	102.69	-3.4	-	-	-	102.69	-3.4	-	-	-	102.64	-3.3	-	-	-	102.60	-3.3	-	-	-	102.55	-3.3	0.00	0.00	0.00	102.55	-3.3	0.00	0.00	0.00	102.50	-3.2	0.00	0.00	3.45	102.50	-3.2	1.07	3.45	3.45	102.45	-3.2	1.07	3.42	6.91	102.45	-3.2	2.16	6.91	6.91	102.40	-3.2	2.16	6.83	10.36	101.90	-2.8	16.07	44.91	44.91	101.85	-2.8	16.07	44.31	48.36	101.85	-2.8	17.54	48.36	48.36	101.80	-2.7	17.54	47.71	51.81	101.50	-2.5	29.02	72.54	72.54	101.45	-2.5	29.02	71.48	75.99	101.45	-2.5	30.86	76.00	75.99
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102.60	-3.3	-	-	-																																																																																																																																																																																																																																																																																																																																																
102.55	-3.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.55	-3.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.50	-3.2	0.00	0.00	3.45																																																																																																																																																																																																																																																																																																																																																
102.50	-3.2	1.07	3.45	3.45																																																																																																																																																																																																																																																																																																																																																
102.45	-3.2	1.07	3.42	6.91																																																																																																																																																																																																																																																																																																																																																
102.45	-3.2	2.16	6.91	6.91																																																																																																																																																																																																																																																																																																																																																
102.40	-3.2	2.16	6.83	10.36																																																																																																																																																																																																																																																																																																																																																
101.90	-2.8	16.07	44.91	44.91																																																																																																																																																																																																																																																																																																																																																
101.85	-2.8	16.07	44.31	48.36																																																																																																																																																																																																																																																																																																																																																
101.85	-2.8	17.54	48.36	48.36																																																																																																																																																																																																																																																																																																																																																
101.80	-2.7	17.54	47.71	51.81																																																																																																																																																																																																																																																																																																																																																
101.50	-2.5	29.02	72.54	72.54																																																																																																																																																																																																																																																																																																																																																
101.45	-2.5	29.02	71.48	75.99																																																																																																																																																																																																																																																																																																																																																
101.45	-2.5	30.86	76.00	75.99																																																																																																																																																																																																																																																																																																																																																
Schnitt: Anlage B2 Schnitt 2R				Seite Anlage B2/18																																																																																																																																																																																																																																																																																																																																																
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)				Archiv Nr.: 210624																																																																																																																																																																																																																																																																																																																																																
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																		

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

101.40	-2.4	30.86	74.87	79.45
100.50	-1.8	50.00	89.41	141.63
100.45	-1.8	50.00	87.71	145.08
100.45	-1.8	50.00	87.71	145.08
100.40	-1.7	50.00	86.03	148.53
99.50	-1.1	50.00	57.03	210.71
99.45	-1.1	50.00	55.48	214.17
99.45	-1.1	50.00	55.48	214.17
99.40	-1.1	50.00	53.94	217.62
98.50	-0.5	50.00	26.75	279.80
98.45	-0.5	50.00	25.25	283.25
98.45	-0.5	50.00	25.25	283.25
98.40	-0.5	50.00	23.76	286.71
98.15	-0.3	50.00	16.30	303.98
98.10	-0.3	50.00	14.80	307.43

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.03419457$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 9.35 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$
 $G_{k} = 176.93$ kN/m
 $G'_{k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 51.66$ kN/m ($E_{ah,k} = 284.98$ kN/m)
 $B_{v,k} = 100.13$
Summe $V_{k} = 128.46$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m

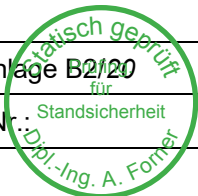
Einwirkungen
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 59.40 + 0.00 = 271.72$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 271.72 / 1039.87 = 0.26$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage B2 Schnitt 2R	Seite Anlage B2/19
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 2119
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 13_BS 2_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 3.00 4.57 1.57 1.73 1.65 0.86 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 4.57 107.45 107.45 107.45 102.96 101.01 nein 2 110.00 0.00 2.00 107.45 107.45 107.45 105.44 104.58 ja (Verkehrslasten werden nicht umgelagert) Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div>		
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/20
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																											
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																															
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																											
<div>Ausnutzungsgrad $\mu_e = 337.188 / 421.010 = 0.801$ Bettungslager $B_{h,d} = 337.188 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 421.010 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>N_d</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-228.22</td><td>-186.35</td><td>-96.28</td><td>-8.07</td><td>6.900E+4</td><td>2.100E+7</td><td>-257.87</td></tr></table> <div>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>N_d</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-5.1</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-5.4</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-5.4</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-5.8</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-6.1</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-6.4</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-6.7</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-7.1</td><td>0.0</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-7.4</td><td>0.1</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-7.7</td><td>0.1</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-8.1</td><td>0.1</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-8.4</td><td>0.1</td><td>-228.22</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 2\Rechtes Ufer\10_BS 2_LF1.1 (ohne Lasten).vrb eingelesen.</div> <table><tr><th>Anker/Steife</th><th>Tiefe</th><th>Vorverformung</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0044</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>28.432</td><td>71.296</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>71.296</td><td>71.296</td><td>0.00</td></tr><tr><td>106.950</td><td>106.450</td><td>71.296</td><td>71.296</td><td>0.00</td></tr><tr><td>106.450</td><td>105.500</td><td>71.296</td><td>71.296</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>71.296</td><td>71.296</td><td>0.50</td></tr><tr><td>105.450</td><td>105.439</td><td>71.296</td><td>71.296</td><td>0.61</td></tr><tr><td>105.439</td><td>105.090</td><td>71.296</td><td>53.915</td><td>0.61</td></tr></table>								Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-228.22	-186.35	-96.28	-8.07	6.900E+4	2.100E+7	-257.87	x	y	$w_{x,d}$	$w_{y,d}$	N_d	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-5.1	0.0	-228.22	0.00	0.00	-0.90	106.95	-5.4	0.0	-228.22	0.00	0.00	-0.90	106.95	-5.4	0.0	-228.22	0.00	0.00	-0.80	106.95	-5.8	0.0	-228.22	0.00	0.00	-0.70	106.95	-6.1	0.0	-228.22	0.00	0.00	-0.60	106.95	-6.4	0.0	-228.22	0.00	0.00	-0.50	106.95	-6.7	0.0	-228.22	0.00	0.00	-0.40	106.95	-7.1	0.0	-228.22	0.00	0.00	-0.30	106.95	-7.4	0.1	-228.22	0.00	0.00	-0.20	106.95	-7.7	0.1	-228.22	0.00	0.00	-0.10	106.95	-8.1	0.1	-228.22	0.00	0.00	0.00	106.95	-8.4	0.1	-228.22	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0044	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	28.432	71.296	0.00	107.448	106.950	71.296	71.296	0.00	106.950	106.450	71.296	71.296	0.00	106.450	105.500	71.296	71.296	0.00	105.500	105.450	71.296	71.296	0.50	105.450	105.439	71.296	71.296	0.61	105.439	105.090	71.296	53.915	0.61	Seite Anlage B2/21	
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<table><tr><td>105.090</td><td>105.000</td><td>61.169</td><td>55.414</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.737</td><td>50.675</td><td>33.886</td><td>5.00</td><td>5.00</td></tr><tr><td>104.737</td><td>104.578</td><td>33.886</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>104.578</td><td>104.450</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.066</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>104.066</td><td>103.400</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>103.202</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>103.202</td><td>102.955</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>102.955</td><td>102.690</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.550</td><td>23.693</td><td>23.693</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.401</td><td>39.554</td><td>39.891</td><td>5.00</td><td>5.00</td></tr><tr><td>102.401</td><td>101.857</td><td>39.891</td><td>41.123</td><td>5.00</td><td>5.00</td></tr><tr><td>101.857</td><td>101.411</td><td>41.123</td><td>42.132</td><td>5.00</td><td>5.00</td></tr><tr><td>101.411</td><td>101.015</td><td>42.132</td><td>43.029</td><td>5.00</td><td>5.00</td></tr><tr><td>101.015</td><td>100.412</td><td>43.029</td><td>45.503</td><td>5.00</td><td>5.00</td></tr><tr><td>100.412</td><td>99.406</td><td>45.503</td><td>49.628</td><td>5.00</td><td>5.00</td></tr><tr><td>99.406</td><td>98.400</td><td>49.628</td><td>53.752</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>53.752</td><td>54.989</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>54.989</td><td>129.223</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.40</td><td>0.00</td><td>-6.31</td></tr><tr><td>102.40</td><td>101.86</td><td>-6.31</td><td>-29.47</td></tr><tr><td>101.86</td><td>101.41</td><td>-29.47</td><td>-48.41</td></tr><tr><td>101.41</td><td>101.01</td><td>-48.41</td><td>-65.25</td></tr><tr><td>101.01</td><td>100.41</td><td>-65.25</td><td>-90.89</td></tr><tr><td>100.41</td><td>99.41</td><td>-90.89</td><td>-133.63</td></tr><tr><td>99.41</td><td>98.40</td><td>-133.63</td><td>-176.37</td></tr><tr><td>98.40</td><td>98.10</td><td>-176.37</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.2</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-27.0</td><td>-44.1</td><td>-11.0</td><td>-228.2</td></tr><tr><td>106.95</td><td>-27.0</td><td>184.1</td><td>-11.0</td><td></td></tr><tr><td>106.45</td><td>-53.9</td><td>139.9</td><td>70.0</td><td></td></tr><tr><td>105.50</td><td>-105.2</td><td>55.9</td><td>162.9</td><td></td></tr><tr><td>105.45</td><td>-107.9</td><td>51.4</td><td>165.6</td><td></td></tr><tr><td>105.44</td><td>-108.5</td><td>50.5</td><td>166.2</td><td></td></tr><tr><td>105.09</td><td>-125.9</td><td>22.6</td><td>178.7</td><td></td></tr><tr><td>105.00</td><td>-129.6</td><td>15.6</td><td>180.5</td><td></td></tr><tr><td>104.74</td><td>-138.9</td><td>0.6</td><td>182.5</td><td></td></tr><tr><td>104.58</td><td>-143.8</td><td>-5.8</td><td>182.0</td><td></td></tr><tr><td>104.45</td><td>-147.5</td><td>-10.1</td><td>181.0</td><td></td></tr><tr><td>104.07</td><td>-158.7</td><td>-22.8</td><td>174.7</td><td></td></tr><tr><td>103.40</td><td>-178.1</td><td>-45.0</td><td>152.1</td><td></td></tr><tr><td>103.20</td><td>-183.8</td><td>-51.6</td><td>142.5</td><td></td></tr><tr><td>102.96</td><td>-191.0</td><td>-59.8</td><td>128.8</td><td></td></tr><tr><td>102.69</td><td>-198.7</td><td>-68.6</td><td>111.8</td><td></td></tr><tr><td>102.55</td><td>-203.3</td><td>-73.2</td><td>101.9</td><td></td></tr><tr><td>102.40</td><td>-207.1</td><td>-80.3</td><td>90.4</td><td></td></tr></table>								105.090	105.000	61.169	55.414	4.10	5.00	105.000	104.737	50.675	33.886	5.00	5.00	104.737	104.578	33.886	23.693	5.00	5.00	104.578	104.450	23.693	23.693	5.00	5.00	104.450	104.066	23.693	23.693	5.00	5.00	104.066	103.400	23.693	23.693	5.00	5.00	103.400	103.202	23.693	23.693	5.00	5.00	103.202	102.955	23.693	23.693	5.00	5.00	102.955	102.690	23.693	23.693	5.00	5.00	102.690	102.550	23.693	23.693	5.00	5.00	102.550	102.401	39.554	39.891	5.00	5.00	102.401	101.857	39.891	41.123	5.00	5.00	101.857	101.411	41.123	42.132	5.00	5.00	101.411	101.015	42.132	43.029	5.00	5.00	101.015	100.412	43.029	45.503	5.00	5.00	100.412	99.406	45.503	49.628	5.00	5.00	99.406	98.400	49.628	53.752	5.00	5.00	98.400	98.099	53.752	54.989	5.00	5.00	98.099	80.000	54.989	129.223	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.40	0.00	-6.31	102.40	101.86	-6.31	-29.47	101.86	101.41	-29.47	-48.41	101.41	101.01	-48.41	-65.25	101.01	100.41	-65.25	-90.89	100.41	99.41	-90.89	-133.63	99.41	98.40	-133.63	-176.37	98.40	98.10	-176.37	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.2	0.0		106.95	-27.0	-44.1	-11.0	-228.2	106.95	-27.0	184.1	-11.0		106.45	-53.9	139.9	70.0		105.50	-105.2	55.9	162.9		105.45	-107.9	51.4	165.6		105.44	-108.5	50.5	166.2		105.09	-125.9	22.6	178.7		105.00	-129.6	15.6	180.5		104.74	-138.9	0.6	182.5		104.58	-143.8	-5.8	182.0		104.45	-147.5	-10.1	181.0		104.07	-158.7	-22.8	174.7		103.40	-178.1	-45.0	152.1		103.20	-183.8	-51.6	142.5		102.96	-191.0	-59.8	128.8		102.69	-198.7	-68.6	111.8		102.55	-203.3	-73.2	101.9		102.40	-207.1	-80.3	90.4	
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105.50	-105.2	55.9	162.9																																																																																																																																																																																																																																																																																																																					
105.45	-107.9	51.4	165.6																																																																																																																																																																																																																																																																																																																					
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div><div>101.86</div><div>-212.1</div><div>-91.5</div><div>42.6</div></div><div><div>101.41</div><div>-209.1</div><div>-83.6</div><div>3.0</div></div><div><div>101.01</div><div>-201.2</div><div>-63.6</div><div>-26.5</div></div><div><div>100.41</div><div>-180.8</div><div>-13.5</div><div>-50.4</div></div><div><div>99.41</div><div>-159.6</div><div>34.5</div><div>-34.3</div></div><div><div>98.40</div><div>-162.2</div><div>17.5</div><div>-2.8</div></div><div><div>98.10</div><div>-167.5</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen 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<tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage B2 Schnitt 2R</td><td colspan="2">Seite Anlage B2/23</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">4 LF 2.2 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage B2 Schnitt 2R		Seite Anlage B2/23		Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																															
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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.44</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.44</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.39</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.63</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.58</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.58</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.54</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr></tbody></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	0.0	-0.1	0.0		106.95	-7.8	-21.4	-5.3	-90.1	106.95	-7.8	68.7	-5.3		106.45	-15.6	47.3	23.7		105.50	-30.4	6.5	49.2		105.45	-31.2	4.4	49.5		105.44	-31.4	3.9	49.5		105.09	-35.7	-8.0	48.6		105.00	-36.4	-10.7	47.8		104.74	-37.7	-15.6	44.3		104.58	-38.0	-16.4	41.7		104.45	-38.0	-16.4	39.6		104.07	-38.0	-16.4	33.3		103.40	-38.0	-16.4	22.4		103.20	-38.0	-16.4	19.1		102.96	-38.0	-16.4	15.1		102.69	-38.0	-16.4	10.8		102.55	-38.0	-16.4	8.5		102.40	-37.9	-16.3	6.0		101.86	-37.1	-14.1	-2.4		101.41	-35.6	-10.4	-7.9		101.01	-33.8	-6.0	-11.2		100.41	-30.8	1.7	-12.5		99.41	-28.4	7.7	-6.9		98.40	-30.2	3.3	-0.5		98.10	-31.4	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-7.2	-	-	-	107.45	-7.2	-	-	-	107.45	-7.2	-	-	-	107.40	-7.2	-	-	-	107.00	-7.1	-	-	-	106.95	-7.1	-	-	-	106.95	-7.1	-	-	-	106.90	-7.1	-	-	-	106.50	-7.1	-	-	-	106.45	-7.0	-	-	-	106.45	-7.0	-	-	-	106.38	-7.0	-	-	-	105.55	-6.8	-	-	-	105.50	-6.8	-	-	-	105.50	-6.8	-	-	-	105.45	-6.8	-	-	-	105.45	-6.8	-	-	-	105.44	-6.8	-	-	-	105.44	-6.8	-	-	-	105.39	-6.8	-	-	-	105.14	-6.7	-	-	-	105.09	-6.6	-	-	-	105.09	-6.6	-	-	-	105.05	-6.6	-	-	-	105.05	-6.6	-	-	-	105.00	-6.6	-	-	-	105.00	-6.6	-	-	-	104.95	-6.6	-	-	-	104.79	-6.5	-	-	-	104.74	-6.5	-	-	-	104.74	-6.5	-	-	-	104.68	-6.4	-	-	-	104.63	-6.4	-	-	-	104.58	-6.4	-	-	-	104.58	-6.4	-	-	-	104.54	-6.4	-	-	-
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig				-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024
<div> <div> <div>104.49</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div>104.45</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.45</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.40</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.11</div> <div>-6.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.07</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.07</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.01</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.45</div> <div>-5.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-5.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-5.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.35</div> <div>-5.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.25</div> <div>-5.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.20</div> <div>-5.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.20</div> <div>-5.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-5.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.00</div> <div>-5.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.96</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.96</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.74</div> <div>-4.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.69</div> <div>-4.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.69</div> <div>-4.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> 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<div>43.87</div> <div>47.88</div> </div> <div> <div>101.86</div> <div>-4.0</div> <div>12.04</div> <div>47.88</div> <div>47.88</div> </div> <div> <div>101.81</div> <div>-3.9</div> <div>12.04</div> <div>47.23</div> <div>51.30</div> </div> <div> <div>101.46</div> <div>-3.5</div> <div>21.25</div> <div>75.25</div> <div>75.24</div> </div> <div> <div>101.41</div> <div>-3.5</div> <div>21.25</div> <div>74.08</div> <div>78.66</div> </div> <div> <div>101.41</div> <div>-3.5</div> <div>22.57</div> <div>78.67</div> <div>78.66</div> </div> <div> <div>101.36</div> <div>-3.4</div> <div>22.57</div> <div>77.42</div> <div>82.08</div> </div> <div> <div>101.06</div> <div>-3.1</div> <div>33.10</div> <div>102.61</div> <div>102.60</div> </div> <div> <div>101.01</div> <div>-3.0</div> <div>33.10</div> <div>100.80</div> <div>106.02</div> </div> <div> <div>101.01</div> <div>-3.0</div> <div>34.81</div> <div>106.03</div> <div>106.02</div> </div> <div> <div>100.96</div> <div>-3.0</div> <div>34.81</div> <div>104.10</div> <div>109.50</div> </div> <div> <div>100.46</div> <div>-2.4</div> <div>50.00</div> <div>122.12</div> <div>144.22</div> </div> <div> <div>100.41</div> <div>-2.4</div> <div>50.00</div> <div>119.43</div> <div>147.69</div> </div> <div> <div>100.41</div> <div>-2.4</div> <div>50.00</div> <div>119.43</div> <div>147.69</div> </div> <div> <div>100.36</div> <div>-2.3</div> <div>50.00</div> <div>116.74</div> <div>151.17</div> </div> <div> <div>99.46</div> <div>-1.4</div> <div>50.00</div> <div>69.94</div> <div>213.67</div> </div> <div> <div>99.41</div> <div>-1.3</div> <div>50.00</div> <div>67.41</div> <div>217.14</div> </div> <div> <div>99.41</div> <div>-1.3</div> <div>50.00</div> <div>67.41</div> <div>217.14</div> </div> <div> <div>99.36</div> <div>-1.3</div> <div>50.00</div> <div>64.89</div> <div>220.62</div> </div> <div> <div>98.45</div> <div>-0.4</div> <div>50.00</div> <div>20.25</div> <div>283.12</div> </div> <div> <div>98.40</div> <div>-0.4</div> <div>50.00</div> <div>17.79</div> <div>286.60</div> </div> <div> <div>98.40</div> <div>-0.4</div> <div>50.00</div> <div>17.79</div> <div>286.60</div> </div> <div> <div>98.35</div> <div>-0.3</div> <div>50.00</div> <div>15.33</div> <div>290.07</div> </div> <div> <div>98.15</div> <div>-0.1</div> <div>50.00</div> <div>5.49</div> <div>303.96</div> </div> <div> <div>98.10</div> <div>-0.1</div> <div>50.00</div> <div>3.03</div> <div>307.43</div> </div>				
<p>Verdrehung (Theoretischer Fußpunkt) [°]</p> <p>$\phi_{i,[g+q],k}$: -0.05604532</p> <p>Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe t_g = 4.45 m</p> <p>Profillänge = 9.35 m</p>				
Schnitt: Anlage B2 Schnitt 2R				Seite Anlage B2/25
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)				Archiv Nr.:
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$ $G_{i,k} = 176.93 \text{ kN/m}$ $G'_{i,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 78.92 \text{ kN/m}$ ($E_{ah,k} = 440.46 \text{ kN/m}$) $B_{v,k} = 115.22$ Summe $V_{i,k} = 140.63 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m $\implies R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 93.60 + 0.00 = 305.92 \text{ kN/m}$ $\implies \mu = V_{i,d} / R_{d} = 305.92 / 1039.87 = 0.29$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/26								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 26								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Statisch geprüft

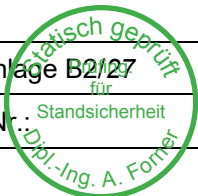
für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 14_BS 2_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 109.02 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 109.02 109.02 109.01 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 110.00 0.00 2.00 109.02 109.02 109.02 106.96 106.06 ja</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -31.20 0.00 0.00 0.00 48.70 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.92 m</div>		
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/27
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 47.779 / 154.955 = 0.308$
Bettungslager $B_{h,d} = 47.779 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 154.955 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-610.10	-497.32	-256.40	-50.55	3.900E+7	2.100E+7	-688.29

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-4.7	0.0	-610.59	0.00	0.00
-7.47	103.72	-4.7	0.0	-610.59	0.00	0.00
-7.47	103.72	-4.7	0.0	-610.59	0.00	0.00
-6.64	103.72	-4.7	0.0	-610.59	0.00	0.00
-5.81	103.72	-4.8	0.0	-610.59	0.00	0.00
-4.98	103.72	-4.8	0.0	-610.59	0.00	0.00
-4.15	103.72	-4.8	0.1	-610.59	0.00	0.00
-3.32	103.72	-4.8	0.1	-610.59	0.00	0.00
-2.49	103.72	-4.8	0.1	-610.59	0.00	0.00
-1.66	103.72	-4.8	0.1	-610.59	0.00	0.00
-0.83	103.72	-4.8	0.1	-610.59	0.00	0.00
0.00	103.72	-4.8	0.1	-610.59	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0041

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
109.020	109.018	0.000	39.614	0.00
109.018	109.014	39.614	46.806	0.00
109.014	108.020	46.806	54.166	0.00
108.020	107.450	54.166	58.386	0.00

Schnitt:	Anlage B2	Schnitt 2R	Seite Anlage B2/28
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>107.450</td><td>107.020</td><td>58.386</td><td>61.570</td><td>0.00</td><td>0.00</td></tr><tr><td>107.020</td><td>106.964</td><td>61.570</td><td>61.987</td><td>0.00</td><td>0.00</td></tr><tr><td>106.964</td><td>106.057</td><td>61.987</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>106.057</td><td>106.020</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>106.020</td><td>105.500</td><td>26.109</td><td>29.959</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.090</td><td>29.959</td><td>31.556</td><td>0.00</td><td>4.10</td></tr><tr><td>105.090</td><td>104.970</td><td>38.874</td><td>39.385</td><td>4.10</td><td>5.30</td></tr><tr><td>104.970</td><td>103.970</td><td>39.385</td><td>43.640</td><td>5.30</td><td>15.30</td></tr><tr><td>103.970</td><td>103.720</td><td>43.640</td><td>44.704</td><td>15.30</td><td>17.80</td></tr><tr><td>103.720</td><td>102.973</td><td>44.704</td><td>47.883</td><td>17.80</td><td>25.27</td></tr><tr><td>102.973</td><td>102.690</td><td>47.883</td><td>49.086</td><td>25.27</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>36.158</td><td>36.732</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>102.000</td><td>36.732</td><td>38.989</td><td>0.00</td><td>0.00</td></tr><tr><td>102.000</td><td>101.000</td><td>38.989</td><td>43.092</td><td>0.00</td><td>0.00</td></tr><tr><td>101.000</td><td>99.999</td><td>43.092</td><td>47.194</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>98.999</td><td>47.194</td><td>51.297</td><td>0.00</td><td>0.00</td></tr><tr><td>98.999</td><td>98.099</td><td>51.297</td><td>54.989</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>54.989</td><td>129.223</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>109.02</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.00</td><td>0.00</td><td>-23.38</td></tr><tr><td>102.00</td><td>101.00</td><td>-23.38</td><td>-65.90</td></tr><tr><td>101.00</td><td>100.00</td><td>-65.90</td><td>-108.41</td></tr><tr><td>100.00</td><td>99.00</td><td>-108.41</td><td>-150.93</td></tr><tr><td>99.00</td><td>98.10</td><td>-150.93</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.02</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.2</td><td>-0.3</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-45.2</td><td>-64.4</td><td>-31.4</td><td></td></tr><tr><td>107.45</td><td>-72.4</td><td>-104.9</td><td>-79.5</td><td></td></tr><tr><td>107.45</td><td>-130.8</td><td>-104.9</td><td>-117.0</td><td></td></tr><tr><td>107.02</td><td>-152.0</td><td>-137.3</td><td>-169.0</td><td></td></tr><tr><td>106.96</td><td>-154.8</td><td>-141.7</td><td>-176.9</td><td></td></tr><tr><td>106.06</td><td>-192.3</td><td>-190.4</td><td>-330.8</td><td></td></tr><tr><td>106.02</td><td>-193.5</td><td>-191.5</td><td>-337.8</td><td></td></tr><tr><td>105.50</td><td>-210.9</td><td>-208.3</td><td>-441.6</td><td></td></tr><tr><td>105.09</td><td>-225.1</td><td>-223.8</td><td>-530.1</td><td></td></tr><tr><td>104.97</td><td>-229.2</td><td>-229.9</td><td>-557.3</td><td></td></tr><tr><td>103.97</td><td>-263.7</td><td>-290.0</td><td>-815.9</td><td></td></tr><tr><td>103.72</td><td>-272.6</td><td>-307.6</td><td>-890.5</td><td>-610.6</td></tr><tr><td>103.72</td><td>-272.6</td><td>303.0</td><td>-890.5</td><td></td></tr><tr><td>102.97</td><td>-299.5</td><td>243.9</td><td>-685.7</td><td></td></tr><tr><td>102.69</td><td>-309.9</td><td>219.0</td><td>-620.2</td><td></td></tr><tr><td>102.55</td><td>-315.2</td><td>208.3</td><td>-590.2</td><td></td></tr><tr><td>102.00</td><td>-324.1</td><td>194.2</td><td>-480.4</td><td></td></tr><tr><td>101.00</td><td>-332.7</td><td>179.9</td><td>-290.2</td><td></td></tr><tr><td>100.00</td><td>-352.5</td><td>132.4</td><td>-132.0</td><td></td></tr><tr><td>99.00</td><td>-374.0</td><td>67.5</td><td>-31.0</td><td></td></tr><tr><td>98.10</td><td>-389.4</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	107.020	58.386	61.570	0.00	0.00	107.020	106.964	61.570	61.987	0.00	0.00	106.964	106.057	61.987	25.836	0.00	0.00	106.057	106.020	25.836	26.109	0.00	0.00	106.020	105.500	26.109	29.959	0.00	0.00	105.500	105.090	29.959	31.556	0.00	4.10	105.090	104.970	38.874	39.385	4.10	5.30	104.970	103.970	39.385	43.640	5.30	15.30	103.970	103.720	43.640	44.704	15.30	17.80	103.720	102.973	44.704	47.883	17.80	25.27	102.973	102.690	47.883	49.086	25.27	28.10	102.690	102.550	36.158	36.732	28.10	29.50	102.550	102.000	36.732	38.989	0.00	0.00	102.000	101.000	38.989	43.092	0.00	0.00	101.000	99.999	43.092	47.194	0.00	0.00	99.999	98.999	47.194	51.297	0.00	0.00	98.999	98.099	51.297	54.989	0.00	0.00	98.099	80.000	54.989	129.223	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	109.02	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.00	0.00	-23.38	102.00	101.00	-23.38	-65.90	101.00	100.00	-65.90	-108.41	100.00	99.00	-108.41	-150.93	99.00	98.10	-150.93	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	109.02	0.0	0.0	0.0		109.02	-0.1	-0.1	0.0		109.01	-0.2	-0.3	0.0		108.02	-45.2	-64.4	-31.4		107.45	-72.4	-104.9	-79.5		107.45	-130.8	-104.9	-117.0		107.02	-152.0	-137.3	-169.0		106.96	-154.8	-141.7	-176.9		106.06	-192.3	-190.4	-330.8		106.02	-193.5	-191.5	-337.8		105.50	-210.9	-208.3	-441.6		105.09	-225.1	-223.8	-530.1		104.97	-229.2	-229.9	-557.3		103.97	-263.7	-290.0	-815.9		103.72	-272.6	-307.6	-890.5	-610.6	103.72	-272.6	303.0	-890.5		102.97	-299.5	243.9	-685.7		102.69	-309.9	219.0	-620.2		102.55	-315.2	208.3	-590.2		102.00	-324.1	194.2	-480.4		101.00	-332.7	179.9	-290.2		100.00	-352.5	132.4	-132.0		99.00	-374.0	67.5	-31.0		98.10	-389.4	0.0	0.0	
107.450	107.020	58.386	61.570	0.00	0.00																																																																																																																																																																																																																																																																																																																					
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103.970	103.720	43.640	44.704	15.30	17.80																																																																																																																																																																																																																																																																																																																					
103.720	102.973	44.704	47.883	17.80	25.27																																																																																																																																																																																																																																																																																																																					
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102.550	102.000	36.732	38.989	0.00	0.00																																																																																																																																																																																																																																																																																																																					
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101.000	99.999	43.092	47.194	0.00	0.00																																																																																																																																																																																																																																																																																																																					
99.999	98.999	47.194	51.297	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.999	98.099	51.297	54.989	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.099	80.000	54.989	129.223	0.00	0.00																																																																																																																																																																																																																																																																																																																					
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106.96	-154.8	-141.7	-176.9																																																																																																																																																																																																																																																																																																																							
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102.55	-315.2	208.3	-590.2																																																																																																																																																																																																																																																																																																																							
102.00	-324.1	194.2	-480.4																																																																																																																																																																																																																																																																																																																							
101.00	-332.7	179.9	-290.2																																																																																																																																																																																																																																																																																																																							
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99.00	-374.0	67.5	-31.0																																																																																																																																																																																																																																																																																																																							
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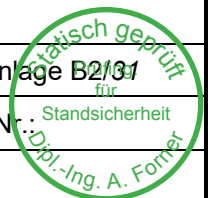


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107.45	-59.7	-82.5	-62.3																																																																																																																																																																																																																																																																																																																																																																																																					
107.45	-108.4	-82.5	-93.5																																																																																																																																																																																																																																																																																																																																																																																																					
107.02	-126.0	-108.3	-134.4																																																																																																																																																																																																																																																																																																																																																																																																					
106.96	-128.3	-111.7	-140.7																																																																																																																																																																																																																																																																																																																																																																																																					
106.06	-160.0	-151.6	-262.5																																																																																																																																																																																																																																																																																																																																																																																																					
106.02	-161.0	-152.5	-268.1																																																																																																																																																																																																																																																																																																																																																																																																					
105.50	-176.2	-167.1	-351.1																																																																																																																																																																																																																																																																																																																																																																																																					
105.09	-188.5	-180.5	-422.3																																																																																																																																																																																																																																																																																																																																																																																																					
104.97	-192.0	-185.8	-444.3																																																																																																																																																																																																																																																																																																																																																																																																					
103.97	-222.1	-237.6	-654.8																																																																																																																																																																																																																																																																																																																																																																																																					
103.72	-229.8	-252.8	-716.1	-497.3																																																																																																																																																																																																																																																																																																																																																																																																				
103.72	-229.8	244.5	-716.1																																																																																																																																																																																																																																																																																																																																																																																																					
102.97	-253.2	193.8	-551.8																																																																																																																																																																																																																																																																																																																																																																																																					
102.69	-262.2	172.6	-500.0																																																																																																																																																																																																																																																																																																																																																																																																					
102.55	-266.9	163.5	-476.4																																																																																																																																																																																																																																																																																																																																																																																																					
102.00	-274.3	151.9	-390.6																																																																																																																																																																																																																																																																																																																																																																																																					
101.00	-279.6	145.3	-239.3																																																																																																																																																																																																																																																																																																																																																																																																					
100.00	-294.9	109.3	-110.2																																																																																																																																																																																																																																																																																																																																																																																																					
99.00	-312.4	56.7	-26.1																																																																																																																																																																																																																																																																																																																																																																																																					
98.10	-325.9	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																					
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108.02	-21.7	-7.6	-3.2																																																																																																																																																																																																																																																																																																																																																																																																					
107.45	-35.3	-15.2	-9.6																																																																																																																																																																																																																																																																																																																																																																																																					
107.45	-84.0	-15.2	-40.8																																																																																																																																																																																																																																																																																																																																																																																																					
107.02	-94.8	-22.6	-48.8																																																																																																																																																																																																																																																																																																																																																																																																					
106.96	-96.2	-23.7	-50.1																																																																																																																																																																																																																																																																																																																																																																																																					
106.06	-120.8	-44.0	-80.4																																																																																																																																																																																																																																																																																																																																																																																																					
106.02	-121.9	-45.0	-82.0																																																																																																																																																																																																																																																																																																																																																																																																					
105.50	-137.0	-59.6	-109.1																																																																																																																																																																																																																																																																																																																																																																																																					
105.09	-149.4	-73.0	-136.2																																																																																																																																																																																																																																																																																																																																																																																																					
104.97	-152.9	-78.3	-145.3																																																																																																																																																																																																																																																																																																																																																																																																					
103.97	-182.9	-130.1	-248.3																																																																																																																																																																																																																																																																																																																																																																																																					
103.72	-190.6	-145.3	-282.7	-256.4																																																																																																																																																																																																																																																																																																																																																																																																				
103.72	-190.6	111.1	-282.7																																																																																																																																																																																																																																																																																																																																																																																																					
102.97	-214.0	60.5	-218.1																																																																																																																																																																																																																																																																																																																																																																																																					
102.69	-223.1	39.2	-204.0																																																																																																																																																																																																																																																																																																																																																																																																					
102.55	-227.7	30.1	-199.1																																																																																																																																																																																																																																																																																																																																																																																																					
102.00	-232.8	24.4	-185.7																																																																																																																																																																																																																																																																																																																																																																																																					
101.00	-220.8	61.1	-141.0																																																																																																																																																																																																																																																																																																																																																																																																					
100.00	-220.3	65.0	-75.3																																																																																																																																																																																																																																																																																																																																																																																																					
99.00	-229.0	41.4	-20.0																																																																																																																																																																																																																																																																																																																																																																																																					
98.10	-243.4	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																					
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108.02	-15.6	-42.8	-21.4																																																																																																																																																																																																																																																																																																																																																																																																					
107.45	-24.5	-67.2	-52.7																																																																																																																																																																																																																																																																																																																																																																																																					
107.02	-31.2	-85.7	-85.6																																																																																																																																																																																																																																																																																																																																																																																																					
106.96	-32.1	-88.1	-90.5																																																																																																																																																																																																																																																																																																																																																																																																					
106.06	-39.2	-107.5	-182.1																																																																																																																																																																																																																																																																																																																																																																																																					
106.02	-39.2	-107.5	-186.1																																																																																																																																																																																																																																																																																																																																																																																																					
105.50	-39.2	-107.5	-242.0																																																																																																																																																																																																																																																																																																																																																																																																					
105.09	-39.2	-107.5	-286.1																																																																																																																																																																																																																																																																																																																																																																																																					
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																									
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<table><tr><td>104.97</td><td>-39.2</td><td>-107.5</td><td>-299.0</td><td></td><td></td></tr><tr><td>103.97</td><td>-39.2</td><td>-107.5</td><td>-406.5</td><td></td><td></td></tr><tr><td>103.72</td><td>-39.2</td><td>-107.5</td><td>-433.4</td><td>-250.5</td><td></td></tr><tr><td>103.72</td><td>-39.2</td><td>133.4</td><td>-433.4</td><td></td><td></td></tr><tr><td>102.97</td><td>-39.2</td><td>133.4</td><td>-333.7</td><td></td><td></td></tr><tr><td>102.69</td><td>-39.2</td><td>133.4</td><td>-296.0</td><td></td><td></td></tr><tr><td>102.55</td><td>-39.2</td><td>133.4</td><td>-277.3</td><td></td><td></td></tr><tr><td>102.00</td><td>-41.5</td><td>127.5</td><td>-204.9</td><td></td><td></td></tr><tr><td>101.00</td><td>-58.7</td><td>84.1</td><td>-98.3</td><td></td><td></td></tr><tr><td>100.00</td><td>-74.6</td><td>44.3</td><td>-34.8</td><td></td><td></td></tr><tr><td>99.00</td><td>-83.4</td><td>15.3</td><td>-6.1</td><td></td><td></td></tr><tr><td>98.10</td><td>-82.5</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td><td></td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td><td></td></tr><tr><td>109.02</td><td>-27.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>109.02</td><td>-27.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>109.02</td><td>-27.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>109.01</td><td>-27.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>109.01</td><td>-27.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.96</td><td>-27.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.07</td><td>-22.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.02</td><td>-22.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.02</td><td>-22.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.97</td><td>-22.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.52</td><td>-19.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.45</td><td>-19.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.45</td><td>-19.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.40</td><td>-19.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.07</td><td>-17.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.02</td><td>-17.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.02</td><td>-17.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.96</td><td>-17.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.96</td><td>-17.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.91</td><td>-16.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.11</td><td>-13.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.06</td><td>-12.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.06</td><td>-12.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.02</td><td>-12.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.02</td><td>-12.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.97</td><td>-12.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.52</td><td>-10.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-10.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-10.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.14</td><td>-9.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.09</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.09</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.02</td><td>-8.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.02</td><td>-8.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.97</td><td>-8.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.97</td><td>-8.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.92</td><td>-8.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.02</td><td>-5.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.97</td><td>-4.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.97</td><td>-4.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.92</td><td>-4.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.77</td><td>-4.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.72</td><td>-4.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.72</td><td>-4.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.67</td><td>-4.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.02</td><td>-2.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.97</td><td>-2.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.97</td><td>-2.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.93</td><td>-2.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.74</td><td>-2.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.69</td><td>-2.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.69</td><td>-2.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.64</td><td>-2.0</td><td>-</td><td>-</td><td>-</td><td></td></tr></table>						104.97	-39.2	-107.5	-299.0			103.97	-39.2	-107.5	-406.5			103.72	-39.2	-107.5	-433.4	-250.5		103.72	-39.2	133.4	-433.4			102.97	-39.2	133.4	-333.7			102.69	-39.2	133.4	-296.0			102.55	-39.2	133.4	-277.3			102.00	-41.5	127.5	-204.9			101.00	-58.7	84.1	-98.3			100.00	-74.6	44.3	-34.8			99.00	-83.4	15.3	-6.1			98.10	-82.5	0.0	0.0			Tiefe	w	ks	sig,Bh,k	eph,k		[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]		109.02	-27.2	-	-	-		109.02	-27.2	-	-	-		109.02	-27.2	-	-	-		109.01	-27.2	-	-	-		109.01	-27.2	-	-	-		108.96	-27.0	-	-	-		108.07	-22.5	-	-	-		108.02	-22.3	-	-	-		108.02	-22.3	-	-	-		107.97	-22.0	-	-	-		107.52	-19.8	-	-	-		107.45	-19.5	-	-	-		107.45	-19.5	-	-	-		107.40	-19.2	-	-	-		107.07	-17.6	-	-	-		107.02	-17.4	-	-	-		107.02	-17.4	-	-	-		106.96	-17.1	-	-	-		106.96	-17.1	-	-	-		106.91	-16.9	-	-	-		106.11	-13.1	-	-	-		106.06	-12.9	-	-	-		106.06	-12.9	-	-	-		106.02	-12.7	-	-	-		106.02	-12.7	-	-	-		105.97	-12.5	-	-	-		105.52	-10.5	-	-	-		105.50	-10.5	-	-	-		105.50	-10.5	-	-	-		105.45	-10.2	-	-	-		105.14	-9.0	-	-	-		105.09	-8.8	-	-	-		105.09	-8.8	-	-	-		105.02	-8.5	-	-	-		105.02	-8.5	-	-	-		104.97	-8.3	-	-	-		104.97	-8.3	-	-	-		104.92	-8.1	-	-	-		104.02	-5.0	-	-	-		103.97	-4.9	-	-	-		103.97	-4.9	-	-	-		103.92	-4.8	-	-	-		103.77	-4.3	-	-	-		103.72	-4.2	-	-	-		103.72	-4.2	-	-	-		103.67	-4.1	-	-	-		103.02	-2.6	-	-	-		102.97	-2.5	-	-	-		102.97	-2.5	-	-	-		102.93	-2.5	-	-	-		102.74	-2.1	-	-	-		102.69	-2.1	-	-	-		102.69	-2.1	-	-	-		102.64	-2.0	-	-	-	
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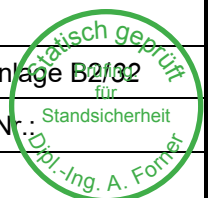
statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																						
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																						
<div><table><tr><td>102.60</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-1.8</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.05</td><td>-1.2</td><td>28.41</td><td>34.54</td><td>34.54</td></tr><tr><td>102.00</td><td>-1.2</td><td>28.41</td><td>33.01</td><td>38.00</td></tr><tr><td>102.00</td><td>-1.2</td><td>32.70</td><td>38.00</td><td>38.00</td></tr><tr><td>101.95</td><td>-1.1</td><td>32.70</td><td>36.29</td><td>41.45</td></tr><tr><td>101.05</td><td>-0.4</td><td>50.00</td><td>20.80</td><td>103.63</td></tr><tr><td>101.00</td><td>-0.4</td><td>50.00</td><td>19.46</td><td>107.08</td></tr><tr><td>101.00</td><td>-0.4</td><td>50.00</td><td>19.46</td><td>107.08</td></tr><tr><td>100.95</td><td>-0.4</td><td>50.00</td><td>18.17</td><td>110.54</td></tr><tr><td>100.05</td><td>0.0</td><td>50.00</td><td>1.92</td><td>172.71</td></tr><tr><td>100.00</td><td>0.0</td><td>50.00</td><td>1.32</td><td>176.17</td></tr><tr><td>100.00</td><td>0.0</td><td>50.00</td><td>1.32</td><td>176.17</td></tr><tr><td>99.95</td><td>0.0</td><td>50.00</td><td>0.74</td><td>179.62</td></tr><tr><td>99.05</td><td>0.1</td><td>50.00</td><td>-6.82</td><td>241.80</td></tr><tr><td>99.00</td><td>0.1</td><td>50.00</td><td>-7.14</td><td>245.25</td></tr><tr><td>99.00</td><td>0.1</td><td>50.00</td><td>-7.14</td><td>245.25</td></tr><tr><td>98.95</td><td>0.1</td><td>50.00</td><td>-7.45</td><td>248.71</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-12.11</td><td>303.98</td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-12.40</td><td>307.43</td></tr></table><p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.00649931 Theoretischer Fußpunkt = 98.099 m</p><p>Einbindetiefe tg = 4.45 m Profillänge = 10.92 m</p><p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 206.64 kN/m G',k = 0.00 kN/m Pv,k = 48.70 kN/m Eav,k = 88.46 kN/m (Eah,k = 494.50 kN/m) Bv,k = 21.05 Summe V,k = 322.74 kN/m (Druck)</p><p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p><p>Mantelreibung</p><table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table><p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p><p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 247.97 - 0.00 + 104.66 + 58.44 = 411.07 kN/m ==> µ = V,d / Rd = 411.07 / 1039.87 = 0.40</p><p>Horizontaler Wasserdruck herkömmlich bestimmt.</p></div>			102.60	-1.9	-	-	-	102.55	-1.9	0.00	0.00	0.00	102.55	-1.9	0.00	0.00	0.00	102.50	-1.8	0.00	0.00	3.45	102.05	-1.2	28.41	34.54	34.54	102.00	-1.2	28.41	33.01	38.00	102.00	-1.2	32.70	38.00	38.00	101.95	-1.1	32.70	36.29	41.45	101.05	-0.4	50.00	20.80	103.63	101.00	-0.4	50.00	19.46	107.08	101.00	-0.4	50.00	19.46	107.08	100.95	-0.4	50.00	18.17	110.54	100.05	0.0	50.00	1.92	172.71	100.00	0.0	50.00	1.32	176.17	100.00	0.0	50.00	1.32	176.17	99.95	0.0	50.00	0.74	179.62	99.05	0.1	50.00	-6.82	241.80	99.00	0.1	50.00	-7.14	245.25	99.00	0.1	50.00	-7.14	245.25	98.95	0.1	50.00	-7.45	248.71	98.15	0.2	50.00	-12.11	303.98	98.10	0.2	50.00	-12.40	307.43	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.10	55.00	s3: Flusskies, -sand
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 15_BS 2_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 109.02 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 109.02 109.02 109.01 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -31.20 0.00 0.00 0.00 48.70 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.92 m</div>		
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/33
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 222.181 / 422.273 = 0.526$
Bettungslager $B_{h,d} = 222.181 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 422.273 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-301.60	-234.14	-234.14	-50.52	3.900E+7	2.100E+7	-298.53 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-5.2	0.0	-302.32	0.00	0.00
-7.47	103.72	-5.2	0.0	-302.32	0.00	0.00
-7.47	103.72	-5.2	0.0	-302.32	0.00	0.00
-6.64	103.72	-5.2	0.0	-302.32	0.00	0.00
-5.81	103.72	-5.2	0.0	-302.32	0.00	0.00
-4.98	103.72	-5.3	0.0	-302.32	0.00	0.00
-4.15	103.72	-5.3	0.0	-302.32	0.00	0.00
-3.32	103.72	-5.3	0.1	-302.32	0.00	0.00
-2.49	103.72	-5.3	0.1	-302.32	0.00	0.00
-1.66	103.72	-5.3	0.1	-302.32	0.00	0.00
-0.83	103.72	-5.3	0.1	-302.32	0.00	0.00
0.00	103.72	-5.3	0.1	-302.32	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0041

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
109.020	109.014	0.000	1.992	0.00
109.014	108.020	1.992	9.352	0.00
108.020	107.450	9.352	13.573	0.00
107.450	107.020	13.573	16.756	0.00

Schnitt:	Anlage B2	Schnitt 2R	Seite Anlage B2/04
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
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<table><tr><td>107.020</td><td>105.970</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.970</td><td>105.500</td><td>24.530</td><td>28.010</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.090</td><td>28.010</td><td>29.608</td><td>0.00</td><td>4.10</td></tr><tr><td>105.090</td><td>104.970</td><td>36.371</td><td>36.882</td><td>4.10</td><td>5.30</td></tr><tr><td>104.970</td><td>103.970</td><td>36.882</td><td>41.137</td><td>5.30</td><td>15.30</td></tr><tr><td>103.970</td><td>103.720</td><td>41.137</td><td>42.201</td><td>15.30</td><td>17.80</td></tr><tr><td>103.720</td><td>102.973</td><td>42.201</td><td>45.380</td><td>17.80</td><td>25.27</td></tr><tr><td>102.973</td><td>102.690</td><td>45.380</td><td>46.583</td><td>25.27</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>34.375</td><td>34.949</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>102.000</td><td>34.949</td><td>37.206</td><td>0.00</td><td>0.00</td></tr><tr><td>102.000</td><td>101.000</td><td>37.206</td><td>41.308</td><td>0.00</td><td>0.00</td></tr><tr><td>101.000</td><td>99.999</td><td>41.308</td><td>45.411</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>98.999</td><td>45.411</td><td>49.514</td><td>0.00</td><td>0.00</td></tr><tr><td>98.999</td><td>98.099</td><td>49.514</td><td>53.206</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>53.206</td><td>127.440</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>109.02</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.00</td><td>-11.33</td><td>-33.04</td></tr><tr><td>102.00</td><td>101.00</td><td>-33.04</td><td>-72.52</td></tr><tr><td>101.00</td><td>100.00</td><td>-72.52</td><td>-111.99</td></tr><tr><td>100.00</td><td>99.00</td><td>-111.99</td><td>-151.47</td></tr><tr><td>99.00</td><td>98.10</td><td>-151.47</td><td>-187.00</td></tr><tr><td>98.10</td><td>80.00</td><td>-187.00</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-43.5</td><td>-15.5</td><td>-9.1</td><td></td></tr><tr><td>107.45</td><td>-109.3</td><td>-15.5</td><td>-51.3</td><td></td></tr><tr><td>107.02</td><td>-122.7</td><td>-23.8</td><td>-59.7</td><td></td></tr><tr><td>105.97</td><td>-158.1</td><td>-51.5</td><td>-98.3</td><td></td></tr><tr><td>105.50</td><td>-175.1</td><td>-67.2</td><td>-126.1</td><td></td></tr><tr><td>105.09</td><td>-190.5</td><td>-83.4</td><td>-156.9</td><td></td></tr><tr><td>104.97</td><td>-194.9</td><td>-89.8</td><td>-167.3</td><td></td></tr><tr><td>103.97</td><td>-232.4</td><td>-153.4</td><td>-287.3</td><td></td></tr><tr><td>103.72</td><td>-242.0</td><td>-172.3</td><td>-328.0</td><td>-302.3</td></tr><tr><td>103.72</td><td>-242.0</td><td>130.0</td><td>-328.0</td><td></td></tr><tr><td>102.97</td><td>-271.2</td><td>66.6</td><td>-253.9</td><td></td></tr><tr><td>102.69</td><td>-282.5</td><td>39.8</td><td>-238.8</td><td></td></tr><tr><td>102.55</td><td>-288.3</td><td>28.2</td><td>-234.0</td><td></td></tr><tr><td>102.00</td><td>-292.0</td><td>27.4</td><td>-220.2</td><td></td></tr><tr><td>101.00</td><td>-279.0</td><td>70.3</td><td>-171.5</td><td></td></tr><tr><td>100.00</td><td>-277.5</td><td>79.2</td><td>-93.3</td><td></td></tr><tr><td>99.00</td><td>-288.4</td><td>51.7</td><td>-25.1</td><td></td></tr><tr><td>98.10</td><td>-307.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.020	105.970	16.756	24.530	0.00	0.00	105.970	105.500	24.530	28.010	0.00	0.00	105.500	105.090	28.010	29.608	0.00	4.10	105.090	104.970	36.371	36.882	4.10	5.30	104.970	103.970	36.882	41.137	5.30	15.30	103.970	103.720	41.137	42.201	15.30	17.80	103.720	102.973	42.201	45.380	17.80	25.27	102.973	102.690	45.380	46.583	25.27	28.10	102.690	102.550	34.375	34.949	28.10	29.50	102.550	102.000	34.949	37.206	0.00	0.00	102.000	101.000	37.206	41.308	0.00	0.00	101.000	99.999	41.308	45.411	0.00	0.00	99.999	98.999	45.411	49.514	0.00	0.00	98.999	98.099	49.514	53.206	0.00	0.00	98.099	80.000	53.206	127.440	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	109.02	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.00	-11.33	-33.04	102.00	101.00	-33.04	-72.52	101.00	100.00	-72.52	-111.99	100.00	99.00	-111.99	-151.47	99.00	98.10	-151.47	-187.00	98.10	80.00	-187.00	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	109.02	0.0	0.0	0.0		109.01	-0.1	0.0	0.0		108.02	-26.7	-7.2	-2.8		107.45	-43.5	-15.5	-9.1		107.45	-109.3	-15.5	-51.3		107.02	-122.7	-23.8	-59.7		105.97	-158.1	-51.5	-98.3		105.50	-175.1	-67.2	-126.1		105.09	-190.5	-83.4	-156.9		104.97	-194.9	-89.8	-167.3		103.97	-232.4	-153.4	-287.3		103.72	-242.0	-172.3	-328.0	-302.3	103.72	-242.0	130.0	-328.0		102.97	-271.2	66.6	-253.9		102.69	-282.5	39.8	-238.8		102.55	-288.3	28.2	-234.0		102.00	-292.0	27.4	-220.2		101.00	-279.0	70.3	-171.5		100.00	-277.5	79.2	-93.3		99.00	-288.4	51.7	-25.1		98.10	-307.0	0.0	0.0	
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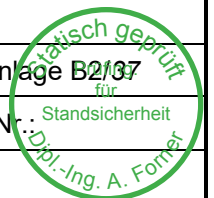
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<div>98.10 0.0 0.0 0.0</div> <div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig.Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>109.02</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.02</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.02</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.01</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.01</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.96</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.07</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.02</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.02</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.97</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.52</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.07</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.02</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.02</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.97</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.02</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.97</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.97</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.92</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.52</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.02</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.02</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.97</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.97</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.02</td><td>-4.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.97</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.97</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.92</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.02</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.97</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.97</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.93</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.74</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-2.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-2.6</td><td>0.00</td><td>0.00</td><td>19.82</td></tr><tr><td>102.50</td><td>-2.6</td><td>0.00</td><td>0.00</td><td>23.27</td></tr><tr><td>102.05</td><td>-2.1</td><td>25.44</td><td>54.36</td><td>54.36</td></tr><tr><td>102.00</td><td>-2.1</td><td>25.44</td><td>53.18</td><td>57.82</td></tr><tr><td>102.00</td><td>-2.1</td><td>27.66</td><td>57.82</td><td>57.82</td></tr><tr><td>101.95</td><td>-2.0</td><td>27.66</td><td>56.55</td><td>61.27</td></tr><tr><td>101.05</td><td>-1.3</td><td>50.00</td><td>66.90</td><td>123.45</td></tr><tr><td>101.00</td><td>-1.3</td><td>50.00</td><td>65.24</td><td>126.90</td></tr><tr><td>101.00</td><td>-1.3</td><td>50.00</td><td>65.24</td><td>126.90</td></tr><tr><td>100.95</td><td>-1.3</td><td>50.00</td><td>63.60</td><td>130.36</td></tr><tr><td>100.05</td><td>-0.8</td><td>50.00</td><td>38.39</td><td>192.53</td></tr><tr><td>100.00</td><td>-0.7</td><td>50.00</td><td>37.17</td><td>195.99</td></tr><tr><td>100.00</td><td>-0.7</td><td>50.00</td><td>37.17</td><td>195.99</td></tr></tbody></table>			Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	109.02	-15.0	-	-	-	109.02	-14.9	-	-	-	109.02	-14.9	-	-	-	109.01	-14.9	-	-	-	109.01	-14.9	-	-	-	108.96	-14.8	-	-	-	108.07	-12.9	-	-	-	108.02	-12.7	-	-	-	108.02	-12.7	-	-	-	107.97	-12.6	-	-	-	107.52	-11.6	-	-	-	107.45	-11.5	-	-	-	107.45	-11.5	-	-	-	107.40	-11.4	-	-	-	107.07	-10.6	-	-	-	107.02	-10.5	-	-	-	107.02	-10.5	-	-	-	106.97	-10.4	-	-	-	106.02	-8.4	-	-	-	105.97	-8.3	-	-	-	105.97	-8.3	-	-	-	105.92	-8.2	-	-	-	105.52	-7.4	-	-	-	105.50	-7.3	-	-	-	105.50	-7.3	-	-	-	105.45	-7.2	-	-	-	105.14	-6.6	-	-	-	105.09	-6.5	-	-	-	105.09	-6.5	-	-	-	105.02	-6.4	-	-	-	105.02	-6.4	-	-	-	104.97	-6.3	-	-	-	104.97	-6.3	-	-	-	104.92	-6.2	-	-	-	104.02	-4.6	-	-	-	103.97	-4.5	-	-	-	103.97	-4.5	-	-	-	103.92	-4.5	-	-	-	103.77	-4.2	-	-	-	103.72	-4.1	-	-	-	103.72	-4.1	-	-	-	103.67	-4.1	-	-	-	103.02	-3.2	-	-	-	102.97	-3.1	-	-	-	102.97	-3.1	-	-	-	102.93	-3.1	-	-	-	102.74	-2.9	-	-	-	102.69	-2.8	-	-	-	102.69	-2.8	-	-	-	102.64	-2.7	-	-	-	102.60	-2.7	-	-	-	102.55	-2.6	0.00	0.00	0.00	102.55	-2.6	0.00	0.00	19.82	102.50	-2.6	0.00	0.00	23.27	102.05	-2.1	25.44	54.36	54.36	102.00	-2.1	25.44	53.18	57.82	102.00	-2.1	27.66	57.82	57.82	101.95	-2.0	27.66	56.55	61.27	101.05	-1.3	50.00	66.90	123.45	101.00	-1.3	50.00	65.24	126.90	101.00	-1.3	50.00	65.24	126.90	100.95	-1.3	50.00	63.60	130.36	100.05	-0.8	50.00	38.39	192.53	100.00	-0.7	50.00	37.17	195.99	100.00	-0.7	50.00	37.17	195.99
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Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/197																																																																																																																																																																																																																																																																																																																																															
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2107																																																																																																																																																																																																																																																																																																																																															
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																															



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<p style="text-align: center;">99.95 -0.7 50.00 35.98 199.44 99.05 -0.3 50.00 16.40 261.62 99.00 -0.3 50.00 15.38 265.07 99.00 -0.3 50.00 15.38 265.07 98.95 -0.3 50.00 14.37 268.53 98.15 0.0 50.00 -1.54 323.80 98.10 0.1 50.00 -2.53 327.25</p> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{[g+q],k} = -0.02263886$ Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 10.92 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $Pv,k + G_k - G'_k + Eav,k \geq Bv,k$ $G_k = 206.64 \text{ kN/m}$ $G'_k = 0.00 \text{ kN/m}$ $Pv,k = 48.70 \text{ kN/m}$ $Eav,k = 65.05 \text{ kN/m}$ ($Eah,k = 365.13 \text{ kN/m}$) $Bv,k = 69.43$ Summe $V_k = 250.96 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfwahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck $qc,m = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) ==> $qb,k = 1.60 \text{ MN/m}^2$ $Rb,d = A \cdot qb,k / \gamma(qb,k) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung <div style="margin-left: 2em;">von bis qs,k [kN/m²] Bezeichnung</div> <div style="margin-left: 2em;">102.55 98.10 55.00 s3: Flusskies, -sand</div> Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> $R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(qs,k) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_d = Rb,d + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen $V_d = G_d - G'_k + Eav,d + Pv,d = 278.96 - 0.00 + 82.94 + 65.75 = 427.65 \text{ kN/m}$ ==> $\mu = V_d / R_d = 427.65 / 1039.87 = 0.41$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt:	Anlage B2 Schnitt 2R	Seite Anlage B2/38
Kapitel:	6 LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

7 LF 5 (BS-T, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 2
Datei: 16_BS 2_LF5 (10 kN_m², BS-T).vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 109.02 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (rechts) = 105.50 mNHN
Grundwasserstand (links) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
 $\gamma(G) = 1.20$
 $\gamma(G, Ruhe) = 1.10$
 $\gamma(Q) = 1.30$
 $\gamma(Ep) = 1.30$
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(links)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	10.00	0.00	109.02	109.02	109.01	nein

Passivseite

Lasten (einseitig begrenzt)

Nr.	sigma	x(links)	Tiefe	y(oben)
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	29.50	105.50	102.55	Wasserdruck

Kraftränder

Momente (im Uhrzeigersinn positiv)

Horizontalkräfte (nach rechts positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-31.20	0.00	0.00	0.00	48.70	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 10.92 m

Schnitt:	Anlage B2	Schnitt 2R	Seite Anlage B2/09
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr. 2109
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 199.579 / 464.669 = 0.430$
Bettungslager $B_{h,d} = 199.579 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 464.669 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-297.21	-256.67	-256.67	-50.52	3.900E+7	2.100E+7	-327.25 Steife

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-4.7	0.0	-297.69	0.00	0.00
-7.47	103.72	-4.7	0.0	-297.69	0.00	0.00
-7.47	103.72	-4.7	0.0	-297.69	0.00	0.00
-6.64	103.72	-4.7	0.0	-297.69	0.00	0.00
-5.81	103.72	-4.7	0.0	-297.69	0.00	0.00
-4.98	103.72	-4.7	0.0	-297.69	0.00	0.00
-4.15	103.72	-4.7	0.0	-297.69	0.00	0.00
-3.32	103.72	-4.8	0.0	-297.69	0.00	0.00
-2.49	103.72	-4.8	0.1	-297.69	0.00	0.00
-1.66	103.72	-4.8	0.1	-297.69	0.00	0.00
-0.83	103.72	-4.8	0.1	-297.69	0.00	0.00
0.00	103.72	-4.8	0.1	-297.69	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0041

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
109.020	109.014	0.000	3.941	0.00
109.014	108.020	3.941	11.301	0.00
108.020	107.450	11.301	15.521	0.00
107.450	107.020	15.521	18.705	0.00

Schnitt:	Anlage B2	Schnitt 2R	Seite Anlage B2/40
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
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<table><tr><td>107.020</td><td>105.970</td><td>18.705</td><td>26.479</td><td>0.00</td><td>0.00</td></tr><tr><td>105.970</td><td>105.500</td><td>26.479</td><td>29.959</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.090</td><td>29.959</td><td>31.556</td><td>0.00</td><td>4.10</td></tr><tr><td>105.090</td><td>104.970</td><td>38.874</td><td>39.385</td><td>4.10</td><td>5.30</td></tr><tr><td>104.970</td><td>103.970</td><td>39.385</td><td>43.640</td><td>5.30</td><td>15.30</td></tr><tr><td>103.970</td><td>103.720</td><td>43.640</td><td>44.704</td><td>15.30</td><td>17.80</td></tr><tr><td>103.720</td><td>102.973</td><td>44.704</td><td>47.883</td><td>17.80</td><td>25.27</td></tr><tr><td>102.973</td><td>102.690</td><td>47.883</td><td>49.086</td><td>25.27</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>36.158</td><td>36.732</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>102.000</td><td>36.732</td><td>38.989</td><td>0.00</td><td>0.00</td></tr><tr><td>102.000</td><td>101.000</td><td>38.989</td><td>43.092</td><td>0.00</td><td>0.00</td></tr><tr><td>101.000</td><td>99.999</td><td>43.092</td><td>47.194</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>98.999</td><td>47.194</td><td>51.297</td><td>0.00</td><td>0.00</td></tr><tr><td>98.999</td><td>98.099</td><td>51.297</td><td>54.989</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>54.989</td><td>129.223</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>109.02</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.00</td><td>-12.20</td><td>-35.58</td></tr><tr><td>102.00</td><td>101.00</td><td>-35.58</td><td>-78.09</td></tr><tr><td>101.00</td><td>100.00</td><td>-78.09</td><td>-120.61</td></tr><tr><td>100.00</td><td>99.00</td><td>-120.61</td><td>-163.12</td></tr><tr><td>99.00</td><td>98.10</td><td>-163.12</td><td>-201.38</td></tr><tr><td>98.10</td><td>80.00</td><td>-201.38</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-40.5</td><td>-17.5</td><td>-11.0</td><td></td></tr><tr><td>107.45</td><td>-99.0</td><td>-17.5</td><td>-48.4</td><td></td></tr><tr><td>107.02</td><td>-111.4</td><td>-26.0</td><td>-57.7</td><td></td></tr><tr><td>105.97</td><td>-144.2</td><td>-53.3</td><td>-98.5</td><td></td></tr><tr><td>105.50</td><td>-160.0</td><td>-68.5</td><td>-127.0</td><td></td></tr><tr><td>105.09</td><td>-174.2</td><td>-84.0</td><td>-158.2</td><td></td></tr><tr><td>104.97</td><td>-178.2</td><td>-90.1</td><td>-168.6</td><td></td></tr><tr><td>103.97</td><td>-212.8</td><td>-150.2</td><td>-287.4</td><td></td></tr><tr><td>103.72</td><td>-221.7</td><td>-167.9</td><td>-327.1</td><td>-297.7</td></tr><tr><td>103.72</td><td>-221.7</td><td>129.8</td><td>-327.1</td><td></td></tr><tr><td>102.97</td><td>-248.6</td><td>70.8</td><td>-251.6</td><td></td></tr><tr><td>102.69</td><td>-259.0</td><td>45.9</td><td>-235.1</td><td></td></tr><tr><td>102.55</td><td>-264.3</td><td>35.2</td><td>-229.4</td><td></td></tr><tr><td>102.00</td><td>-267.7</td><td>33.3</td><td>-211.8</td><td></td></tr><tr><td>101.00</td><td>-256.4</td><td>69.1</td><td>-160.6</td><td></td></tr><tr><td>100.00</td><td>-255.4</td><td>74.1</td><td>-86.0</td><td></td></tr><tr><td>99.00</td><td>-265.3</td><td>47.3</td><td>-22.9</td><td></td></tr><tr><td>98.10</td><td>-281.7</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.020	105.970	18.705	26.479	0.00	0.00	105.970	105.500	26.479	29.959	0.00	0.00	105.500	105.090	29.959	31.556	0.00	4.10	105.090	104.970	38.874	39.385	4.10	5.30	104.970	103.970	39.385	43.640	5.30	15.30	103.970	103.720	43.640	44.704	15.30	17.80	103.720	102.973	44.704	47.883	17.80	25.27	102.973	102.690	47.883	49.086	25.27	28.10	102.690	102.550	36.158	36.732	28.10	29.50	102.550	102.000	36.732	38.989	0.00	0.00	102.000	101.000	38.989	43.092	0.00	0.00	101.000	99.999	43.092	47.194	0.00	0.00	99.999	98.999	47.194	51.297	0.00	0.00	98.999	98.099	51.297	54.989	0.00	0.00	98.099	80.000	54.989	129.223	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	109.02	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.00	-12.20	-35.58	102.00	101.00	-35.58	-78.09	101.00	100.00	-78.09	-120.61	100.00	99.00	-120.61	-163.12	99.00	98.10	-163.12	-201.38	98.10	80.00	-201.38	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	109.02	0.0	0.0	0.0		109.01	-0.1	0.0	0.0		108.02	-24.9	-8.7	-3.6		107.45	-40.5	-17.5	-11.0		107.45	-99.0	-17.5	-48.4		107.02	-111.4	-26.0	-57.7		105.97	-144.2	-53.3	-98.5		105.50	-160.0	-68.5	-127.0		105.09	-174.2	-84.0	-158.2		104.97	-178.2	-90.1	-168.6		103.97	-212.8	-150.2	-287.4		103.72	-221.7	-167.9	-327.1	-297.7	103.72	-221.7	129.8	-327.1		102.97	-248.6	70.8	-251.6		102.69	-259.0	45.9	-235.1		102.55	-264.3	35.2	-229.4		102.00	-267.7	33.3	-211.8		101.00	-256.4	69.1	-160.6		100.00	-255.4	74.1	-86.0		99.00	-265.3	47.3	-22.9		98.10	-281.7	0.0	0.0	
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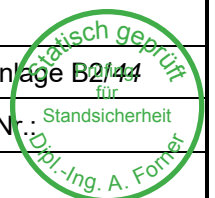


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2	-12.1	-	-	-	107.45	-11.9	-	-	-	107.45	-11.9	-	-	-	107.40	-11.8	-	-	-	107.07	-11.0	-	-	-	107.02	-10.9	-	-	-	107.02	-10.9	-	-	-	106.97	-10.8	-	-	-	106.02	-8.6	-	-	-	105.97	-8.5	-	-	-	105.97	-8.5	-	-	-	105.92	-8.4	-	-	-	105.52	-7.6	-	-	-	105.50	-7.5	-	-	-	105.50	-7.5	-	-	-	105.45	-7.4	-	-	-	105.14	-6.8	-	-	-	105.09	-6.7	-	-	-	105.09	-6.7	-	-	-	105.02	-6.5	-	-	-	105.02	-6.5	-	-	-	104.97	-6.4	-	-	-	104.97	-6.4	-	-	-	104.92	-6.3	-	-	-	104.02	-4.6	-	-	-	103.97	-4.6	-	-	-	103.97	-4.6	-	-	-	103.92	-4.5	-	-	-	103.77	-4.2	-	-	-	103.72	-4.2	-	-	-	103.72	-4.2	-	-	-	103.67	-4.1	-	-	-	103.02	-3.2	-	-	-	102.97	-3.1	-	-	-	102.97	-3.1	-	-	-	102.93	-3.0	-	-	-	102.74	-2.8	-	-	-	102.69	-2.8	-	-	-	102.69	-2.8	-	-	-	102.64	-2.7	-	-	-	102.60	-2.7	-	-	-	102.55	-2.6	0.00	0.00	0.00	102.55	-2.6	0.00	0.00	19.82	102.50	-2.6	0.00	0.00	23.27	102.05	-2.1	25.86	54.36	54.36	102.00	-2.1	25.86	53.16	57.82	102.00	-2.1	28.13	57.82	57.82	101.95	-2.0	28.13	56.53	61.27	101.05	-1.3	50.00	65.53	123.45	101.00	-1.3	50.00	63.90	126.90	101.00	-1.3	50.00	63.90	126.90	100.95	-1.2	50.00	62.31	130.36	100.05	-0.8	50.00	37.90	192.53	100.00	-0.7	50.00	36.74	195.99	100.00	-0.7	50.00	36.74	195.99
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102.55	-2.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																													
102.55	-2.6	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																													
102.50	-2.6	0.00	0.00	23.27																																																																																																																																																																																																																																																																																																																																													
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																											
Auftraggeber: Stadtverwaltung Leipzig		-																																											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																											
<table border="1"> <tr><td>99.95</td><td>-0.7</td><td>50.00</td><td>35.59</td><td>199.44</td></tr> <tr><td>99.05</td><td>-0.3</td><td>50.00</td><td>16.95</td><td>261.62</td></tr> <tr><td>99.00</td><td>-0.3</td><td>50.00</td><td>15.99</td><td>265.07</td></tr> <tr><td>99.00</td><td>-0.3</td><td>50.00</td><td>15.99</td><td>265.07</td></tr> <tr><td>98.95</td><td>-0.3</td><td>50.00</td><td>15.03</td><td>268.53</td></tr> <tr><td>98.15</td><td>0.0</td><td>50.00</td><td>-0.01</td><td>323.80</td></tr> <tr><td>98.10</td><td>0.0</td><td>50.00</td><td>-0.95</td><td>327.25</td></tr> </table> <p> Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.02140605 Theoretischer Fußpunkt = 98.099 m </p> <p> Einbindetiefe t_g = 4.45 m Profillänge = 10.92 m </p> <p> Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$ $G_{v,k}$ = 206.64 kN/m $G'_{v,k}$ = 0.00 kN/m $P_{v,k}$ = 48.70 kN/m $E_{av,k}$ = 68.88 kN/m ($E_{ah,k}$ = 386.97 kN/m) $B_{v,k}$ = 69.10 Summe $V_{v,k}$ = 255.11 kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k}$ = 1.60 MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m </p> <p> Mantelreibung <table border="1"> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k}$ [kN/m²]</th> <th>Bezeichnung</th> </tr> <tr> <td>102.55</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m $R_{d,d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m </p> <p> Einwirkungen $V_{d,d} = G_{d,d} - G'_{d,k} + E_{av,d} + P_{v,d} = 247.97 - 0.00 + 79.21 + 58.44 = 385.62$ kN/m $\Rightarrow \mu = V_{d,d} / R_{d,d} = 385.62 / 1039.87 = 0.37$ </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>			99.95	-0.7	50.00	35.59	199.44	99.05	-0.3	50.00	16.95	261.62	99.00	-0.3	50.00	15.99	265.07	99.00	-0.3	50.00	15.99	265.07	98.95	-0.3	50.00	15.03	268.53	98.15	0.0	50.00	-0.01	323.80	98.10	0.0	50.00	-0.95	327.25	von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
99.95	-0.7	50.00	35.59	199.44																																									
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102.55	98.10	55.00	s3: Flussskies, -sand																																										
Schnitt: Anlage B2 Schnitt 2R		Seite Anlage B2/44																																											
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2144																																											
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																											



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage C2 Schnitt 3R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 10_BS 3_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.75</td><td>1.25</td><td>0.29</td><td>0.28</td><td>0.69</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.24</td><td>10.000</td><td>10.000</td></tr><tr><td>105.24</td><td>102.64</td><td>5.000</td><td>5.000</td></tr><tr><td>102.64</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 391.779 / 1254.545 = 0.312 Bettungslager Bh,d = 391.779 kN/m Erdwiderstand Eph,d = 1254.545 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.24	10.000	10.000	105.24	102.64	5.000	5.000	102.64	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
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Schnitt:	Anlage C2 Schnitt 3R	Seite Anlage C2/19																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 19. für Standsicherheit																																															
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>13.268</td><td>18.526</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>18.526</td><td>19.991</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>19.991</td><td>23.693</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.448</td><td>23.693</td><td>23.895</td><td>0.00</td><td>0.52</td></tr><tr><td>105.448</td><td>105.240</td><td>23.895</td><td>24.706</td><td>0.52</td><td>2.60</td></tr><tr><td>105.240</td><td>105.000</td><td>30.074</td><td>31.095</td><td>2.60</td><td>5.00</td></tr><tr><td>105.000</td><td>104.448</td><td>31.095</td><td>33.445</td><td>5.00</td><td>5.00</td></tr><tr><td>104.448</td><td>103.443</td><td>33.445</td><td>37.718</td><td>5.00</td><td>5.00</td></tr><tr><td>103.443</td><td>102.640</td><td>37.718</td><td>41.137</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.440</td><td>30.494</td><td>31.313</td><td>5.00</td><td>5.00</td></tr><tr><td>102.440</td><td>101.792</td><td>31.313</td><td>33.974</td><td>5.00</td><td>5.00</td></tr><tr><td>101.792</td><td>101.442</td><td>33.974</td><td>35.407</td><td>5.00</td><td>5.00</td></tr><tr><td>101.442</td><td>100.444</td><td>35.407</td><td>39.500</td><td>5.00</td><td>5.00</td></tr><tr><td>100.444</td><td>99.446</td><td>39.500</td><td>43.594</td><td>5.00</td><td>5.00</td></tr><tr><td>99.446</td><td>98.448</td><td>43.594</td><td>47.688</td><td>5.00</td><td>5.00</td></tr><tr><td>98.448</td><td>98.099</td><td>47.688</td><td>49.121</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.121</td><td>123.354</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.24</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.64</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.20</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.30</td></tr><tr><td>105.45</td><td>105.24</td><td>-32.30</td><td>-44.48</td></tr><tr><td>105.24</td><td>105.00</td><td>-34.18</td><td>-41.79</td></tr><tr><td>105.00</td><td>104.45</td><td>-41.79</td><td>-50.56</td></tr><tr><td>104.45</td><td>103.44</td><td>-50.56</td><td>-66.49</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.198	13.268	18.526	0.00	0.00	106.198	106.000	18.526	19.991	0.00	0.00	106.000	105.500	19.991	23.693	0.00	0.00	105.500	105.448	23.693	23.895	0.00	0.52	105.448	105.240	23.895	24.706	0.52	2.60	105.240	105.000	30.074	31.095	2.60	5.00	105.000	104.448	31.095	33.445	5.00	5.00	104.448	103.443	33.445	37.718	5.00	5.00	103.443	102.640	37.718	41.137	5.00	5.00	102.640	102.440	30.494	31.313	5.00	5.00	102.440	101.792	31.313	33.974	5.00	5.00	101.792	101.442	33.974	35.407	5.00	5.00	101.442	100.444	35.407	39.500	5.00	5.00	100.444	99.446	39.500	43.594	5.00	5.00	99.446	98.448	43.594	47.688	5.00	5.00	98.448	98.099	47.688	49.121	5.00	5.00	98.099	80.000	49.121	123.354	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.24	5.005	5.388	30.000	-20.01	18.10	2	102.64	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.20	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.30	105.45	105.24	-32.30	-44.48	105.24	105.00	-34.18	-41.79	105.00	104.45	-41.79	-50.56	104.45	103.44	-50.56	-66.49	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																										
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98.448	98.099	47.688	49.121	5.00	5.00																																																																																																																																																																																																																																																																																																															
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2	102.64	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																														
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																			

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>103.44102.64-66.49-79.24</div><div>102.64102.44-142.59-151.07</div><div>102.44101.79-151.07-178.64</div><div>101.79101.44-178.64-193.49</div><div>101.44100.44-193.49-235.91</div><div>100.4499.45-235.91-278.33</div><div>99.4598.45-278.33-320.75</div><div>98.4598.10-320.75-335.60</div><div>98.1080.00-335.60-1104.84</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-12.8-1.4-0.3</div><div>106.45-23.8-5.7-1.6</div><div>106.20-31.0-10.3-3.6</div><div>106.00-36.9-14.7-6.1</div><div>105.50-43.7-15.0-14.6</div><div>105.45-43.8-13.6-15.3</div><div>105.24-43.8-7.3-17.5</div><div>105.00-47.1-9.9-19.5</div><div>104.45-55.2-19.0-27.3</div><div>103.44-71.2-44.0-58.1</div><div>102.64-85.0-71.7-104.1</div><div>102.44-78.0-51.3-116.3</div><div>101.79-60.30.9-131.5</div><div>101.44-53.720.7-127.6</div><div>100.44-44.350.7-88.9</div><div>99.45-46.047.6-37.4</div><div>98.45-56.716.9-3.0</div><div>98.10-62.50.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.20-27.0-9.0-3.2</div><div>106.00-32.1-12.8-5.3</div><div>105.50-38.0-13.1-12.7</div><div>105.45-38.1-11.9-13.3</div><div>105.24-38.1-6.4-15.2</div><div>105.00-41.0-8.6-17.0</div><div>104.45-48.1-16.5-23.8</div><div>103.44-61.9-38.1-50.5</div><div>102.64-74.0-62.0-90.3</div><div>102.44-67.9-44.4-100.9</div><div>101.79-52.50.8-114.0</div><div>101.44-46.818.0-110.6</div><div>100.44-38.543.9-77.0</div><div>99.45-40.041.3-32.4</div><div>98.45-49.414.6-2.6</div><div>98.10-54.40.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.20-27.0-9.0-3.2</div><div>106.00-32.1-12.8-5.3</div><div>105.50-38.0-13.1-12.7</div><div>105.45-38.1-11.9-13.3</div><div>105.24-38.1-6.4-15.2</div><div>105.00-41.0-8.6-17.0</div><div>104.45-48.1-16.5-23.8</div><div>103.44-61.9-38.1-50.5</div><div>102.64-74.0-62.0-90.3</div></div></div></div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber:	Stadtverwaltung Leipzig		-												
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div><div><div><div>102.44</div><div>-67.9</div><div>-44.4</div><div>-100.9</div></div><div><div>101.79</div><div>-52.5</div><div>0.8</div><div>-114.0</div></div><div><div>101.44</div><div>-46.8</div><div>18.0</div><div>-110.6</div></div><div><div>100.44</div><div>-38.5</div><div>43.9</div><div>-77.0</div></div><div><div>99.45</div><div>-40.0</div><div>41.3</div><div>-32.4</div></div><div><div>98.45</div><div>-49.4</div><div>14.6</div><div>-2.6</div></div><div><div>98.10</div><div>-54.4</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.24</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.64</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.79</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.44</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig.Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div></div><div><div>107.45</div><div>-7.5</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-7.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-6.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-6.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.15</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-6.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-5.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-5.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-5.9</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-5.5</div><div>7.84</div><div>42.80</div><div>42.79</div></div><div><div>105.50</div><div>-5.4</div><div>7.84</div><div>42.38</div><div>47.55</div></div><div><div>105.50</div><div>-5.4</div><div>8.79</div><div>47.55</div><div>47.55</div></div><div><div>105.45</div><div>-5.4</div><div>8.79</div><div>47.07</div><div>52.49</div></div><div><div>105.45</div><div>-5.4</div><div>9.81</div><div>52.50</div><div>52.49</div></div><div><div>105.40</div><div>-5.3</div><div>9.81</div><div>51.96</div><div>57.44</div></div><div><div>105.29</div><div>-5.2</div><div>10.00</div><div>51.90</div><div>67.33</div></div><div><div>105.24</div><div>-5.1</div><div>10.00</div><div>51.35</div><div>72.27</div></div><div><div>105.24</div><div>-5.1</div><div>5.00</div><div>25.68</div><div>55.54</div></div><div><div>105.19</div><div>-5.1</div><div>5.00</div><div>25.43</div><div>58.01</div></div><div><div>105.05</div><div>-4.9</div><div>5.00</div><div>24.67</div><div>65.44</div></div><div><div>105.00</div><div>-4.9</div><div>5.00</div><div>24.42</div><div>67.91</div></div><div><div>105.00</div><div>-4.9</div><div>5.00</div><div>24.42</div><div>67.91</div></div><div><div>104.95</div><div>-4.8</div><div>5.00</div><div>24.16</div><div>69.21</div></div><div><div>104.50</div><div>-4.4</div><div>5.00</div><div>21.83</div><div>80.86</div></div><div><div>104.45</div><div>-4.3</div><div>5.00</div><div>21.57</div><div>82.16</div></div><div><div>104.45</div><div>-4.3</div><div>5.00</div><div>21.57</div><div>82.16</div></div><div><div>104.40</div><div>-4.3</div><div>5.00</div><div>21.31</div><div>83.45</div></div></div></div> <tr><td>Schnitt:</td><td>Anlage C2</td><td>Schnitt 3R</td><td>Seite Anlage C2/4</td></tr> <tr><td>Kapitel:</td><td>1</td><td>LF 1.1 (BS-T, ohne Lasten)</td><td>Archiv Nr.: Dpl.-Ing. A. Förmel</td></tr> <tr><td>Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>				Schnitt:	Anlage C2	Schnitt 3R	Seite Anlage C2/4	Kapitel:	1	LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: Dpl.-Ing. A. Förmel	Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025
Schnitt:	Anlage C2	Schnitt 3R	Seite Anlage C2/4												
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																										
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																																																																										
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<table><tr><td>103.49</td><td>-3.4</td><td>5.00</td><td>16.81</td><td>106.76</td></tr><tr><td>103.44</td><td>-3.3</td><td>5.00</td><td>16.57</td><td>108.05</td></tr><tr><td>103.44</td><td>-3.3</td><td>5.00</td><td>16.57</td><td>108.05</td></tr><tr><td>103.39</td><td>-3.3</td><td>5.00</td><td>16.33</td><td>109.35</td></tr><tr><td>102.69</td><td>-2.6</td><td>5.00</td><td>13.09</td><td>127.47</td></tr><tr><td>102.64</td><td>-2.6</td><td>5.00</td><td>12.87</td><td>128.77</td></tr><tr><td>102.64</td><td>-2.6</td><td>50.00</td><td>128.71</td><td>231.70</td></tr><tr><td>102.59</td><td>-2.5</td><td>50.00</td><td>126.56</td><td>235.15</td></tr><tr><td>102.49</td><td>-2.4</td><td>50.00</td><td>122.30</td><td>242.04</td></tr><tr><td>102.44</td><td>-2.4</td><td>50.00</td><td>120.20</td><td>245.49</td></tr><tr><td>102.44</td><td>-2.4</td><td>50.00</td><td>120.20</td><td>245.49</td></tr><tr><td>102.39</td><td>-2.4</td><td>50.00</td><td>118.13</td><td>248.94</td></tr><tr><td>101.84</td><td>-1.9</td><td>50.00</td><td>96.80</td><td>286.85</td></tr><tr><td>101.79</td><td>-1.9</td><td>50.00</td><td>95.00</td><td>290.30</td></tr><tr><td>101.79</td><td>-1.9</td><td>50.00</td><td>95.00</td><td>290.30</td></tr><tr><td>101.74</td><td>-1.9</td><td>50.00</td><td>93.23</td><td>293.74</td></tr><tr><td>101.49</td><td>-1.7</td><td>50.00</td><td>84.73</td><td>310.98</td></tr><tr><td>101.44</td><td>-1.7</td><td>50.00</td><td>83.10</td><td>314.42</td></tr><tr><td>101.44</td><td>-1.7</td><td>50.00</td><td>83.10</td><td>314.42</td></tr><tr><td>101.39</td><td>-1.6</td><td>50.00</td><td>81.50</td><td>317.87</td></tr><tr><td>100.49</td><td>-1.1</td><td>50.00</td><td>56.28</td><td>379.91</td></tr><tr><td>100.44</td><td>-1.1</td><td>50.00</td><td>55.06</td><td>383.36</td></tr><tr><td>100.44</td><td>-1.1</td><td>50.00</td><td>55.06</td><td>383.36</td></tr><tr><td>100.39</td><td>-1.1</td><td>50.00</td><td>53.86</td><td>386.80</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>34.44</td><td>448.84</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>33.46</td><td>452.29</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>33.46</td><td>452.29</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>32.48</td><td>455.74</td></tr><tr><td>98.50</td><td>-0.3</td><td>50.00</td><td>15.62</td><td>517.78</td></tr><tr><td>98.45</td><td>-0.3</td><td>50.00</td><td>14.71</td><td>521.22</td></tr><tr><td>98.45</td><td>-0.3</td><td>50.00</td><td>14.71</td><td>521.22</td></tr><tr><td>98.40</td><td>-0.3</td><td>50.00</td><td>13.79</td><td>524.67</td></tr><tr><td>98.15</td><td>-0.2</td><td>50.00</td><td>9.22</td><td>541.90</td></tr><tr><td>98.10</td><td>-0.2</td><td>50.00</td><td>8.30</td><td>545.35</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02100026 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p>			103.49	-3.4	5.00	16.81	106.76	103.44	-3.3	5.00	16.57	108.05	103.44	-3.3	5.00	16.57	108.05	103.39	-3.3	5.00	16.33	109.35	102.69	-2.6	5.00	13.09	127.47	102.64	-2.6	5.00	12.87	128.77	102.64	-2.6	50.00	128.71	231.70	102.59	-2.5	50.00	126.56	235.15	102.49	-2.4	50.00	122.30	242.04	102.44	-2.4	50.00	120.20	245.49	102.44	-2.4	50.00	120.20	245.49	102.39	-2.4	50.00	118.13	248.94	101.84	-1.9	50.00	96.80	286.85	101.79	-1.9	50.00	95.00	290.30	101.79	-1.9	50.00	95.00	290.30	101.74	-1.9	50.00	93.23	293.74	101.49	-1.7	50.00	84.73	310.98	101.44	-1.7	50.00	83.10	314.42	101.44	-1.7	50.00	83.10	314.42	101.39	-1.6	50.00	81.50	317.87	100.49	-1.1	50.00	56.28	379.91	100.44	-1.1	50.00	55.06	383.36	100.44	-1.1	50.00	55.06	383.36	100.39	-1.1	50.00	53.86	386.80	99.50	-0.7	50.00	34.44	448.84	99.45	-0.7	50.00	33.46	452.29	99.45	-0.7	50.00	33.46	452.29	99.40	-0.6	50.00	32.48	455.74	98.50	-0.3	50.00	15.62	517.78	98.45	-0.3	50.00	14.71	521.22	98.45	-0.3	50.00	14.71	521.22	98.40	-0.3	50.00	13.79	524.67	98.15	-0.2	50.00	9.22	541.90	98.10	-0.2	50.00	8.30	545.35
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig																		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_k = 176.93 \text{ kN/m}$</p> <p>$G'_{k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 53.80 \text{ kN/m}$ ($E_{ah,k} = 303.36 \text{ kN/m}$)</p> <p>$B_{v,k} = 127.58$</p> <p>Summe $V_k = 103.15 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.24</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.24</td><td>102.64</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.64</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 249.70 / 1.40 = 178.36 \text{ kN/m}$</p> <p>$R_{d} = R_{b,d} + R_{s1,d} = 1043.41 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.87 + 0.00 = 274.19 \text{ kN/m}$</p> <p>$\implies \mu = V_d / R_d = 274.19 / 1043.41 = 0.26$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.24	0.00	S1: Auffüllungen	105.24	102.64	0.00	S2: Auelehm	102.64	98.10	55.00	s3: Flussskies, -sand
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Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/6																
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025																
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 11_BS 3_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.68 104.92 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.24 10.000 10.000 105.24 102.64 5.000 5.000 102.64 80.00 50.000 50.000</div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
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<div>Ausnutzungsgrad $\mu_e = 442.469 / 1204.768 = 0.367$ Bettungslager $B_{h,d} = 442.469 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1204.768 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th colspan="2">[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.709</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.709</td><td>20.066</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>20.067</td><td>26.057</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>26.057</td><td>27.784</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.680</td><td>27.784</td><td>30.154</td><td>0.00</td><td>0.00</td></tr><tr><td>105.680</td><td>105.500</td><td>30.154</td><td>30.570</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.448</td><td>30.570</td><td>30.507</td><td>0.00</td><td>0.52</td></tr><tr><td>105.448</td><td>105.240</td><td>30.507</td><td>30.258</td><td>0.52</td><td>2.60</td></tr><tr><td>105.240</td><td>105.000</td><td>37.206</td><td>36.656</td><td>2.60</td><td>5.00</td></tr><tr><td>105.000</td><td>104.915</td><td>36.656</td><td>36.462</td><td>5.00</td><td>5.00</td></tr><tr><td>104.915</td><td>104.421</td><td>36.462</td><td>38.567</td><td>5.00</td><td>5.00</td></tr><tr><td>104.421</td><td>103.431</td><td>38.567</td><td>42.776</td><td>5.00</td><td>5.00</td></tr><tr><td>103.431</td><td>102.640</td><td>42.776</td><td>46.143</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.590</td><td>34.061</td><td>34.266</td><td>5.00</td><td>5.00</td></tr><tr><td>102.590</td><td>102.440</td><td>34.266</td><td>34.880</td><td>5.00</td><td>5.00</td></tr><tr><td>102.440</td><td>101.842</td><td>34.880</td><td>37.336</td><td>5.00</td><td>5.00</td></tr><tr><td>101.842</td><td>101.442</td><td>37.336</td><td>38.973</td><td>5.00</td><td>5.00</td></tr><tr><td>101.442</td><td>100.444</td><td>38.973</td><td>43.067</td><td>5.00</td><td>5.00</td></tr><tr><td>100.444</td><td>99.446</td><td>43.067</td><td>47.161</td><td>5.00</td><td>5.00</td></tr><tr><td>99.446</td><td>98.448</td><td>47.161</td><td>51.254</td><td>5.00</td><td>5.00</td></tr><tr><td>98.448</td><td>98.099</td><td>51.254</td><td>52.687</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.687</td><td>126.921</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></tbody></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> 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<table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr></thead></table>			Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		107.450	107.448	0.000	3.923	0.00	0.00	107.448	106.886	3.923	9.709	0.00	0.00	106.886	106.450	9.709	20.066	0.00	0.00	106.450	106.198	20.067	26.057	0.00	0.00	106.198	106.000	26.057	27.784	0.00	0.00	106.000	105.680	27.784	30.154	0.00	0.00	105.680	105.500	30.154	30.570	0.00	0.00	105.500	105.448	30.570	30.507	0.00	0.52	105.448	105.240	30.507	30.258	0.52	2.60	105.240	105.000	37.206	36.656	2.60	5.00	105.000	104.915	36.656	36.462	5.00	5.00	104.915	104.421	36.462	38.567	5.00	5.00	104.421	103.431	38.567	42.776	5.00	5.00	103.431	102.640	42.776	46.143	5.00	5.00	102.640	102.590	34.061	34.266	5.00	5.00	102.590	102.440	34.266	34.880	5.00	5.00	102.440	101.842	34.880	37.336	5.00	5.00	101.842	101.442	37.336	38.973	5.00	5.00	101.442	100.444	38.973	43.067	5.00	5.00	100.444	99.446	43.067	47.161	5.00	5.00	99.446	98.448	47.161	51.254	5.00	5.00	98.448	98.099	51.254	52.687	5.00	5.00	98.099	80.000	52.687	126.921	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.24	5.005	5.388	30.000	-20.01	18.10	2	102.64	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	
Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																																	
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106.198	106.000	26.057	27.784	0.00	0.00																																																																																																																																																																																																																																																																																																						
106.000	105.680	27.784	30.154	0.00	0.00																																																																																																																																																																																																																																																																																																						
105.680	105.500	30.154	30.570	0.00	0.00																																																																																																																																																																																																																																																																																																						
105.500	105.448	30.570	30.507	0.00	0.52																																																																																																																																																																																																																																																																																																						
105.448	105.240	30.507	30.258	0.52	2.60																																																																																																																																																																																																																																																																																																						
105.240	105.000	37.206	36.656	2.60	5.00																																																																																																																																																																																																																																																																																																						
105.000	104.915	36.656	36.462	5.00	5.00																																																																																																																																																																																																																																																																																																						
104.915	104.421	36.462	38.567	5.00	5.00																																																																																																																																																																																																																																																																																																						
104.421	103.431	38.567	42.776	5.00	5.00																																																																																																																																																																																																																																																																																																						
103.431	102.640	42.776	46.143	5.00	5.00																																																																																																																																																																																																																																																																																																						
102.640	102.590	34.061	34.266	5.00	5.00																																																																																																																																																																																																																																																																																																						
102.590	102.440	34.266	34.880	5.00	5.00																																																																																																																																																																																																																																																																																																						
102.440	101.842	34.880	37.336	5.00	5.00																																																																																																																																																																																																																																																																																																						
101.842	101.442	37.336	38.973	5.00	5.00																																																																																																																																																																																																																																																																																																						
101.442	100.444	38.973	43.067	5.00	5.00																																																																																																																																																																																																																																																																																																						
100.444	99.446	43.067	47.161	5.00	5.00																																																																																																																																																																																																																																																																																																						
99.446	98.448	47.161	51.254	5.00	5.00																																																																																																																																																																																																																																																																																																						
98.448	98.099	51.254	52.687	5.00	5.00																																																																																																																																																																																																																																																																																																						
98.099	80.000	52.687	126.921	5.00	5.00																																																																																																																																																																																																																																																																																																						
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1	105.24	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																																																																																					
2	102.64	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																					
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																					
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																								
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<table><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.20</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.68</td><td>0.00</td><td>-18.73</td></tr><tr><td>105.68</td><td>105.50</td><td>-18.73</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.30</td></tr><tr><td>105.45</td><td>105.24</td><td>-32.30</td><td>-44.48</td></tr><tr><td>105.24</td><td>105.00</td><td>-34.18</td><td>-41.79</td></tr><tr><td>105.00</td><td>104.92</td><td>-41.79</td><td>-43.14</td></tr><tr><td>104.92</td><td>104.42</td><td>-43.14</td><td>-50.99</td></tr><tr><td>104.42</td><td>103.43</td><td>-50.99</td><td>-66.68</td></tr><tr><td>103.43</td><td>102.64</td><td>-66.68</td><td>-79.24</td></tr><tr><td>102.64</td><td>102.59</td><td>-142.59</td><td>-144.71</td></tr><tr><td>102.59</td><td>102.44</td><td>-144.71</td><td>-151.07</td></tr><tr><td>102.44</td><td>101.84</td><td>-151.07</td><td>-176.52</td></tr><tr><td>101.84</td><td>101.44</td><td>-176.52</td><td>-193.49</td></tr><tr><td>101.44</td><td>100.44</td><td>-193.49</td><td>-235.91</td></tr><tr><td>100.44</td><td>99.45</td><td>-235.91</td><td>-278.33</td></tr><tr><td>99.45</td><td>98.45</td><td>-278.33</td><td>-320.75</td></tr><tr><td>98.45</td><td>98.10</td><td>-320.75</td><td>-335.60</td></tr><tr><td>98.10</td><td>80.00</td><td>-335.60</td><td>-1104.84</td></tr></table> <table><tr><td colspan="4">Schnittgrößen (Bemessungswerte)</td></tr><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>-0.1</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-13.9</td><td>-4.4</td><td>-1.1</td></tr><tr><td>106.45</td><td>-26.1</td><td>-11.9</td><td>-4.4</td></tr><tr><td>106.20</td><td>-34.0</td><td>-18.6</td><td>-8.2</td></tr><tr><td>106.00</td><td>-40.5</td><td>-24.7</td><td>-12.5</td></tr><tr><td>105.68</td><td>-46.4</td><td>-30.7</td><td>-21.6</td></tr><tr><td>105.50</td><td>-47.5</td><td>-29.4</td><td>-27.1</td></tr><tr><td>105.45</td><td>-47.6</td><td>-28.4</td><td>-28.6</td></tr><tr><td>105.24</td><td>-47.0</td><td>-21.7</td><td>-33.9</td></tr><tr><td>105.00</td><td>-49.7</td><td>-23.7</td><td>-39.3</td></tr><tr><td>104.92</td><td>-50.7</td><td>-24.6</td><td>-41.3</td></tr><tr><td>104.42</td><td>-56.8</td><td>-31.5</td><td>-55.1</td></tr><tr><td>103.43</td><td>-70.7</td><td>-55.2</td><td>-96.9</td></tr><tr><td>102.64</td><td>-83.3</td><td>-83.1</td><td>-151.2</td></tr><tr><td>102.59</td><td>-84.0</td><td>-84.5</td><td>-155.4</td></tr><tr><td>102.44</td><td>-76.6</td><td>-64.2</td><td>-166.5</td></tr><tr><td>101.84</td><td>-52.5</td><td>1.0</td><td>-184.2</td></tr><tr><td>101.44</td><td>-41.2</td><td>31.6</td><td>-177.4</td></tr><tr><td>100.44</td><td>-26.5</td><td>70.6</td><td>-122.2</td></tr><tr><td>99.45</td><td>-27.4</td><td>65.3</td><td>-51.1</td></tr><tr><td>98.45</td><td>-41.2</td><td>23.0</td><td>-4.1</td></tr><tr><td>98.10</td><td>-48.4</td><td>0.0</td><td>0.0</td></tr></table>			[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.20	106.00	0.00	0.00	106.00	105.68	0.00	-18.73	105.68	105.50	-18.73	-29.26	105.50	105.45	-29.26	-32.30	105.45	105.24	-32.30	-44.48	105.24	105.00	-34.18	-41.79	105.00	104.92	-41.79	-43.14	104.92	104.42	-43.14	-50.99	104.42	103.43	-50.99	-66.68	103.43	102.64	-66.68	-79.24	102.64	102.59	-142.59	-144.71	102.59	102.44	-144.71	-151.07	102.44	101.84	-151.07	-176.52	101.84	101.44	-176.52	-193.49	101.44	100.44	-193.49	-235.91	100.44	99.45	-235.91	-278.33	99.45	98.45	-278.33	-320.75	98.45	98.10	-320.75	-335.60	98.10	80.00	-335.60	-1104.84	Schnittgrößen (Bemessungswerte)				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	0.0	0.0	106.89	-13.9	-4.4	-1.1	106.45	-26.1	-11.9	-4.4	106.20	-34.0	-18.6	-8.2	106.00	-40.5	-24.7	-12.5	105.68	-46.4	-30.7	-21.6	105.50	-47.5	-29.4	-27.1	105.45	-47.6	-28.4	-28.6	105.24	-47.0	-21.7	-33.9	105.00	-49.7	-23.7	-39.3	104.92	-50.7	-24.6	-41.3	104.42	-56.8	-31.5	-55.1	103.43	-70.7	-55.2	-96.9	102.64	-83.3	-83.1	-151.2	102.59	-84.0	-84.5	-155.4	102.44	-76.6	-64.2	-166.5	101.84	-52.5	1.0	-184.2	101.44	-41.2	31.6	-177.4	100.44	-26.5	70.6	-122.2	99.45	-27.4	65.3	-51.1	98.45	-41.2	23.0	-4.1	98.10	-48.4	0.0	0.0
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																								
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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-8.0</td><td>0.00</td><td>0.00</td><td>5.07</td></tr><tr><td>105.73</td><td>-7.7</td><td>3.30</td><td>25.37</td><td>25.37</td></tr><tr><td>105.68</td><td>-7.6</td><td>3.30</td><td>25.10</td><td>30.44</td></tr><tr><td>105.68</td><td>-7.6</td><td>4.00</td><td>30.44</td><td>30.44</td></tr><tr><td>105.63</td><td>-7.5</td><td>4.00</td><td>30.17</td><td>34.72</td></tr><tr><td>105.54</td><td>-7.4</td><td>5.85</td><td>43.27</td><td>43.27</td></tr><tr><td>105.50</td><td>-7.3</td><td>5.85</td><td>42.87</td><td>47.55</td></tr><tr><td>105.50</td><td>-7.3</td><td>6.48</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-7.3</td><td>6.48</td><td>47.04</td><td>52.49</td></tr><tr><td>105.45</td><td>-7.3</td><td>7.24</td><td>52.50</td><td>52.49</td></tr><tr><td>105.40</td><td>-7.2</td><td>7.24</td><td>51.92</td><td>57.44</td></tr><tr><td>105.29</td><td>-7.0</td><td>9.60</td><td>67.33</td><td>67.33</td></tr><tr><td>105.24</td><td>-6.9</td><td>9.60</td><td>66.57</td><td>72.27</td></tr><tr><td>105.24</td><td>-6.9</td><td>5.00</td><td>34.68</td><td>55.54</td></tr><tr><td>105.19</td><td>-6.9</td><td>5.00</td><td>34.31</td><td>58.01</td></tr><tr><td>105.05</td><td>-6.6</td><td>5.00</td><td>33.22</td><td>65.44</td></tr><tr><td>105.00</td><td>-6.6</td><td>5.00</td><td>32.86</td><td>67.91</td></tr><tr><td>105.00</td><td>-6.6</td><td>5.00</td><td>32.86</td><td>67.91</td></tr><tr><td>104.96</td><td>-6.5</td><td>5.00</td><td>32.54</td><td>69.01</td></tr><tr><td>104.96</td><td>-6.5</td><td>5.00</td><td>32.54</td><td>69.01</td></tr><tr><td>104.92</td><td>-6.4</td><td>5.00</td><td>32.22</td><td>70.10</td></tr><tr><td>104.92</td><td>-6.4</td><td>5.00</td><td>32.22</td><td>70.10</td></tr><tr><td>104.87</td><td>-6.4</td><td>5.00</td><td>31.85</td><td>71.38</td></tr><tr><td>104.47</td><td>-5.8</td><td>5.00</td><td>28.91</td><td>81.58</td></tr><tr><td>104.42</td><td>-5.7</td><td>5.00</td><td>28.55</td><td>82.86</td></tr><tr><td>104.42</td><td>-5.7</td><td>5.00</td><td>28.55</td><td>82.86</td></tr><tr><td>104.37</td><td>-5.6</td><td>5.00</td><td>28.19</td><td>84.13</td></tr><tr><td>103.48</td><td>-4.4</td><td>5.00</td><td>21.87</td><td>107.09</td></tr><tr><td>103.43</td><td>-4.3</td><td>5.00</td><td>21.53</td><td>108.36</td></tr><tr><td>103.43</td><td>-4.3</td><td>5.00</td><td>21.53</td><td>108.36</td></tr><tr><td>103.38</td><td>-4.2</td><td>5.00</td><td>21.20</td><td>109.64</td></tr><tr><td>102.69</td><td>-3.3</td><td>5.00</td><td>16.72</td><td>127.49</td></tr><tr><td>102.64</td><td>-3.3</td><td>5.00</td><td>16.42</td><td>128.77</td></tr><tr><td>102.64</td><td>-3.3</td><td>5.00</td><td>16.42</td><td>231.70</td></tr><tr><td>102.59</td><td>-3.2</td><td>5.00</td><td>16.11</td><td>235.15</td></tr><tr><td>102.59</td><td>-3.2</td><td>50.00</td><td>161.13</td><td>235.15</td></tr><tr><td>102.54</td><td>-3.2</td><td>50.00</td><td>158.14</td><td>238.60</td></tr><tr><td>102.49</td><td>-3.1</td><td>50.00</td><td>155.17</td><td>242.04</td></tr></table>						102.64	0.0	0.0	0.0	102.59	0.0	0.0	0.0	102.44	0.0	0.0	0.0	101.84	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-10.4	-	-	-	107.45	-10.4	-	-	-	107.45	-10.4	-	-	-	107.40	-10.3	-	-	-	106.95	-9.6	-	-	-	106.89	-9.5	-	-	-	106.89	-9.5	-	-	-	106.84	-9.4	-	-	-	106.50	-8.9	-	-	-	106.45	-8.8	-	-	-	106.45	-8.8	-	-	-	106.40	-8.7	-	-	-	106.25	-8.5	-	-	-	106.20	-8.4	-	-	-	106.20	-8.4	-	-	-	106.15	-8.3	-	-	-	106.05	-8.2	-	-	-	106.00	-8.1	0.00	0.00	0.00	106.00	-8.1	0.00	0.00	0.00	105.95	-8.0	0.00	0.00	5.07	105.73	-7.7	3.30	25.37	25.37	105.68	-7.6	3.30	25.10	30.44	105.68	-7.6	4.00	30.44	30.44	105.63	-7.5	4.00	30.17	34.72	105.54	-7.4	5.85	43.27	43.27	105.50	-7.3	5.85	42.87	47.55	105.50	-7.3	6.48	47.55	47.55	105.45	-7.3	6.48	47.04	52.49	105.45	-7.3	7.24	52.50	52.49	105.40	-7.2	7.24	51.92	57.44	105.29	-7.0	9.60	67.33	67.33	105.24	-6.9	9.60	66.57	72.27	105.24	-6.9	5.00	34.68	55.54	105.19	-6.9	5.00	34.31	58.01	105.05	-6.6	5.00	33.22	65.44	105.00	-6.6	5.00	32.86	67.91	105.00	-6.6	5.00	32.86	67.91	104.96	-6.5	5.00	32.54	69.01	104.96	-6.5	5.00	32.54	69.01	104.92	-6.4	5.00	32.22	70.10	104.92	-6.4	5.00	32.22	70.10	104.87	-6.4	5.00	31.85	71.38	104.47	-5.8	5.00	28.91	81.58	104.42	-5.7	5.00	28.55	82.86	104.42	-5.7	5.00	28.55	82.86	104.37	-5.6	5.00	28.19	84.13	103.48	-4.4	5.00	21.87	107.09	103.43	-4.3	5.00	21.53	108.36	103.43	-4.3	5.00	21.53	108.36	103.38	-4.2	5.00	21.20	109.64	102.69	-3.3	5.00	16.72	127.49	102.64	-3.3	5.00	16.42	128.77	102.64	-3.3	5.00	16.42	231.70	102.59	-3.2	5.00	16.11	235.15	102.59	-3.2	50.00	161.13	235.15	102.54	-3.2	50.00	158.14	238.60	102.49	-3.1	50.00	155.17	242.04
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105.24	-6.9	9.60	66.57	72.27																																																																																																																																																																																																																																																																																																																																												
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104.47	-5.8	5.00	28.91	81.58																																																																																																																																																																																																																																																																																																																																												
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102.64	-3.3	5.00	16.42	128.77																																																																																																																																																																																																																																																																																																																																												
102.64	-3.3	5.00	16.42	231.70																																																																																																																																																																																																																																																																																																																																												
102.59	-3.2	5.00	16.11	235.15																																																																																																																																																																																																																																																																																																																																												
102.59	-3.2	50.00	161.13	235.15																																																																																																																																																																																																																																																																																																																																												
102.54	-3.2	50.00	158.14	238.60																																																																																																																																																																																																																																																																																																																																												
102.49	-3.1	50.00	155.17	242.04																																																																																																																																																																																																																																																																																																																																												
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statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																													
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																													
<table><tr><td>102.44</td><td>-3.0</td><td>50.00</td><td>152.24</td><td>245.49</td></tr><tr><td>102.44</td><td>-3.0</td><td>50.00</td><td>152.24</td><td>245.49</td></tr><tr><td>102.39</td><td>-3.0</td><td>50.00</td><td>149.33</td><td>248.94</td></tr><tr><td>101.89</td><td>-2.4</td><td>50.00</td><td>122.07</td><td>283.40</td></tr><tr><td>101.84</td><td>-2.4</td><td>50.00</td><td>119.53</td><td>286.85</td></tr><tr><td>101.84</td><td>-2.4</td><td>50.00</td><td>119.53</td><td>286.85</td></tr><tr><td>101.79</td><td>-2.3</td><td>50.00</td><td>117.02</td><td>290.30</td></tr><tr><td>101.49</td><td>-2.1</td><td>50.00</td><td>102.67</td><td>310.98</td></tr><tr><td>101.44</td><td>-2.0</td><td>50.00</td><td>100.40</td><td>314.42</td></tr><tr><td>101.44</td><td>-2.0</td><td>50.00</td><td>100.40</td><td>314.42</td></tr><tr><td>101.39</td><td>-2.0</td><td>50.00</td><td>98.15</td><td>317.87</td></tr><tr><td>100.49</td><td>-1.3</td><td>50.00</td><td>62.89</td><td>379.91</td></tr><tr><td>100.44</td><td>-1.2</td><td>50.00</td><td>61.18</td><td>383.36</td></tr><tr><td>100.44</td><td>-1.2</td><td>50.00</td><td>61.18</td><td>383.36</td></tr><tr><td>100.39</td><td>-1.2</td><td>50.00</td><td>59.49</td><td>386.80</td></tr><tr><td>99.50</td><td>-0.6</td><td>50.00</td><td>32.22</td><td>448.84</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.83</td><td>452.29</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.83</td><td>452.29</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>29.45</td><td>455.74</td></tr><tr><td>98.50</td><td>-0.1</td><td>50.00</td><td>5.68</td><td>517.78</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>4.38</td><td>521.22</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>4.38</td><td>521.22</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>3.09</td><td>524.67</td></tr><tr><td>98.15</td><td>0.1</td><td>50.00</td><td>-3.36</td><td>541.90</td></tr><tr><td>98.10</td><td>0.1</td><td>50.00</td><td>-4.66</td><td>545.35</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02964147 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + Gv,k - G',k + Eav,k >= Bv,k Gv,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 61.38 kN/m (Eah,k = 347.03 kN/m) Bv,k = 142.99 Summe V,k = 95.32 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.24</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.24</td><td>102.64</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.64</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 249.70 / 1.40 = 178.36 kN/m Rd = Rb,d + Rs1,d = 1043.41 kN/m</p> <p>Einwirkungen Vd = Gd - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 70.59 + 0.00 = 282.90 kN/m ==> µ = Vd / Rd = 282.90 / 1043.41 = 0.27</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.44	-3.0	50.00	152.24	245.49	102.44	-3.0	50.00	152.24	245.49	102.39	-3.0	50.00	149.33	248.94	101.89	-2.4	50.00	122.07	283.40	101.84	-2.4	50.00	119.53	286.85	101.84	-2.4	50.00	119.53	286.85	101.79	-2.3	50.00	117.02	290.30	101.49	-2.1	50.00	102.67	310.98	101.44	-2.0	50.00	100.40	314.42	101.44	-2.0	50.00	100.40	314.42	101.39	-2.0	50.00	98.15	317.87	100.49	-1.3	50.00	62.89	379.91	100.44	-1.2	50.00	61.18	383.36	100.44	-1.2	50.00	61.18	383.36	100.39	-1.2	50.00	59.49	386.80	99.50	-0.6	50.00	32.22	448.84	99.45	-0.6	50.00	30.83	452.29	99.45	-0.6	50.00	30.83	452.29	99.40	-0.6	50.00	29.45	455.74	98.50	-0.1	50.00	5.68	517.78	98.45	-0.1	50.00	4.38	521.22	98.45	-0.1	50.00	4.38	521.22	98.40	-0.1	50.00	3.09	524.67	98.15	0.1	50.00	-3.36	541.90	98.10	0.1	50.00	-4.66	545.35	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.24	0.00	S1: Auffüllungen	105.24	102.64	0.00	S2: Auelehm	102.64	98.10	55.00	s3: Flussskies, -sand
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																													

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																							
Auftraggeber: Stadtverwaltung Leipzig																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <div><div>GGU-RETAIN / Version 12.00 / 01.02.2024</div><div>Bohrpfahlwand</div><div>=====</div><div>Teilsicherheitskonzept (EC 7)</div><div>EMG TBA 3.2 - Schnitt 3</div><div>Datei: 12_BS 3_LF2.1 (ohne Lasten).vrb</div><div>Datum: 20.06.2024</div></div> <div><div>Indices:</div><div>d = Bemessungswert</div><div>k = charakteristisch</div><div>g = Ständig, einschließlich Wasserdruck</div><div>q = Veränderlich</div><div>g+q = Ständig + Veränderlich, einschließlich Wasserdruck</div><div>w = Wasserdruck</div></div> <div><div>Wandkopf = 107.45 mNHN</div></div> <div><div>Maximale Teilung bis Baugrubensohle: 0.050 m</div><div>Maximale Teilung unter Baugrubensohle: 0.050 m</div></div> <div><div>Baugrubensohle = 102.55 mNHN</div><div>Bohrpfahldurchmesser = 0.88 m</div><div>Bohrpfahlabstand = 1.50 m</div><div>Anzahl unbew. Pfähle = 1</div></div> <div><div>Grundwasserstand (rechts) = 105.50 mNHN</div><div>Grundwasserstand (links) = 105.00 mNHN</div><div>Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div></div> <div><div>Teilsicherheiten</div><div>BS: DIN EN 1997-1: BS-T</div><div>gamma(G) = 1.20</div><div>gamma(G,Ruhe) = 1.10</div><div>gamma(Q) = 1.30</div><div>gamma(Ep) = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div></div> <div><div>Bermen auf der Aktivseite</div><div><table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.75</td><td>1.25</td><td>0.29</td><td>0.28</td><td>0.69</td><td>0.00</td><td>nein</td></tr></table></div><div>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet.</div><div>Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich.</div><div>Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div></div> <div><div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div></div> <div><div>Art des Fußlagers:</div><div>Profillänge automatisch und Fuß gebettet</div><div>Profillänge = 9.35 m</div></div> <div><div>Bettungsmodule</div><div><table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table></div></div> <div><div>Ausnutzungsgrad $\mu_e = 293.812 / 393.101 = 0.747$</div><div>Bettungslager $B_{h,d} = 293.812$ kN/m</div><div>Erdwiderstand $E_{ph,d} = 393.101$ kN/m</div></div>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
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<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-98.56</td><td>-85.36</td><td>-85.36</td><td>-7.92</td><td>6.900E+4</td><td>2.100E+7</td><td>-108.84</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.0</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.1</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.1</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.3</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-8.4</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-9.4</td><td>0.1</td><td>-98.56</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 3\Rechtes Ufer\10_BS 3_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0069</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{a,k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckkoordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>105.500</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>27.906</td><td>27.906</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.240</td><td>27.906</td><td>27.906</td><td>0.50</td><td>2.60</td></tr><tr><td>105.240</td><td>105.000</td><td>27.906</td><td>27.906</td><td>2.60</td><td>5.00</td></tr><tr><td>105.000</td><td>104.450</td><td>23.255</td><td>23.255</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.400</td><td>23.255</td><td>23.255</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>23.255</td><td>23.255</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-98.56	-85.36	-85.36	-7.92	6.900E+4	2.100E+7	-108.84	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.0	0.0	-98.56	0.00	0.00	-0.90	106.95	-8.1	0.0	-98.56	0.00	0.00	-0.90	106.95	-8.1	0.0	-98.56	0.00	0.00	-0.80	106.95	-8.3	0.0	-98.56	0.00	0.00	-0.70	106.95	-8.4	0.0	-98.56	0.00	0.00	-0.60	106.95	-8.6	0.0	-98.56	0.00	0.00	-0.50	106.95	-8.7	0.0	-98.56	0.00	0.00	-0.40	106.95	-8.8	0.0	-98.56	0.00	0.00	-0.30	106.95	-9.0	0.0	-98.56	0.00	0.00	-0.20	106.95	-9.1	0.0	-98.56	0.00	0.00	-0.10	106.95	-9.3	0.0	-98.56	0.00	0.00	0.00	106.95	-9.4	0.1	-98.56	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0069	Schicht	UK	γ _{m,k}	γ _{a,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	27.906	27.906	0.00	0.00	106.950	106.886	27.906	27.906	0.00	0.00	106.886	106.450	27.906	27.906	0.00	0.00	106.450	106.198	27.906	27.906	0.00	0.00	106.198	105.500	27.906	27.906	0.00	0.00	105.500	105.450	27.906	27.906	0.00	0.50	105.450	105.240	27.906	27.906	0.50	2.60	105.240	105.000	27.906	27.906	2.60	5.00	105.000	104.450	23.255	23.255	5.00	5.00	104.450	104.400	23.255	23.255	5.00	5.00	104.400	103.400	23.255	23.255	5.00	5.00	Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/14	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																							
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<table><tr><td>103.400</td><td>102.640</td><td>23.255</td><td>23.255</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.550</td><td>23.255</td><td>23.255</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>30.864</td><td>31.274</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>31.274</td><td>33.735</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>33.735</td><td>35.377</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>35.377</td><td>39.479</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.479</td><td>43.582</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>43.582</td><td>47.685</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>47.685</td><td>49.121</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.121</td><td>123.354</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.64</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.7</td><td>-16.0</td><td>-4.0</td><td>-98.6</td></tr><tr><td>106.95</td><td>-16.7</td><td>82.5</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.9</td><td>80.5</td><td>1.2</td><td></td></tr><tr><td>106.45</td><td>-33.4</td><td>66.5</td><td>33.2</td><td></td></tr><tr><td>106.20</td><td>-41.9</td><td>58.4</td><td>49.0</td><td></td></tr><tr><td>105.50</td><td>-65.2</td><td>36.0</td><td>81.9</td><td></td></tr><tr><td>105.45</td><td>-66.9</td><td>34.4</td><td>83.7</td><td></td></tr><tr><td>105.24</td><td>-73.9</td><td>27.2</td><td>90.1</td><td></td></tr><tr><td>105.00</td><td>-81.2</td><td>18.4</td><td>95.6</td><td></td></tr><tr><td>104.45</td><td>-97.1</td><td>0.4</td><td>100.8</td><td></td></tr><tr><td>104.40</td><td>-98.6</td><td>-1.2</td><td>100.8</td><td></td></tr><tr><td>103.40</td><td>-127.5</td><td>-34.0</td><td>83.2</td><td></td></tr><tr><td>102.64</td><td>-149.5</td><td>-58.8</td><td>48.0</td><td></td></tr><tr><td>102.55</td><td>-152.4</td><td>-61.8</td><td>42.5</td><td></td></tr><tr><td>102.45</td><td>-155.2</td><td>-65.8</td><td>36.2</td><td></td></tr><tr><td>101.85</td><td>-161.2</td><td>-74.0</td><td>-7.1</td><td></td></tr><tr><td>101.45</td><td>-158.9</td><td>-64.6</td><td>-35.2</td><td></td></tr><tr><td>100.45</td><td>-134.0</td><td>4.1</td><td>-69.0</td><td></td></tr><tr><td>99.45</td><td>-119.3</td><td>42.5</td><td>-40.6</td><td></td></tr><tr><td>98.45</td><td>-126.5</td><td>21.1</td><td>-3.9</td><td></td></tr><tr><td>98.10</td><td>-133.4</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.400	102.640	23.255	23.255	5.00	5.00	102.640	102.550	23.255	23.255	5.00	5.00	102.550	102.450	30.864	31.274	5.00	5.00	102.450	101.850	31.274	33.735	5.00	5.00	101.850	101.450	33.735	35.377	5.00	5.00	101.450	100.449	35.377	39.479	5.00	5.00	100.449	99.449	39.479	43.582	5.00	5.00	99.449	98.449	43.582	47.685	5.00	5.00	98.449	98.099	47.685	49.121	5.00	5.00	98.099	80.000	49.121	123.354	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.64	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.7	-16.0	-4.0	-98.6	106.95	-16.7	82.5	-4.0		106.89	-18.9	80.5	1.2		106.45	-33.4	66.5	33.2		106.20	-41.9	58.4	49.0		105.50	-65.2	36.0	81.9		105.45	-66.9	34.4	83.7		105.24	-73.9	27.2	90.1		105.00	-81.2	18.4	95.6		104.45	-97.1	0.4	100.8		104.40	-98.6	-1.2	100.8		103.40	-127.5	-34.0	83.2		102.64	-149.5	-58.8	48.0		102.55	-152.4	-61.8	42.5		102.45	-155.2	-65.8	36.2		101.85	-161.2	-74.0	-7.1		101.45	-158.9	-64.6	-35.2		100.45	-134.0	4.1	-69.0		99.45	-119.3	42.5	-40.6		98.45	-126.5	21.1	-3.9		98.10	-133.4	0.0	0.0	
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Dipl.-Ing. A. Forner



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<table><tr><td>101.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-4.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.59</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.59</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-4.4</td><td>0.79</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.3</td><td>0.79</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-4.3</td><td>1.60</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-4.2</td><td>1.60</td><td>6.82</td><td>10.36</td></tr><tr><td>101.90</td><td>-3.7</td><td>12.19</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-3.6</td><td>12.19</td><td>44.22</td><td>48.36</td></tr><tr><td>101.85</td><td>-3.6</td><td>13.33</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-3.6</td><td>13.33</td><td>47.61</td><td>51.81</td></tr><tr><td>101.50</td><td>-3.2</td><td>22.44</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.2</td><td>22.44</td><td>71.28</td><td>75.99</td></tr><tr><td>101.45</td><td>-3.2</td><td>23.93</td><td>76.00</td><td>75.99</td></tr><tr><td>101.40</td><td>-3.1</td><td>23.93</td><td>74.66</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.1</td><td>50.00</td><td>107.34</td><td>141.63</td></tr></table>						101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.5	-	-	-	107.40	-8.5	-	-	-	107.00	-8.2	-	-	-	106.95	-8.2	-	-	-	106.95	-8.2	-	-	-	106.89	-8.1	-	-	-	106.89	-8.1	-	-	-	106.84	-8.1	-	-	-	106.50	-7.9	-	-	-	106.45	-7.9	-	-	-	106.45	-7.9	-	-	-	106.40	-7.8	-	-	-	106.25	-7.7	-	-	-	106.20	-7.7	-	-	-	106.20	-7.7	-	-	-	106.15	-7.7	-	-	-	105.55	-7.2	-	-	-	105.50	-7.2	-	-	-	105.50	-7.2	-	-	-	105.45	-7.2	-	-	-	105.45	-7.2	-	-	-	105.40	-7.1	-	-	-	105.29	-7.0	-	-	-	105.24	-7.0	-	-	-	105.24	-7.0	-	-	-	105.19	-7.0	-	-	-	105.05	-6.9	-	-	-	105.00	-6.8	-	-	-	105.00	-6.8	-	-	-	104.95	-6.8	-	-	-	104.50	-6.4	-	-	-	104.45	-6.3	-	-	-	104.45	-6.3	-	-	-	104.40	-6.3	-	-	-	104.40	-6.3	-	-	-	104.35	-6.3	-	-	-	103.45	-5.4	-	-	-	103.40	-5.3	-	-	-	103.40	-5.3	-	-	-	103.35	-5.3	-	-	-	102.69	-4.6	-	-	-	102.64	-4.5	-	-	-	102.64	-4.5	-	-	-	102.59	-4.5	-	-	-	102.59	-4.5	-	-	-	102.55	-4.4	0.00	0.00	0.00	102.55	-4.4	0.00	0.00	0.00	102.50	-4.4	0.00	0.00	3.45	102.50	-4.4	0.79	3.45	3.45	102.45	-4.3	0.79	3.41	6.91	102.45	-4.3	1.60	6.91	6.91	102.40	-4.2	1.60	6.82	10.36	101.90	-3.7	12.19	44.91	44.91	101.85	-3.6	12.19	44.22	48.36	101.85	-3.6	13.33	48.36	48.36	101.80	-3.6	13.33	47.61	51.81	101.50	-3.2	22.44	72.54	72.54	101.45	-3.2	22.44	71.28	75.99	101.45	-3.2	23.93	76.00	75.99	101.40	-3.1	23.93	74.66	79.45	100.50	-2.1	50.00	107.34	141.63
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statisch geprüft
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Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																	
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<table><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>104.75</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>104.75</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.0</td><td>50.00</td><td>102.17</td><td>148.53</td></tr><tr><td>99.50</td><td>-1.2</td><td>50.00</td><td>57.76</td><td>210.71</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>55.38</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>55.38</td><td>214.17</td></tr><tr><td>99.40</td><td>-1.1</td><td>50.00</td><td>53.02</td><td>217.62</td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>11.26</td><td>279.80</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.97</td><td>283.25</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.97</td><td>283.25</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>6.67</td><td>286.71</td></tr><tr><td>98.15</td><td>0.1</td><td>50.00</td><td>-4.80</td><td>303.98</td></tr><tr><td>98.10</td><td>0.1</td><td>50.00</td><td>-7.09</td><td>307.43</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05253874 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 53.80 kN/m (Eah,k = 303.36 kN/m) Bv,k = 101.08 Summe V,k = 129.65 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 61.87 + 0.00 = 274.19 kN/m ==> µ = V,d / Rd = 274.19 / 1039.87 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.45	-2.1	50.00	104.75	145.08	100.45	-2.1	50.00	104.75	145.08	100.40	-2.0	50.00	102.17	148.53	99.50	-1.2	50.00	57.76	210.71	99.45	-1.1	50.00	55.38	214.17	99.45	-1.1	50.00	55.38	214.17	99.40	-1.1	50.00	53.02	217.62	98.50	-0.2	50.00	11.26	279.80	98.45	-0.2	50.00	8.97	283.25	98.45	-0.2	50.00	8.97	283.25	98.40	-0.1	50.00	6.67	286.71	98.15	0.1	50.00	-4.80	303.98	98.10	0.1	50.00	-7.09	307.43
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Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/18																																																																	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 13_BS3_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.68 104.92 nein Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad mue = 318.712 / 402.297 = 0.792 Bettungslager Bh,d = 318.712 kN/m Erdwiderstand Eph,d = 402.297 kN/m</div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/19
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																														
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-123.69</td><td>-107.21</td><td>-107.21</td><td>-8.08</td><td>6.900E+4</td><td>2.100E+7</td><td>-136.69</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.0</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.2</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.2</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.3</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-8.5</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.6</td><td>0.1</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-9.8</td><td>0.1</td><td>-123.69</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 3\Rechtes Ufer\10_BS 3_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <table><tr><td>Anker/Steife</td><td>Tiefe</td><td>Vorverformung</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0069</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>107.448</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>105.680</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>105.680</td><td>105.500</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>34.094</td><td>34.094</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.240</td><td>34.094</td><td>34.094</td><td>0.50</td><td>2.60</td></tr><tr><td>105.240</td><td>105.000</td><td>34.094</td><td>34.094</td><td>2.60</td><td>5.00</td></tr><tr><td>105.000</td><td>104.915</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-123.69	-107.21	-107.21	-8.08	6.900E+4	2.100E+7	-136.69	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.0	0.0	-123.69	0.00	0.00	-0.90	106.95	-8.2	0.0	-123.69	0.00	0.00	-0.90	106.95	-8.2	0.0	-123.69	0.00	0.00	-0.80	106.95	-8.3	0.0	-123.69	0.00	0.00	-0.70	106.95	-8.5	0.0	-123.69	0.00	0.00	-0.60	106.95	-8.7	0.0	-123.69	0.00	0.00	-0.50	106.95	-8.9	0.0	-123.69	0.00	0.00	-0.40	106.95	-9.1	0.0	-123.69	0.00	0.00	-0.30	106.95	-9.2	0.0	-123.69	0.00	0.00	-0.20	106.95	-9.4	0.0	-123.69	0.00	0.00	-0.10	106.95	-9.6	0.1	-123.69	0.00	0.00	0.00	106.95	-9.8	0.1	-123.69	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0069	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	34.094	34.094	0.00	0.00	107.448	106.950	34.094	34.094	0.00	0.00	106.950	106.886	34.094	34.094	0.00	0.00	106.886	106.450	34.094	34.094	0.00	0.00	106.450	106.198	34.094	34.094	0.00	0.00	106.198	105.680	34.094	34.094	0.00	0.00	105.680	105.500	34.094	34.094	0.00	0.00	105.500	105.450	34.094	34.094	0.00	0.50	105.450	105.240	34.094	34.094	0.50	2.60	105.240	105.000	34.094	34.094	2.60	5.00	105.000	104.915	28.411	28.411	5.00	5.00	Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/20	
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1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																																																										
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<table><tr><td>104.915</td><td>104.450</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.300</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.640</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.550</td><td>28.411</td><td>28.411</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>34.430</td><td>34.840</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>34.840</td><td>37.302</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>37.302</td><td>38.943</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.943</td><td>43.046</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>43.046</td><td>47.149</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>47.149</td><td>51.251</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>51.251</td><td>52.687</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.687</td><td>126.921</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.64</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-18.0</td><td>-19.6</td><td>-4.9</td><td>-123.7</td></tr><tr><td>106.95</td><td>-18.0</td><td>104.1</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.3</td><td>101.6</td><td>1.7</td><td></td></tr><tr><td>106.45</td><td>-36.0</td><td>84.5</td><td>42.2</td><td></td></tr><tr><td>106.20</td><td>-45.1</td><td>74.6</td><td>62.3</td><td></td></tr><tr><td>105.68</td><td>-63.8</td><td>54.3</td><td>95.7</td><td></td></tr><tr><td>105.50</td><td>-70.3</td><td>47.2</td><td>104.8</td><td></td></tr><tr><td>105.45</td><td>-72.1</td><td>45.3</td><td>107.1</td><td></td></tr><tr><td>105.24</td><td>-79.6</td><td>36.6</td><td>115.7</td><td></td></tr><tr><td>105.00</td><td>-87.4</td><td>26.1</td><td>123.3</td><td></td></tr><tr><td>104.92</td><td>-90.0</td><td>22.9</td><td>125.4</td><td></td></tr><tr><td>104.45</td><td>-104.2</td><td>4.9</td><td>131.8</td><td></td></tr><tr><td>104.30</td><td>-108.8</td><td>-0.9</td><td>132.1</td><td></td></tr><tr><td>103.40</td><td>-136.2</td><td>-35.7</td><td>115.6</td><td></td></tr><tr><td>102.64</td><td>-159.4</td><td>-65.1</td><td>77.3</td><td></td></tr><tr><td>102.55</td><td>-162.5</td><td>-68.6</td><td>71.2</td><td></td></tr><tr><td>102.45</td><td>-165.4</td><td>-73.0</td><td>64.2</td><td></td></tr><tr><td>101.85</td><td>-171.4</td><td>-83.7</td><td>15.8</td><td></td></tr><tr><td>101.45</td><td>-169.1</td><td>-76.0</td><td>-16.5</td><td></td></tr><tr><td>100.45</td><td>-142.5</td><td>-7.0</td><td>-63.2</td><td></td></tr><tr><td>99.45</td><td>-122.5</td><td>40.6</td><td>-40.7</td><td></td></tr><tr><td>98.45</td><td>-127.0</td><td>21.8</td><td>-4.1</td><td></td></tr><tr><td>98.10</td><td>-133.8</td><td>0.0</td><td>0.0</td><td></td></tr></table>								104.915	104.450	28.411	28.411	5.00	5.00	104.450	104.300	28.411	28.411	5.00	5.00	104.300	103.400	28.411	28.411	5.00	5.00	103.400	102.640	28.411	28.411	5.00	5.00	102.640	102.550	28.411	28.411	5.00	5.00	102.550	102.450	34.430	34.840	5.00	5.00	102.450	101.850	34.840	37.302	5.00	5.00	101.850	101.450	37.302	38.943	5.00	5.00	101.450	100.449	38.943	43.046	5.00	5.00	100.449	99.449	43.046	47.149	5.00	5.00	99.449	98.449	47.149	51.251	5.00	5.00	98.449	98.099	51.251	52.687	5.00	5.00	98.099	80.000	52.687	126.921	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.64	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-18.0	-19.6	-4.9	-123.7	106.95	-18.0	104.1	-4.9		106.89	-20.3	101.6	1.7		106.45	-36.0	84.5	42.2		106.20	-45.1	74.6	62.3		105.68	-63.8	54.3	95.7		105.50	-70.3	47.2	104.8		105.45	-72.1	45.3	107.1		105.24	-79.6	36.6	115.7		105.00	-87.4	26.1	123.3		104.92	-90.0	22.9	125.4		104.45	-104.2	4.9	131.8		104.30	-108.8	-0.9	132.1		103.40	-136.2	-35.7	115.6		102.64	-159.4	-65.1	77.3		102.55	-162.5	-68.6	71.2		102.45	-165.4	-73.0	64.2		101.85	-171.4	-83.7	15.8		101.45	-169.1	-76.0	-16.5		100.45	-142.5	-7.0	-63.2		99.45	-122.5	40.6	-40.7		98.45	-127.0	21.8	-4.1		98.10	-133.8	0.0	0.0	
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Statisch geprüft

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Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																											
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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.73</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.68</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.68</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.63</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.54</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.86</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr></table>						105.00	0.0	0.0	0.0	104.92	0.0	0.0	0.0	104.45	0.0	0.0	0.0	104.30	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.64	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.45	0.0	0.0	0.0	101.85	0.0	0.0	0.0	101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.8	-	-	-	107.45	-8.8	-	-	-	107.45	-8.8	-	-	-	107.40	-8.7	-	-	-	107.00	-8.5	-	-	-	106.95	-8.5	-	-	-	106.95	-8.5	-	-	-	106.84	-8.4	-	-	-	106.50	-8.3	-	-	-	106.45	-8.2	-	-	-	106.45	-8.2	-	-	-	106.40	-8.2	-	-	-	106.20	-8.1	-	-	-	106.20	-8.1	-	-	-	106.15	-8.1	-	-	-	105.73	-7.8	-	-	-	105.68	-7.8	-	-	-	105.68	-7.8	-	-	-	105.63	-7.7	-	-	-	105.54	-7.7	-	-	-	105.50	-7.6	-	-	-	105.50	-7.6	-	-	-	105.45	-7.6	-	-	-	105.45	-7.6	-	-	-	105.40	-7.6	-	-	-	105.29	-7.5	-	-	-	105.24	-7.5	-	-	-	105.24	-7.5	-	-	-	105.19	-7.4	-	-	-	105.05	-7.3	-	-	-	105.00	-7.3	-	-	-	105.00	-7.3	-	-	-	104.95	-7.3	-	-	-	104.95	-7.3	-	-	-	104.92	-7.2	-	-	-	104.92	-7.2	-	-	-	104.86	-7.2	-	-	-	104.50	-6.9	-	-	-	104.45	-6.9	-	-	-	104.45	-6.9	-	-	-	104.40	-6.8	-	-	-	104.35	-6.8	-	-	-	104.30	-6.7	-	-	-	104.30	-6.7	-	-	-	104.25	-6.7	-	-	-	103.45	-5.9	-	-	-	103.40	-5.8	-	-	-	103.40	-5.8	-	-	-	103.35	-5.8	-	-	-	102.69	-5.1	-	-	-	102.64	-5.0	-	-	-	102.64	-5.0	-	-	-
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statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																											
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<table><tr><td>102.59</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.59</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-4.8</td><td>0.71</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.8</td><td>0.71</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-4.8</td><td>1.44</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-4.7</td><td>1.44</td><td>6.82</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.1</td><td>10.90</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-4.1</td><td>10.90</td><td>44.24</td><td>48.36</td></tr><tr><td>101.85</td><td>-4.1</td><td>11.91</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-4.0</td><td>11.91</td><td>47.64</td><td>51.81</td></tr><tr><td>101.50</td><td>-3.6</td><td>19.96</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.6</td><td>19.96</td><td>71.33</td><td>75.99</td></tr><tr><td>101.45</td><td>-3.6</td><td>21.27</td><td>76.00</td><td>75.99</td></tr><tr><td>101.40</td><td>-3.5</td><td>21.27</td><td>74.70</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.4</td><td>50.00</td><td>122.16</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>119.29</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>119.29</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.3</td><td>50.00</td><td>116.42</td><td>148.53</td></tr><tr><td>99.50</td><td>-1.3</td><td>50.00</td><td>66.77</td><td>210.71</td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>64.10</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>64.10</td><td>214.17</td></tr><tr><td>99.40</td><td>-1.2</td><td>50.00</td><td>61.44</td><td>217.62</td></tr><tr><td>98.50</td><td>-0.3</td><td>50.00</td><td>14.42</td><td>279.80</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>11.83</td><td>283.25</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>11.83</td><td>283.25</td></tr><tr><td>98.40</td><td>-0.2</td><td>50.00</td><td>9.25</td><td>286.71</td></tr><tr><td>98.15</td><td>0.1</td><td>50.00</td><td>-3.68</td><td>303.98</td></tr><tr><td>98.10</td><td>0.1</td><td>50.00</td><td>-6.26</td><td>307.43</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05922102 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 61.38 kN/m (Eah,k = 347.03 kN/m) Bv,k = 109.69 Summe V,k = 128.62 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 70.59 + 0.00 = 282.90 kN/m ==> µ = V,d / Rd = 282.90 / 1039.87 = 0.27</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.59	-5.0	-	-	-	102.59	-5.0	-	-	-	102.55	-4.9	0.00	0.00	0.00	102.55	-4.9	0.00	0.00	0.00	102.50	-4.8	0.00	0.00	3.45	102.50	-4.8	0.71	3.45	3.45	102.45	-4.8	0.71	3.41	6.91	102.45	-4.8	1.44	6.91	6.91	102.40	-4.7	1.44	6.82	10.36	101.90	-4.1	10.90	44.91	44.91	101.85	-4.1	10.90	44.24	48.36	101.85	-4.1	11.91	48.36	48.36	101.80	-4.0	11.91	47.64	51.81	101.50	-3.6	19.96	72.54	72.54	101.45	-3.6	19.96	71.33	75.99	101.45	-3.6	21.27	76.00	75.99	101.40	-3.5	21.27	74.70	79.45	100.50	-2.4	50.00	122.16	141.63	100.45	-2.4	50.00	119.29	145.08	100.45	-2.4	50.00	119.29	145.08	100.40	-2.3	50.00	116.42	148.53	99.50	-1.3	50.00	66.77	210.71	99.45	-1.3	50.00	64.10	214.17	99.45	-1.3	50.00	64.10	214.17	99.40	-1.2	50.00	61.44	217.62	98.50	-0.3	50.00	14.42	279.80	98.45	-0.2	50.00	11.83	283.25	98.45	-0.2	50.00	11.83	283.25	98.40	-0.2	50.00	9.25	286.71	98.15	0.1	50.00	-3.68	303.98	98.10	0.1	50.00	-6.26	307.43
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																											

Statisch geprüft für

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 14_BS 3_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.70 108.70 108.69 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.70 108.70 108.70 106.64 105.74 ja</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
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Standicherheit
Dipl.-Ing. A. Forner

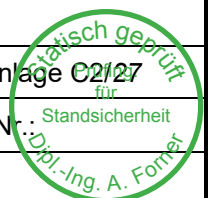
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																								
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																								
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 164.865 / 275.516 = 0.598$</div> <div>Bettungslager $B_{h,d} = 164.865 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 275.516 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>Nw,k kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N,d</td><td>$N(g+q+w),k$</td><td>$N(g+w),k$</td><td>Nw,k</td><td>EA</td><td>EI</td><td>$N_{d'}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-366.61</td><td>-306.40</td><td>-225.10</td><td>-49.56</td><td>3.900E+7</td><td>2.100E+7</td><td>-408.96</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><td>x</td><td>y</td><td>$w_{x,d}$</td><td>$w_{y,d}$</td><td>N,d</td><td>$Q_{d'}$</td><td>$M_{d'}$</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-6.6</td><td>0.0</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-6.6</td><td>0.1</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-6.6</td><td>0.1</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-6.6</td><td>0.1</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-6.6</td><td>0.1</td><td>-367.04</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0057</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{m',k}$</td><td>$\phi_{i,k}$</td><td>$c(pas),k$</td><td>$c(akt),k$</td><td>$d(p)/\phi_i$</td><td>$d(a)/\phi_i$</td><td>q_c</td><td>$c_{u,k}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table></div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td><td>$k_{agh}(40^\circ)$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.700</td><td>108.698</td><td>0.000</td><td>14.416</td><td>0.00</td></tr><tr><td>108.698</td><td>108.694</td><td>14.416</td><td>19.528</td><td>0.00</td></tr><tr><td>108.694</td><td>107.700</td><td>19.528</td><td>26.888</td><td>0.00</td></tr><tr><td>107.700</td><td>107.450</td><td>26.888</td><td>28.739</td><td>0.00</td></tr></table></div>			Nr.	y	Neigung	Länge	N,d	$N(g+q+w),k$	$N(g+w),k$	Nw,k	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-366.61	-306.40	-225.10	-49.56	3.900E+7	2.100E+7	-408.96	x	y	$w_{x,d}$	$w_{y,d}$	N,d	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-6.6	0.0	-367.04	0.00	0.00	-7.47	103.72	-6.6	0.0	-367.04	0.00	0.00	-7.47	103.72	-6.6	0.0	-367.04	0.00	0.00	-6.64	103.72	-6.6	0.0	-367.04	0.00	0.00	-5.81	103.72	-6.6	0.0	-367.04	0.00	0.00	-4.98	103.72	-6.6	0.0	-367.04	0.00	0.00	-4.15	103.72	-6.6	0.0	-367.04	0.00	0.00	-3.32	103.72	-6.6	0.0	-367.04	0.00	0.00	-2.49	103.72	-6.6	0.1	-367.04	0.00	0.00	-1.66	103.72	-6.6	0.1	-367.04	0.00	0.00	-0.83	103.72	-6.6	0.1	-367.04	0.00	0.00	0.00	103.72	-6.6	0.1	-367.04	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0057	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	108.700	108.698	0.000	14.416	0.00	108.698	108.694	14.416	19.528	0.00	108.694	107.700	19.528	26.888	0.00	107.700	107.450	26.888	28.739	0.00	<div>Schnitt: Anlage C2 Schnitt 3R</div> <div>Kapitel: 5 LF 3 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungstatik</div>	<div>Seite Anlage C2/26</div> <div>Archiv Nr. 26</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N,d	$N(g+q+w),k$	$N(g+w),k$	Nw,k	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																																
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<table><tr><td>107.450</td><td>106.700</td><td>28.739</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.700</td><td>106.644</td><td>34.292</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.644</td><td>105.737</td><td>34.710</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>105.737</td><td>105.700</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.700</td><td>105.500</td><td>26.109</td><td>27.589</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>27.589</td><td>28.603</td><td>0.00</td><td>2.60</td></tr><tr><td>105.240</td><td>104.650</td><td>35.080</td><td>37.590</td><td>2.60</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>37.590</td><td>41.547</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>41.547</td><td>41.845</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.640</td><td>41.845</td><td>46.143</td><td>18.50</td><td>28.60</td></tr><tr><td>102.640</td><td>102.550</td><td>34.061</td><td>34.430</td><td>28.60</td><td>29.50</td></tr><tr><td>102.550</td><td>101.700</td><td>34.430</td><td>37.917</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.917</td><td>42.020</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>42.020</td><td>46.123</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>46.123</td><td>50.226</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>50.226</td><td>52.687</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.687</td><td>126.921</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.64</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.70</td><td>0.00</td><td>-36.14</td></tr><tr><td>101.70</td><td>100.70</td><td>-36.14</td><td>-78.65</td></tr><tr><td>100.70</td><td>99.70</td><td>-78.65</td><td>-121.17</td></tr><tr><td>99.70</td><td>98.70</td><td>-121.17</td><td>-163.68</td></tr><tr><td>98.70</td><td>98.10</td><td>-163.68</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.70</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-40.9</td><td>-37.5</td><td>-22.0</td><td></td></tr><tr><td>107.45</td><td>-95.5</td><td>-37.5</td><td>-57.0</td><td></td></tr><tr><td>106.70</td><td>-122.3</td><td>-66.5</td><td>-95.7</td><td></td></tr><tr><td>106.64</td><td>-124.4</td><td>-68.8</td><td>-99.5</td><td></td></tr><tr><td>105.74</td><td>-156.0</td><td>-101.5</td><td>-177.6</td><td></td></tr><tr><td>105.70</td><td>-157.2</td><td>-102.6</td><td>-181.3</td><td></td></tr><tr><td>105.50</td><td>-163.8</td><td>-108.7</td><td>-202.4</td><td></td></tr><tr><td>105.24</td><td>-172.6</td><td>-117.6</td><td>-231.8</td><td></td></tr><tr><td>104.65</td><td>-192.0</td><td>-146.1</td><td>-309.3</td><td></td></tr><tr><td>103.72</td><td>-223.6</td><td>-203.1</td><td>-470.6</td><td>-367.0</td></tr><tr><td>103.72</td><td>-223.6</td><td>163.9</td><td>-470.6</td><td></td></tr><tr><td>103.65</td><td>-226.0</td><td>159.0</td><td>-459.3</td><td></td></tr><tr><td>102.64</td><td>-261.7</td><td>79.4</td><td>-337.5</td><td></td></tr><tr><td>102.55</td><td>-265.1</td><td>72.7</td><td>-330.6</td><td></td></tr><tr><td>101.70</td><td>-273.8</td><td>63.6</td><td>-276.4</td><td></td></tr><tr><td>100.70</td><td>-262.5</td><td>100.7</td><td>-194.2</td><td></td></tr><tr><td>99.70</td><td>-265.5</td><td>96.8</td><td>-91.3</td><td></td></tr><tr><td>98.70</td><td>-283.2</td><td>48.4</td><td>-15.2</td><td></td></tr><tr><td>98.10</td><td>-291.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	106.700	28.739	34.292	0.00	0.00	106.700	106.644	34.292	34.710	0.00	0.00	106.644	105.737	34.710	25.836	0.00	0.00	105.737	105.700	25.836	26.109	0.00	0.00	105.700	105.500	26.109	27.589	0.00	0.00	105.500	105.240	27.589	28.603	0.00	2.60	105.240	104.650	35.080	37.590	2.60	8.50	104.650	103.720	37.590	41.547	8.50	17.80	103.720	103.650	41.547	41.845	17.80	18.50	103.650	102.640	41.845	46.143	18.50	28.60	102.640	102.550	34.061	34.430	28.60	29.50	102.550	101.700	34.430	37.917	0.00	0.00	101.700	100.699	37.917	42.020	0.00	0.00	100.699	99.699	42.020	46.123	0.00	0.00	99.699	98.699	46.123	50.226	0.00	0.00	98.699	98.099	50.226	52.687	0.00	0.00	98.099	80.000	52.687	126.921	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.64	102.55	0.00	0.00	102.55	101.70	0.00	-36.14	101.70	100.70	-36.14	-78.65	100.70	99.70	-78.65	-121.17	99.70	98.70	-121.17	-163.68	98.70	98.10	-163.68	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.70	-0.1	0.0	0.0		108.69	-0.2	-0.1	0.0		107.70	-32.3	-29.0	-13.7		107.45	-40.9	-37.5	-22.0		107.45	-95.5	-37.5	-57.0		106.70	-122.3	-66.5	-95.7		106.64	-124.4	-68.8	-99.5		105.74	-156.0	-101.5	-177.6		105.70	-157.2	-102.6	-181.3		105.50	-163.8	-108.7	-202.4		105.24	-172.6	-117.6	-231.8		104.65	-192.0	-146.1	-309.3		103.72	-223.6	-203.1	-470.6	-367.0	103.72	-223.6	163.9	-470.6		103.65	-226.0	159.0	-459.3		102.64	-261.7	79.4	-337.5		102.55	-265.1	72.7	-330.6		101.70	-273.8	63.6	-276.4		100.70	-262.5	100.7	-194.2		99.70	-265.5	96.8	-91.3		98.70	-283.2	48.4	-15.2		98.10	-291.2	0.0	0.0	
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Dipl.-Ing. A. Forner



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103.72	-14.2	-39.1	-145.1	-89.8																																																																																																																																																																																																																																																																																																																																								
103.72	-14.2	42.2	-145.1																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/28																																																																																																																																																																																																																																																																																																																																										
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.65 -14.2 42.2 -142.1 102.64 -14.2 42.2 -99.5 102.55 -14.2 42.2 -95.7 101.70 -15.3 39.5 -60.5 100.70 -20.8 25.8 -27.3 99.70 -26.1 12.5 -8.5 98.70 -28.8 3.3 -0.9 98.10 -27.4 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] </div> </div> <div> 108.70 -21.1 - - 108.70 -21.1 - - 108.70 -21.1 - - 108.69 -21.1 - - 108.69 -21.1 - - 108.64 -20.9 - - 107.75 -17.9 - - 107.70 -17.7 - - 107.70 -17.7 - - 107.65 -17.6 - - 107.50 -17.1 - - 107.45 -16.9 - - 107.45 -16.9 - - 107.40 -16.7 - - 106.75 -14.6 - - 106.70 -14.4 - - 106.70 -14.4 - - 106.64 -14.2 - - 106.64 -14.2 - - 106.59 -14.1 - - 105.79 -11.5 - - 105.74 -11.3 - - 105.74 -11.3 - - 105.70 -11.2 - - 105.70 -11.2 - - 105.65 -11.0 - - 105.55 -10.7 - - 105.50 -10.6 - - 105.50 -10.6 - - 105.45 -10.4 - - 105.29 -10.0 - - 105.24 -9.8 - - 105.24 -9.8 - - 105.20 -9.7 - - 104.70 -8.2 - - 104.65 -8.1 - - 104.65 -8.1 - - 104.60 -8.0 - - 103.77 -5.9 - - 103.72 -5.8 - - 103.72 -5.8 - - 103.70 -5.7 - - 103.70 -5.7 - - 103.65 -5.6 - - 103.65 -5.6 - - 103.60 -5.5 - - 102.70 -3.8 - - 102.64 -3.7 - - 102.64 -3.7 - - 102.59 -3.6 - - 102.59 -3.6 - - 102.55 -3.5 0.00 0.00 0.00 102.55 -3.5 0.00 0.00 0.00 102.50 -3.5 0.00 0.00 3.45 101.75 -2.4 23.17 55.27 55.27 101.70 -2.3 23.17 53.82 58.72 101.70 -2.3 25.28 58.72 58.72 101.65 -2.3 25.28 57.17 62.18 </div>		
Schnitt:	Anlage C2 Schnitt 3R	Seite Anlage C2/29
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<div style="text-align: center;"> <p>100.75 -1.3 50.00 65.30 124.35 100.70 -1.3 50.00 63.04 127.81 100.70 -1.3 50.00 63.04 127.81 100.65 -1.2 50.00 60.80 131.26 99.75 -0.5 50.00 25.56 193.44 99.70 -0.5 50.00 23.81 196.89 99.70 -0.5 50.00 23.81 196.89 99.65 -0.4 50.00 22.09 200.35 98.75 0.1 50.00 -7.05 262.53 98.70 0.2 50.00 -8.61 265.98 98.70 0.2 50.00 -8.61 265.98 98.65 0.2 50.00 -10.16 269.43 98.15 0.5 50.00 -25.61 303.98 98.10 0.5 50.00 -27.16 307.43</p> </div> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k} = -0.03535364$ Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 10.60 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 200.58 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 45.50 \text{ kN/m}$ $E_{av,k} = 70.92 \text{ kN/m}$ ($E_{ah,k} = 399.33 \text{ kN/m}$) $B_{v,k} = 58.98$ Summe V,k = 258.03 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.10 55.00 s3: Flusss Kies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 240.70 - 0.00 + 82.63 + 54.60 = 377.93 \text{ kN/m}$ ==> $\mu = V_{,d} / R_{,d} = 377.93 / 1039.87 = 0.36$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt:	Anlage C2 Schnitt 3R	Seite Anlage C2/30
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2103
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 15_BS 3_LF4 (5 kN_m², BS-P)).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.70 108.70 108.69 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/31
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																							
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																							
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 250.593 / 319.519 = 0.784$</div> <div>Bettungslager $B_{h,d} = 250.593 \text{ kN/m}$</div> <div>Erddwiderstand $E_{ph,d} = 319.519 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>$N_{d'}$</td><td>$N(g+q+w),k$</td><td>$N(g+w),k$</td><td>$N_{w,k}$</td><td>EA</td><td>EI</td><td>$N_{d'}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-251.62</td><td>-194.93</td><td>-194.93</td><td>-49.69</td><td>3.900E+7</td><td>2.100E+7</td><td>-248.54</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><td>x</td><td>y</td><td>$w_{x,d}$</td><td>$w_{y,d}$</td><td>$N_{d'}$</td><td>$Q_{d'}$</td><td>$M_{d'}$</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-7.3</td><td>0.0</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-7.3</td><td>0.1</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-7.3</td><td>0.1</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-7.3</td><td>0.1</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-7.3</td><td>0.1</td><td>-252.27</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0057</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{m',k}$</td><td>$\phi_{i,k}$</td><td>$c(pas),k$</td><td>$c(akt),k$</td><td>$d(p)/\phi_i$</td><td>$d(a)/\phi_i$</td><td>q_c</td><td>$c_{u,k}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.24</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.64</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table></div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td><td>$k_{agh}(40^\circ)$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.700</td><td>108.694</td><td>0.000</td><td>1.992</td><td>0.00</td></tr><tr><td>108.694</td><td>107.700</td><td>1.992</td><td>9.352</td><td>0.00</td></tr><tr><td>107.700</td><td>107.450</td><td>9.352</td><td>11.203</td><td>0.00</td></tr><tr><td>107.450</td><td>106.700</td><td>11.203</td><td>16.756</td><td>0.00</td></tr></table></div>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-251.62	-194.93	-194.93	-49.69	3.900E+7	2.100E+7	-248.54	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-7.3	0.0	-252.27	0.00	0.00	-7.47	103.72	-7.3	0.0	-252.27	0.00	0.00	-7.47	103.72	-7.3	0.0	-252.27	0.00	0.00	-6.64	103.72	-7.3	0.0	-252.27	0.00	0.00	-5.81	103.72	-7.3	0.0	-252.27	0.00	0.00	-4.98	103.72	-7.3	0.0	-252.27	0.00	0.00	-4.15	103.72	-7.3	0.0	-252.27	0.00	0.00	-3.32	103.72	-7.3	0.0	-252.27	0.00	0.00	-2.49	103.72	-7.3	0.1	-252.27	0.00	0.00	-1.66	103.72	-7.3	0.1	-252.27	0.00	0.00	-0.83	103.72	-7.3	0.1	-252.27	0.00	0.00	0.00	103.72	-7.3	0.1	-252.27	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0057	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	105.24	0.390	0.461	30.000	10.00	57.80	0.179	2	102.64	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	108.700	108.694	0.000	1.992	0.00	108.694	107.700	1.992	9.352	0.00	107.700	107.450	9.352	11.203	0.00	107.450	106.700	11.203	16.756	0.00	<div>Seite Anlage C2/32</div> <div>Archiv Nr.:</div>
Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																															
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<table><tr><td>106.700</td><td>105.650</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>24.530</td><td>25.641</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>25.641</td><td>26.654</td><td>0.00</td><td>2.60</td></tr><tr><td>105.240</td><td>104.650</td><td>32.577</td><td>35.087</td><td>2.60</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>35.087</td><td>39.044</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>39.044</td><td>39.342</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.640</td><td>39.342</td><td>43.640</td><td>18.50</td><td>28.60</td></tr><tr><td>102.640</td><td>102.550</td><td>32.278</td><td>32.647</td><td>28.60</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>32.647</td><td>34.493</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.700</td><td>34.493</td><td>36.134</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>36.134</td><td>40.237</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>40.237</td><td>44.340</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>44.340</td><td>48.442</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>48.442</td><td>50.904</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.904</td><td>125.137</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.64</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-11.33</td><td>-29.09</td></tr><tr><td>102.10</td><td>101.70</td><td>-29.09</td><td>-44.88</td></tr><tr><td>101.70</td><td>100.70</td><td>-44.88</td><td>-84.36</td></tr><tr><td>100.70</td><td>99.70</td><td>-84.36</td><td>-123.84</td></tr><tr><td>99.70</td><td>98.70</td><td>-123.84</td><td>-163.31</td></tr><tr><td>98.70</td><td>98.10</td><td>-163.31</td><td>-187.00</td></tr><tr><td>98.10</td><td>80.00</td><td>-187.00</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-34.0</td><td>-10.5</td><td>-5.0</td><td></td></tr><tr><td>107.45</td><td>-95.4</td><td>-10.5</td><td>-44.3</td><td></td></tr><tr><td>106.70</td><td>-118.4</td><td>-23.8</td><td>-56.8</td><td></td></tr><tr><td>105.65</td><td>-153.8</td><td>-51.5</td><td>-95.4</td><td></td></tr><tr><td>105.50</td><td>-159.1</td><td>-56.3</td><td>-103.5</td><td></td></tr><tr><td>105.24</td><td>-168.6</td><td>-65.4</td><td>-119.3</td><td></td></tr><tr><td>104.65</td><td>-189.6</td><td>-95.3</td><td>-166.4</td><td></td></tr><tr><td>103.72</td><td>-223.8</td><td>-155.7</td><td>-281.8</td><td>-252.3</td></tr><tr><td>103.72</td><td>-223.8</td><td>96.5</td><td>-281.8</td><td></td></tr><tr><td>103.65</td><td>-226.5</td><td>91.3</td><td>-275.3</td><td></td></tr><tr><td>102.64</td><td>-265.1</td><td>5.8</td><td>-224.6</td><td></td></tr><tr><td>102.55</td><td>-268.8</td><td>-1.5</td><td>-224.4</td><td></td></tr><tr><td>102.10</td><td>-272.7</td><td>-2.9</td><td>-226.2</td><td></td></tr><tr><td>101.70</td><td>-269.7</td><td>10.8</td><td>-225.1</td><td></td></tr><tr><td>100.70</td><td>-247.9</td><td>77.3</td><td>-180.1</td><td></td></tr><tr><td>99.70</td><td>-244.9</td><td>91.3</td><td>-90.7</td><td></td></tr><tr><td>98.70</td><td>-261.7</td><td>49.7</td><td>-15.8</td><td></td></tr><tr><td>98.10</td><td>-271.5</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.700	105.650	16.756	24.530	0.00	0.00	105.650	105.500	24.530	25.641	0.00	0.00	105.500	105.240	25.641	26.654	0.00	2.60	105.240	104.650	32.577	35.087	2.60	8.50	104.650	103.720	35.087	39.044	8.50	17.80	103.720	103.650	39.044	39.342	17.80	18.50	103.650	102.640	39.342	43.640	18.50	28.60	102.640	102.550	32.278	32.647	28.60	29.50	102.550	102.100	32.647	34.493	0.00	0.00	102.100	101.700	34.493	36.134	0.00	0.00	101.700	100.699	36.134	40.237	0.00	0.00	100.699	99.699	40.237	44.340	0.00	0.00	99.699	98.699	44.340	48.442	0.00	0.00	98.699	98.099	48.442	50.904	0.00	0.00	98.099	80.000	50.904	125.137	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.64	102.55	0.00	0.00	102.55	102.10	-11.33	-29.09	102.10	101.70	-29.09	-44.88	101.70	100.70	-44.88	-84.36	100.70	99.70	-84.36	-123.84	99.70	98.70	-123.84	-163.31	98.70	98.10	-163.31	-187.00	98.10	80.00	-187.00	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.69	-0.1	0.0	0.0		107.70	-26.7	-7.2	-2.8		107.45	-34.0	-10.5	-5.0		107.45	-95.4	-10.5	-44.3		106.70	-118.4	-23.8	-56.8		105.65	-153.8	-51.5	-95.4		105.50	-159.1	-56.3	-103.5		105.24	-168.6	-65.4	-119.3		104.65	-189.6	-95.3	-166.4		103.72	-223.8	-155.7	-281.8	-252.3	103.72	-223.8	96.5	-281.8		103.65	-226.5	91.3	-275.3		102.64	-265.1	5.8	-224.6		102.55	-268.8	-1.5	-224.4		102.10	-272.7	-2.9	-226.2		101.70	-269.7	10.8	-225.1		100.70	-247.9	77.3	-180.1		99.70	-244.9	91.3	-90.7		98.70	-261.7	49.7	-15.8		98.10	-271.5	0.0	0.0	
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kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig.Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.70</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.64</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.65</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>19.82</td></tr><tr><td>102.50</td><td>-3.7</td><td>0.00</td><td>0.00</td><td>23.27</td></tr><tr><td>102.15</td><td>-3.2</td><td>14.81</td><td>47.46</td><td>47.45</td></tr><tr><td>102.10</td><td>-3.1</td><td>14.81</td><td>46.44</td><td>50.91</td></tr><tr><td>102.10</td><td>-3.1</td><td>16.24</td><td>50.91</td><td>50.91</td></tr><tr><td>102.05</td><td>-3.1</td><td>16.24</td><td>49.81</td><td>54.36</td></tr><tr><td>101.75</td><td>-2.7</td><td>28.05</td><td>75.09</td><td>75.09</td></tr><tr><td>101.70</td><td>-2.6</td><td>28.05</td><td>73.34</td><td>78.54</td></tr><tr><td>101.70</td><td>-2.6</td><td>30.04</td><td>78.55</td><td>78.54</td></tr><tr><td>101.65</td><td>-2.6</td><td>30.04</td><td>76.69</td><td>82.00</td></tr><tr><td>100.75</td><td>-1.6</td><td>50.00</td><td>78.23</td><td>144.17</td></tr><tr><td>100.70</td><td>-1.5</td><td>50.00</td><td>75.80</td><td>147.63</td></tr><tr><td>100.70</td><td>-1.5</td><td>50.00</td><td>75.80</td><td>147.63</td></tr><tr><td>100.65</td><td>-1.5</td><td>50.00</td><td>73.40</td><td>151.08</td></tr><tr><td>99.75</td><td>-0.7</td><td>50.00</td><td>34.57</td><td>213.26</td></tr><tr><td>99.70</td><td>-0.7</td><td>50.00</td><td>32.60</td><td>216.71</td></tr><tr><td>99.70</td><td>-0.7</td><td>50.00</td><td>32.60</td><td>216.71</td></tr></tbody></table></div>						Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.70	-17.2	-	-	-	108.70	-17.2	-	-	-	108.70	-17.2	-	-	-	108.69	-17.2	-	-	-	108.69	-17.2	-	-	-	108.64	-17.1	-	-	-	107.75	-14.9	-	-	-	107.70	-14.8	-	-	-	107.70	-14.8	-	-	-	107.65	-14.7	-	-	-	107.50	-14.3	-	-	-	107.45	-14.2	-	-	-	107.45	-14.2	-	-	-	107.40	-14.0	-	-	-	106.75	-12.5	-	-	-	106.70	-12.3	-	-	-	106.70	-12.3	-	-	-	106.65	-12.2	-	-	-	105.70	-10.0	-	-	-	105.65	-9.9	-	-	-	105.65	-9.9	-	-	-	105.60	-9.7	-	-	-	105.55	-9.6	-	-	-	105.50	-9.5	-	-	-	105.50	-9.5	-	-	-	105.45	-9.4	-	-	-	105.29	-9.0	-	-	-	105.24	-8.9	-	-	-	105.24	-8.9	-	-	-	105.20	-8.8	-	-	-	104.70	-7.7	-	-	-	104.65	-7.6	-	-	-	104.65	-7.6	-	-	-	104.60	-7.5	-	-	-	103.77	-5.8	-	-	-	103.72	-5.7	-	-	-	103.72	-5.7	-	-	-	103.70	-5.7	-	-	-	103.70	-5.7	-	-	-	103.65	-5.6	-	-	-	103.65	-5.6	-	-	-	103.60	-5.5	-	-	-	102.70	-4.0	-	-	-	102.64	-3.9	-	-	-	102.64	-3.9	-	-	-	102.60	-3.8	-	-	-	102.60	-3.8	-	-	-	102.55	-3.8	0.00	0.00	0.00	102.55	-3.8	0.00	0.00	19.82	102.50	-3.7	0.00	0.00	23.27	102.15	-3.2	14.81	47.46	47.45	102.10	-3.1	14.81	46.44	50.91	102.10	-3.1	16.24	50.91	50.91	102.05	-3.1	16.24	49.81	54.36	101.75	-2.7	28.05	75.09	75.09	101.70	-2.6	28.05	73.34	78.54	101.70	-2.6	30.04	78.55	78.54	101.65	-2.6	30.04	76.69	82.00	100.75	-1.6	50.00	78.23	144.17	100.70	-1.5	50.00	75.80	147.63	100.70	-1.5	50.00	75.80	147.63	100.65	-1.5	50.00	73.40	151.08	99.75	-0.7	50.00	34.57	213.26	99.70	-0.7	50.00	32.60	216.71	99.70	-0.7	50.00	32.60	216.71
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99.75	-0.7	50.00	34.57	213.26																																																																																																																																																																																																																																																																																																																																																
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Schnitt:		Anlage C2 Schnitt 3R		Seite Anlage C2/35																																																																																																																																																																																																																																																																																																																																																
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

<p> 99.65 -0.6 50.00 30.65 220.17 98.75 0.1 50.00 -2.68 282.34 98.70 0.1 50.00 -4.48 285.80 98.70 0.1 50.00 -4.48 285.80 98.65 0.1 50.00 -6.27 289.25 98.15 0.5 50.00 -24.10 323.80 98.10 0.5 50.00 -25.88 327.25 </p> <p> Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.04081023 Theoretischer Fußpunkt = 98.099 m </p> <p> Einbindetiefe t_g = 4.45 m Profillänge = 10.60 m </p> <p> Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$ $G_{v,k}$ = 200.58 kN/m $G'_{v,k}$ = 0.00 kN/m $P_{v,k}$ = 45.50 kN/m $E_{av,k}$ = 60.09 kN/m ($E_{ah,k}$ = 338.89 kN/m) $B_{v,k}$ = 78.25 Summe $V_{v,k}$ = 227.92 kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k}$ = 1.60 MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m </p> <p> Mantelreibung <table border="1"> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k}$ [kN/m²]</th> <th>Bezeichnung</th> </tr> <tr> <td>102.55</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m $R_{d,d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m </p> <p> Einwirkungen $V_{d,d} = G_{d,d} - G'_{v,k} + E_{av,d} + P_{v,d} = 270.79 - 0.00 + 76.62 + 61.43 = 408.83$ kN/m $\Rightarrow \mu = V_{d,d} / R_{d,d} = 408.83 / 1039.87 = 0.39$ </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>	von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung					
102.55	98.10	55.00	s3: Flussskies, -sand					

Schnitt: Anlage C2 Schnitt 3R	Seite Anlage C2/36
Kapitel: 6 LF 4 (BS-P, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 16_BS 3_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.70 108.70 108.69 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage C2 Schnitt 3R		Seite Anlage C2/37
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 225.464 / 352.734 = 0.639$
Bettungslager $B_{h,d} = 225.464 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 352.734 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-250.38	-215.94	-215.94	-49.69	3.900E+7	2.100E+7	-275.32 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-6.6	0.0	-250.81	0.00	0.00
-7.47	103.72	-6.6	0.0	-250.81	0.00	0.00
-7.47	103.72	-6.6	0.0	-250.81	0.00	0.00
-6.64	103.72	-6.6	0.0	-250.81	0.00	0.00
-5.81	103.72	-6.6	0.0	-250.81	0.00	0.00
-4.98	103.72	-6.6	0.0	-250.81	0.00	0.00
-4.15	103.72	-6.6	0.0	-250.81	0.00	0.00
-3.32	103.72	-6.6	0.0	-250.81	0.00	0.00
-2.49	103.72	-6.6	0.1	-250.81	0.00	0.00
-1.66	103.72	-6.6	0.1	-250.81	0.00	0.00
-0.83	103.72	-6.6	0.1	-250.81	0.00	0.00
0.00	103.72	-6.6	0.1	-250.81	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0057

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.24	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.64	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.24	0.390	0.461	30.000	10.00	57.80	0.179
2	102.64	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.700	108.694	0.000	3.941	0.00
108.694	107.700	3.941	11.301	0.00
107.700	107.450	11.301	13.152	0.00
107.450	106.700	13.152	18.705	0.00

Schnitt:	Anlage C2	Schnitt 3R	Seite Anlage C2/38
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																							
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<table><tr><td>106.700</td><td>105.650</td><td>18.705</td><td>26.479</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>26.479</td><td>27.589</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>27.589</td><td>28.603</td><td>0.00</td><td>2.60</td></tr><tr><td>105.240</td><td>104.650</td><td>35.080</td><td>37.590</td><td>2.60</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>37.590</td><td>41.547</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>41.547</td><td>41.845</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.640</td><td>41.845</td><td>46.143</td><td>18.50</td><td>28.60</td></tr><tr><td>102.640</td><td>102.550</td><td>34.061</td><td>34.430</td><td>28.60</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>34.430</td><td>36.276</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.700</td><td>36.276</td><td>37.917</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.917</td><td>42.020</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>42.020</td><td>46.123</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>46.123</td><td>50.226</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>50.226</td><td>52.687</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.687</td><td>126.921</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.64</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-12.20</td><td>-31.33</td></tr><tr><td>102.10</td><td>101.70</td><td>-31.33</td><td>-48.33</td></tr><tr><td>101.70</td><td>100.70</td><td>-48.33</td><td>-90.85</td></tr><tr><td>100.70</td><td>99.70</td><td>-90.85</td><td>-133.36</td></tr><tr><td>99.70</td><td>98.70</td><td>-133.36</td><td>-175.88</td></tr><tr><td>98.70</td><td>98.10</td><td>-175.88</td><td>-201.38</td></tr><tr><td>98.10</td><td>80.00</td><td>-201.38</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-31.7</td><td>-12.2</td><td>-6.2</td><td></td></tr><tr><td>107.45</td><td>-86.3</td><td>-12.2</td><td>-41.2</td><td></td></tr><tr><td>106.70</td><td>-107.6</td><td>-26.0</td><td>-55.2</td><td></td></tr><tr><td>105.65</td><td>-140.4</td><td>-53.3</td><td>-96.0</td><td></td></tr><tr><td>105.50</td><td>-145.3</td><td>-57.9</td><td>-104.3</td><td></td></tr><tr><td>105.24</td><td>-154.0</td><td>-66.7</td><td>-120.5</td><td></td></tr><tr><td>104.65</td><td>-173.5</td><td>-95.3</td><td>-168.0</td><td></td></tr><tr><td>103.72</td><td>-205.1</td><td>-152.3</td><td>-282.0</td><td>-250.8</td></tr><tr><td>103.72</td><td>-205.1</td><td>98.5</td><td>-282.0</td><td></td></tr><tr><td>103.65</td><td>-207.5</td><td>93.6</td><td>-275.3</td><td></td></tr><tr><td>102.64</td><td>-243.2</td><td>14.0</td><td>-219.5</td><td></td></tr><tr><td>102.55</td><td>-246.5</td><td>7.3</td><td>-218.5</td><td></td></tr><tr><td>102.10</td><td>-250.1</td><td>5.1</td><td>-216.5</td><td></td></tr><tr><td>101.70</td><td>-247.4</td><td>16.7</td><td>-212.5</td><td></td></tr><tr><td>100.70</td><td>-228.0</td><td>73.9</td><td>-166.3</td><td></td></tr><tr><td>99.70</td><td>-225.5</td><td>84.1</td><td>-82.8</td><td></td></tr><tr><td>98.70</td><td>-240.5</td><td>45.1</td><td>-14.3</td><td></td></tr><tr><td>98.10</td><td>-249.8</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.700	105.650	18.705	26.479	0.00	0.00	105.650	105.500	26.479	27.589	0.00	0.00	105.500	105.240	27.589	28.603	0.00	2.60	105.240	104.650	35.080	37.590	2.60	8.50	104.650	103.720	37.590	41.547	8.50	17.80	103.720	103.650	41.547	41.845	17.80	18.50	103.650	102.640	41.845	46.143	18.50	28.60	102.640	102.550	34.061	34.430	28.60	29.50	102.550	102.100	34.430	36.276	0.00	0.00	102.100	101.700	36.276	37.917	0.00	0.00	101.700	100.699	37.917	42.020	0.00	0.00	100.699	99.699	42.020	46.123	0.00	0.00	99.699	98.699	46.123	50.226	0.00	0.00	98.699	98.099	50.226	52.687	0.00	0.00	98.099	80.000	52.687	126.921	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.64	102.55	0.00	0.00	102.55	102.10	-12.20	-31.33	102.10	101.70	-31.33	-48.33	101.70	100.70	-48.33	-90.85	100.70	99.70	-90.85	-133.36	99.70	98.70	-133.36	-175.88	98.70	98.10	-175.88	-201.38	98.10	80.00	-201.38	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.69	-0.1	0.0	0.0		107.70	-24.9	-8.7	-3.6		107.45	-31.7	-12.2	-6.2		107.45	-86.3	-12.2	-41.2		106.70	-107.6	-26.0	-55.2		105.65	-140.4	-53.3	-96.0		105.50	-145.3	-57.9	-104.3		105.24	-154.0	-66.7	-120.5		104.65	-173.5	-95.3	-168.0		103.72	-205.1	-152.3	-282.0	-250.8	103.72	-205.1	98.5	-282.0		103.65	-207.5	93.6	-275.3		102.64	-243.2	14.0	-219.5		102.55	-246.5	7.3	-218.5		102.10	-250.1	5.1	-216.5		101.70	-247.4	16.7	-212.5		100.70	-228.0	73.9	-166.3		99.70	-225.5	84.1	-82.8		98.70	-240.5	45.1	-14.3		98.10	-249.8	0.0	0.0	
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3	-	-	-	107.70	-15.2	-	-	-	107.70	-15.2	-	-	-	107.65	-15.0	-	-	-	107.50	-14.6	-	-	-	107.45	-14.5	-	-	-	107.45	-14.5	-	-	-	107.40	-14.4	-	-	-	106.75	-12.7	-	-	-	106.70	-12.6	-	-	-	106.70	-12.6	-	-	-	106.65	-12.5	-	-	-	105.70	-10.1	-	-	-	105.65	-10.0	-	-	-	105.65	-10.0	-	-	-	105.60	-9.9	-	-	-	105.55	-9.8	-	-	-	105.50	-9.6	-	-	-	105.50	-9.6	-	-	-	105.45	-9.5	-	-	-	105.29	-9.2	-	-	-	105.24	-9.0	-	-	-	105.24	-9.0	-	-	-	105.20	-8.9	-	-	-	104.70	-7.8	-	-	-	104.65	-7.7	-	-	-	104.65	-7.7	-	-	-	104.60	-7.6	-	-	-	103.77	-5.8	-	-	-	103.72	-5.7	-	-	-	103.72	-5.7	-	-	-	103.70	-5.7	-	-	-	103.70	-5.7	-	-	-	103.65	-5.6	-	-	-	103.65	-5.6	-	-	-	103.60	-5.5	-	-	-	102.70	-4.0	-	-	-	102.64	-3.9	-	-	-	102.64	-3.9	-	-	-	102.60	-3.8	-	-	-	102.60	-3.8	-	-	-	102.55	-3.8	0.00	0.00	0.00	102.55	-3.8	0.00	0.00	19.82	102.50	-3.7	0.00	0.00	23.27	102.15	-3.2	14.95	47.46	47.45	102.10	-3.1	14.95	46.43	50.91	102.10	-3.1	16.39	50.91	50.91	102.05	-3.0	16.39	49.80	54.36	101.75	-2.6	28.36	75.09	75.09	101.70	-2.6	28.36	73.33	78.54	101.70	-2.6	30.37	78.55	78.54	101.65	-2.5	30.37	76.68	82.00	100.75	-1.5	50.00	77.35	144.17	100.70	-1.5	50.00	74.96	147.63	100.70	-1.5	50.00	74.96	147.63	100.65	-1.5	50.00	72.60	151.08	99.75	-0.7	50.00	34.57	213.26	99.70	-0.7	50.00	32.66	216.71	99.70	-0.7	50.00	32.66	216.71
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102.15	-3.2	14.95	47.46	47.45																																																																																																																																																																																																																																																																																																																																																
102.10	-3.1	14.95	46.43	50.91																																																																																																																																																																																																																																																																																																																																																
102.10	-3.1	16.39	50.91	50.91																																																																																																																																																																																																																																																																																																																																																
102.05	-3.0	16.39	49.80	54.36																																																																																																																																																																																																																																																																																																																																																
101.75	-2.6	28.36	75.09	75.09																																																																																																																																																																																																																																																																																																																																																
101.70	-2.6	28.36	73.33	78.54																																																																																																																																																																																																																																																																																																																																																
101.70	-2.6	30.37	78.55	78.54																																																																																																																																																																																																																																																																																																																																																
101.65	-2.5	30.37	76.68	82.00																																																																																																																																																																																																																																																																																																																																																
100.75	-1.5	50.00	77.35	144.17																																																																																																																																																																																																																																																																																																																																																
100.70	-1.5	50.00	74.96	147.63																																																																																																																																																																																																																																																																																																																																																
100.70	-1.5	50.00	74.96	147.63																																																																																																																																																																																																																																																																																																																																																
100.65	-1.5	50.00	72.60	151.08																																																																																																																																																																																																																																																																																																																																																
99.75	-0.7	50.00	34.57	213.26																																																																																																																																																																																																																																																																																																																																																
99.70	-0.7	50.00	32.66	216.71																																																																																																																																																																																																																																																																																																																																																
99.70	-0.7	50.00	32.66	216.71																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage C2 Schnitt 3R		Seite Anlage C2/41																																																																																																																																																																																																																																																																																																																																																
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 216.71																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.65</div><div>-0.6</div><div>50.00</div><div>30.75</div><div>220.17</div></div><div>98.75</div><div>0.0</div><div>50.00</div><div>-1.70</div><div>282.34</div><div>98.70</div><div>0.1</div><div>50.00</div><div>-3.44</div><div>285.80</div><div>98.70</div><div>0.1</div><div>50.00</div><div>-3.44</div><div>285.80</div><div>98.65</div><div>0.1</div><div>50.00</div><div>-5.18</div><div>289.25</div><div>98.15</div><div>0.5</div><div>50.00</div><div>-22.52</div><div>323.80</div><div>98.10</div><div>0.5</div><div>50.00</div><div>-24.25</div><div>327.25</div></div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03967358 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.60 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$ $G_{v,k} = 200.58 \text{ kN/m}$ $G'_{v,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 45.50 \text{ kN/m}$ $E_{av,k} = 63.80 \text{ kN/m}$ ($E_{ah,k} = 360.23 \text{ kN/m}$) $B_{v,k} = 78.03$ Summe $V_{v,k} = 231.86 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{d,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</div> <div>Einwirkungen $V_{d,d} = G_{d,d} - G'_{d,k} + E_{av,d} + P_{v,d} = 240.70 - 0.00 + 73.37 + 54.60 = 368.67 \text{ kN/m}$ $\Rightarrow \mu = V_{d,d} / R_{d,d} = 368.67 / 1039.87 = 0.35$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage C2 Schnitt 3R	Seite Anlage C2/42	
Kapitel: 7 LF 5 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025	
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage D2 Schnitt 4R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 10_BS 4_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.75</td><td>1.25</td><td>0.29</td><td>0.28</td><td>0.69</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.32</td><td>10.000</td><td>10.000</td></tr><tr><td>105.32</td><td>102.62</td><td>5.000</td><td>5.000</td></tr><tr><td>102.62</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 391.996 / 1248.052 = 0.314 Bettungslager Bh,d = 391.996 kN/m Erdwiderstand Eph,d = 1248.052 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.32	10.000	10.000	105.32	102.62	5.000	5.000	102.62	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.32	10.000	10.000																																														
105.32	102.62	5.000	5.000																																														
102.62	80.00	50.000	50.000																																														
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/11																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 119																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																		
<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.32</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.62</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.32</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>13.268</td><td>18.526</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>18.526</td><td>19.991</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>19.991</td><td>23.693</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.410</td><td>23.693</td><td>24.043</td><td>0.00</td><td>0.90</td></tr><tr><td>105.410</td><td>105.320</td><td>24.043</td><td>24.394</td><td>0.90</td><td>1.80</td></tr><tr><td>105.320</td><td>105.000</td><td>29.673</td><td>31.035</td><td>1.80</td><td>5.00</td></tr><tr><td>105.000</td><td>104.405</td><td>31.035</td><td>33.567</td><td>5.00</td><td>5.00</td></tr><tr><td>104.405</td><td>103.413</td><td>33.567</td><td>37.786</td><td>5.00</td><td>5.00</td></tr><tr><td>103.413</td><td>102.620</td><td>37.786</td><td>41.162</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.419</td><td>30.512</td><td>31.336</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>101.816</td><td>31.336</td><td>33.809</td><td>5.00</td><td>5.00</td></tr><tr><td>101.816</td><td>101.414</td><td>33.809</td><td>35.457</td><td>5.00</td><td>5.00</td></tr><tr><td>101.414</td><td>100.410</td><td>35.457</td><td>39.578</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>39.578</td><td>43.699</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>43.699</td><td>47.820</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>47.820</td><td>49.056</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.056</td><td>123.290</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.32</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.62</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.20</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.41</td><td>-29.26</td><td>-34.53</td></tr><tr><td>105.41</td><td>105.32</td><td>-34.53</td><td>-39.79</td></tr><tr><td>105.32</td><td>105.00</td><td>-31.34</td><td>-41.49</td></tr><tr><td>105.00</td><td>104.41</td><td>-41.49</td><td>-50.94</td></tr><tr><td>104.41</td><td>103.41</td><td>-50.94</td><td>-66.67</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.32	0.390	0.461	30.000	10.00	57.80	0.179	2	102.62	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.198	13.268	18.526	0.00	0.00	106.198	106.000	18.526	19.991	0.00	0.00	106.000	105.500	19.991	23.693	0.00	0.00	105.500	105.410	23.693	24.043	0.00	0.90	105.410	105.320	24.043	24.394	0.90	1.80	105.320	105.000	29.673	31.035	1.80	5.00	105.000	104.405	31.035	33.567	5.00	5.00	104.405	103.413	33.567	37.786	5.00	5.00	103.413	102.620	37.786	41.162	5.00	5.00	102.620	102.419	30.512	31.336	5.00	5.00	102.419	101.816	31.336	33.809	5.00	5.00	101.816	101.414	33.809	35.457	5.00	5.00	101.414	100.410	35.457	39.578	5.00	5.00	100.410	99.405	39.578	43.699	5.00	5.00	99.405	98.400	43.699	47.820	5.00	5.00	98.400	98.099	47.820	49.056	5.00	5.00	98.099	80.000	49.056	123.290	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.32	5.005	5.388	30.000	-20.01	18.10	2	102.62	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.20	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.41	-29.26	-34.53	105.41	105.32	-34.53	-39.79	105.32	105.00	-31.34	-41.49	105.00	104.41	-41.49	-50.94	104.41	103.41	-50.94	-66.67	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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[illegible]

Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<div><div><div><div>102.42</div><div>-68.3</div><div>-44.7</div><div>-105.4</div></div><div><div>101.82</div><div>-53.3</div><div>-0.9</div><div>-118.3</div></div><div><div>101.41</div><div>-46.4</div><div>19.8</div><div>-114.3</div></div><div><div>100.41</div><div>-38.0</div><div>46.0</div><div>-78.5</div></div><div><div>99.40</div><div>-39.9</div><div>42.2</div><div>-32.0</div></div><div><div>98.40</div><div>-50.1</div><div>13.3</div><div>-2.1</div></div><div><div>98.10</div><div>-54.7</div><div>0.0</div><div>0.0</div></div></div><div>Schnittgrößen (q,k) <div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.32</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.62</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.42</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.82</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.40</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.40</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m <div><div>Tiefe</div><div>w</div><div>ks</div><div>sig.Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>107.45</div><div>-7.8</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-7.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-6.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-6.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-6.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-6.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-6.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.15</div><div>-6.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-6.2</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-6.2</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-6.1</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-5.7</div><div>7.55</div><div>42.80</div><div>42.79</div></div><div><div>105.50</div><div>-5.6</div><div>7.55</div><div>42.38</div><div>47.55</div></div><div><div>105.50</div><div>-5.6</div><div>8.47</div><div>47.55</div><div>47.55</div></div><div><div>105.45</div><div>-5.6</div><div>8.47</div><div>47.13</div><div>51.83</div></div><div><div>105.45</div><div>-5.6</div><div>9.32</div><div>51.83</div><div>51.83</div></div><div><div>105.41</div><div>-5.5</div><div>9.32</div><div>51.37</div><div>56.11</div></div><div><div>105.41</div><div>-5.5</div><div>10.00</div><div>55.14</div><div>56.11</div></div><div><div>105.36</div><div>-5.5</div><div>10.00</div><div>54.64</div><div>60.39</div></div><div><div>105.36</div><div>-5.5</div><div>10.00</div><div>54.64</div><div>60.39</div></div><div><div>105.32</div><div>-5.4</div><div>10.00</div><div>54.15</div><div>64.67</div></div><div><div>105.32</div><div>-5.4</div><div>5.00</div><div>27.07</div><div>50.93</div></div><div><div>105.27</div><div>-5.4</div><div>5.00</div><div>26.78</div><div>53.68</div></div><div><div>105.05</div><div>-5.1</div><div>5.00</div><div>25.62</div><div>64.68</div></div><div><div>105.00</div><div>-5.1</div><div>5.00</div><div>25.32</div><div>67.43</div></div><div><div>105.00</div><div>-5.1</div><div>5.00</div><div>25.32</div><div>67.43</div></div><div><div>104.95</div><div>-5.0</div><div>5.00</div><div>25.06</div><div>68.71</div></div><div><div>104.45</div><div>-4.5</div><div>5.00</div><div>22.38</div><div>81.49</div></div><div><div>104.41</div><div>-4.4</div><div>5.00</div><div>22.12</div><div>82.77</div></div></div></div> <div><div>Schnitt:</div><div>Anlage D2</div><div>Schnitt 4R</div></div> <div><div>Kapitel:</div><div>1</div><div>LF 1.1 (BS-T, ohne Lasten)</div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div><div>Projekt-Nr.: 2004-0025</div></div> <div><div>Seite Anlage D2/4.</div><div>Archiv Nr.:</div></div> <div><div>Statisch geprüft für Standsicherheit Dipl.-Ing. A. Fortner</div></div>		

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 104.41 -4.4 5.00 22.12 82.77 104.36 -4.4 5.00 21.85 84.05 103.46 -3.4 5.00 17.22 107.06 103.41 -3.4 5.00 16.97 108.34 103.41 -3.4 5.00 16.97 108.34 103.36 -3.3 5.00 16.72 109.62 102.67 -2.7 5.00 13.39 127.52 102.62 -2.6 5.00 13.17 128.80 102.62 -2.6 50.00 131.69 231.76 102.57 -2.6 50.00 129.43 235.23 102.47 -2.5 50.00 124.97 242.17 102.42 -2.5 50.00 122.77 245.64 102.42 -2.5 50.00 122.77 245.64 102.37 -2.4 50.00 120.60 249.11 101.87 -2.0 50.00 100.19 283.81 101.82 -2.0 50.00 98.29 287.28 101.82 -2.0 50.00 98.29 287.28 101.77 -1.9 50.00 96.41 290.75 101.46 -1.7 50.00 85.67 311.56 101.41 -1.7 50.00 83.97 315.03 101.41 -1.7 50.00 83.97 315.03 101.36 -1.6 50.00 82.29 318.50 100.46 -1.1 50.00 55.92 380.96 100.41 -1.1 50.00 54.65 384.43 100.41 -1.1 50.00 54.65 384.43 100.36 -1.1 50.00 53.39 387.89 99.46 -0.7 50.00 33.02 450.35 99.40 -0.6 50.00 31.98 453.82 99.40 -0.6 50.00 31.98 453.82 99.35 -0.6 50.00 30.95 457.29 98.45 -0.3 50.00 13.15 519.74 98.40 -0.2 50.00 12.18 523.21 98.40 -0.2 50.00 12.18 523.21 98.35 -0.2 50.00 11.21 526.68 98.15 -0.1 50.00 7.33 540.56 98.10 -0.1 50.00 6.37 544.03 </div> </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.02209900 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe t_g = 7.90 m Profillänge = 9.35 m</p> </div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/5
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig																		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: $P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}$</div> <div>$G_k = 176.93 \text{ kN/m}$</div> <div>$G'_k = 0.00 \text{ kN/m}$</div> <div>$P_{v,k} = 0.00 \text{ kN/m}$</div> <div>$E_{av,k} = 53.67 \text{ kN/m}$ ($E_{ah,k} = 303.55 \text{ kN/m}$)</div> <div>$B_{v,k} = 127.25$</div> <div>Summe $V_k = 103.36 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand $D = 0.88 \text{ m}$</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div> <div>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div> <div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.32</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.32</td><td>102.62</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.62</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\implies R_{s1,d}$</div> <div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 248.60 / 1.40 = 177.57 \text{ kN/m}$</div> <div>$R_d = R_{b,d} + R_{s1,d} = 1042.62 \text{ kN/m}$</div> <div>Einwirkungen</div> <div>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.73 + 0.00 = 274.04 \text{ kN/m}$</div> <div>$\implies \mu = V_d / R_d = 274.04 / 1042.62 = 0.26$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.32	0.00	S1: Auffüllungen	105.32	102.62	0.00	S2: Auelehm	102.62	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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Schnitt:	Anlage D2 Schnitt 4R	Seite Anlage D2/6																
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025																
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 11_BS 4_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.69 104.93 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.32 10.000 10.000 105.32 102.62 5.000 5.000 102.62 80.00 50.000 50.000</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																
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<div>Ausnutzungsgrad $\mu_e = 443.014 / 1181.630 = 0.375$ Bettungslager $B_{h,d} = 443.014 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1181.630 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>1</td><td>105.32</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.62</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>105.32</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.709</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.709</td><td>20.066</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>20.067</td><td>26.057</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>26.057</td><td>27.784</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.686</td><td>27.784</td><td>30.110</td><td>0.00</td><td>0.00</td></tr><tr><td>105.686</td><td>105.500</td><td>30.110</td><td>30.531</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.410</td><td>30.531</td><td>30.420</td><td>0.00</td><td>0.90</td></tr><tr><td>105.410</td><td>105.320</td><td>30.420</td><td>30.308</td><td>0.90</td><td>1.80</td></tr><tr><td>105.320</td><td>105.000</td><td>37.271</td><td>36.521</td><td>1.80</td><td>5.00</td></tr><tr><td>105.000</td><td>104.927</td><td>36.521</td><td>36.351</td><td>5.00</td><td>5.00</td></tr><tr><td>104.927</td><td>104.426</td><td>36.351</td><td>38.485</td><td>5.00</td><td>5.00</td></tr><tr><td>104.426</td><td>103.423</td><td>38.485</td><td>42.753</td><td>5.00</td><td>5.00</td></tr><tr><td>103.423</td><td>102.620</td><td>42.753</td><td>46.168</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.419</td><td>34.079</td><td>34.903</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>101.866</td><td>34.903</td><td>37.169</td><td>5.00</td><td>5.00</td></tr><tr><td>101.866</td><td>101.414</td><td>37.169</td><td>39.024</td><td>5.00</td><td>5.00</td></tr><tr><td>101.414</td><td>100.410</td><td>39.024</td><td>43.145</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>43.145</td><td>47.266</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>47.266</td><td>51.387</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>51.387</td><td>52.623</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.623</td><td>126.857</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>$w(\text{oben})$</th><th>$w(\text{unten})$</th><th>$z(\text{oben})$</th><th>$z(\text{unten})$</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> 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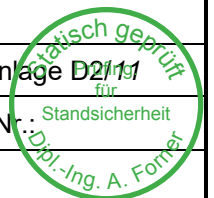
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<table><tr><td>101.87</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-8.1</td><td>0.00</td><td>0.00</td><td>4.98</td></tr><tr><td>105.74</td><td>-7.8</td><td>3.19</td><td>24.89</td><td>24.89</td></tr><tr><td>105.69</td><td>-7.7</td><td>3.19</td><td>24.63</td><td>29.87</td></tr><tr><td>105.69</td><td>-7.7</td><td>3.87</td><td>29.87</td><td>29.87</td></tr><tr><td>105.64</td><td>-7.6</td><td>3.87</td><td>29.59</td><td>34.29</td></tr><tr><td>105.55</td><td>-7.5</td><td>5.75</td><td>43.13</td><td>43.13</td></tr><tr><td>105.50</td><td>-7.4</td><td>5.75</td><td>42.71</td><td>47.55</td></tr><tr><td>105.50</td><td>-7.4</td><td>6.40</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-7.4</td><td>6.40</td><td>47.10</td><td>51.83</td></tr><tr><td>105.45</td><td>-7.4</td><td>7.04</td><td>51.83</td><td>51.83</td></tr><tr><td>105.41</td><td>-7.3</td><td>7.04</td><td>51.33</td><td>56.11</td></tr><tr><td>105.41</td><td>-7.3</td><td>7.70</td><td>56.11</td><td>56.11</td></tr><tr><td>105.36</td><td>-7.2</td><td>7.70</td><td>55.57</td><td>60.39</td></tr><tr><td>105.36</td><td>-7.2</td><td>8.37</td><td>60.39</td><td>60.39</td></tr><tr><td>105.32</td><td>-7.1</td><td>8.37</td><td>59.80</td><td>64.67</td></tr><tr><td>105.32</td><td>-7.1</td><td>5.00</td><td>35.73</td><td>50.93</td></tr><tr><td>105.27</td><td>-7.1</td><td>5.00</td><td>35.32</td><td>53.68</td></tr><tr><td>105.05</td><td>-6.7</td><td>5.00</td><td>33.66</td><td>64.68</td></tr><tr><td>105.00</td><td>-6.7</td><td>5.00</td><td>33.25</td><td>67.43</td></tr><tr><td>105.00</td><td>-6.7</td><td>5.00</td><td>33.25</td><td>67.43</td></tr><tr><td>104.93</td><td>-6.5</td><td>5.00</td><td>32.69</td><td>69.31</td></tr><tr><td>104.93</td><td>-6.5</td><td>5.00</td><td>32.69</td><td>69.31</td></tr><tr><td>104.88</td><td>-6.5</td><td>5.00</td><td>32.31</td><td>70.60</td></tr><tr><td>104.48</td><td>-5.9</td><td>5.00</td><td>29.26</td><td>80.95</td></tr><tr><td>104.43</td><td>-5.8</td><td>5.00</td><td>28.88</td><td>82.24</td></tr><tr><td>104.43</td><td>-5.8</td><td>5.00</td><td>28.88</td><td>82.24</td></tr><tr><td>104.38</td><td>-5.7</td><td>5.00</td><td>28.50</td><td>83.53</td></tr><tr><td>103.47</td><td>-4.4</td><td>5.00</td><td>21.96</td><td>106.81</td></tr><tr><td>103.42</td><td>-4.3</td><td>5.00</td><td>21.61</td><td>108.11</td></tr><tr><td>103.42</td><td>-4.3</td><td>5.00</td><td>21.61</td><td>108.11</td></tr><tr><td>103.37</td><td>-4.3</td><td>5.00</td><td>21.27</td><td>109.40</td></tr><tr><td>102.67</td><td>-3.3</td><td>5.00</td><td>16.65</td><td>127.51</td></tr><tr><td>102.62</td><td>-3.3</td><td>5.00</td><td>16.34</td><td>128.80</td></tr><tr><td>102.62</td><td>-3.3</td><td>50.00</td><td>163.42</td><td>231.76</td></tr><tr><td>102.57</td><td>-3.2</td><td>50.00</td><td>160.34</td><td>235.23</td></tr><tr><td>102.47</td><td>-3.1</td><td>50.00</td><td>154.27</td><td>242.17</td></tr><tr><td>102.42</td><td>-3.0</td><td>50.00</td><td>151.29</td><td>245.64</td></tr><tr><td>102.42</td><td>-3.0</td><td>50.00</td><td>151.29</td><td>245.64</td></tr><tr><td>102.37</td><td>-3.0</td><td>50.00</td><td>148.34</td><td>249.11</td></tr><tr><td>101.92</td><td>-2.5</td><td>50.00</td><td>123.30</td><td>280.34</td></tr><tr><td>101.87</td><td>-2.4</td><td>50.00</td><td>120.69</td><td>283.81</td></tr></table>						101.87	0.0	0.0	0.0	101.41	0.0	0.0	0.0	100.41	0.0	0.0	0.0	99.40	0.0	0.0	0.0	98.40	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-10.5	-	-	-	107.45	-10.5	-	-	-	107.45	-10.5	-	-	-	107.40	-10.4	-	-	-	106.95	-9.7	-	-	-	106.89	-9.6	-	-	-	106.89	-9.6	-	-	-	106.84	-9.5	-	-	-	106.50	-9.0	-	-	-	106.45	-8.9	-	-	-	106.45	-8.9	-	-	-	106.40	-8.8	-	-	-	106.25	-8.6	-	-	-	106.20	-8.5	-	-	-	106.20	-8.5	-	-	-	106.15	-8.5	-	-	-	106.05	-8.3	-	-	-	106.00	-8.2	0.00	0.00	0.00	106.00	-8.2	0.00	0.00	0.00	105.95	-8.1	0.00	0.00	4.98	105.74	-7.8	3.19	24.89	24.89	105.69	-7.7	3.19	24.63	29.87	105.69	-7.7	3.87	29.87	29.87	105.64	-7.6	3.87	29.59	34.29	105.55	-7.5	5.75	43.13	43.13	105.50	-7.4	5.75	42.71	47.55	105.50	-7.4	6.40	47.55	47.55	105.45	-7.4	6.40	47.10	51.83	105.45	-7.4	7.04	51.83	51.83	105.41	-7.3	7.04	51.33	56.11	105.41	-7.3	7.70	56.11	56.11	105.36	-7.2	7.70	55.57	60.39	105.36	-7.2	8.37	60.39	60.39	105.32	-7.1	8.37	59.80	64.67	105.32	-7.1	5.00	35.73	50.93	105.27	-7.1	5.00	35.32	53.68	105.05	-6.7	5.00	33.66	64.68	105.00	-6.7	5.00	33.25	67.43	105.00	-6.7	5.00	33.25	67.43	104.93	-6.5	5.00	32.69	69.31	104.93	-6.5	5.00	32.69	69.31	104.88	-6.5	5.00	32.31	70.60	104.48	-5.9	5.00	29.26	80.95	104.43	-5.8	5.00	28.88	82.24	104.43	-5.8	5.00	28.88	82.24	104.38	-5.7	5.00	28.50	83.53	103.47	-4.4	5.00	21.96	106.81	103.42	-4.3	5.00	21.61	108.11	103.42	-4.3	5.00	21.61	108.11	103.37	-4.3	5.00	21.27	109.40	102.67	-3.3	5.00	16.65	127.51	102.62	-3.3	5.00	16.34	128.80	102.62	-3.3	50.00	163.42	231.76	102.57	-3.2	50.00	160.34	235.23	102.47	-3.1	50.00	154.27	242.17	102.42	-3.0	50.00	151.29	245.64	102.42	-3.0	50.00	151.29	245.64	102.37	-3.0	50.00	148.34	249.11	101.92	-2.5	50.00	123.30	280.34	101.87	-2.4	50.00	120.69	283.81
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105.74	-7.8	3.19	24.89	24.89																																																																																																																																																																																																																																																																																																																																															
105.69	-7.7	3.19	24.63	29.87																																																																																																																																																																																																																																																																																																																																															
105.69	-7.7	3.87	29.87	29.87																																																																																																																																																																																																																																																																																																																																															
105.64	-7.6	3.87	29.59	34.29																																																																																																																																																																																																																																																																																																																																															
105.55	-7.5	5.75	43.13	43.13																																																																																																																																																																																																																																																																																																																																															
105.50	-7.4	5.75	42.71	47.55																																																																																																																																																																																																																																																																																																																																															
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105.45	-7.4	6.40	47.10	51.83																																																																																																																																																																																																																																																																																																																																															
105.45	-7.4	7.04	51.83	51.83																																																																																																																																																																																																																																																																																																																																															
105.41	-7.3	7.04	51.33	56.11																																																																																																																																																																																																																																																																																																																																															
105.41	-7.3	7.70	56.11	56.11																																																																																																																																																																																																																																																																																																																																															
105.36	-7.2	7.70	55.57	60.39																																																																																																																																																																																																																																																																																																																																															
105.36	-7.2	8.37	60.39	60.39																																																																																																																																																																																																																																																																																																																																															
105.32	-7.1	8.37	59.80	64.67																																																																																																																																																																																																																																																																																																																																															
105.32	-7.1	5.00	35.73	50.93																																																																																																																																																																																																																																																																																																																																															
105.27	-7.1	5.00	35.32	53.68																																																																																																																																																																																																																																																																																																																																															
105.05	-6.7	5.00	33.66	64.68																																																																																																																																																																																																																																																																																																																																															
105.00	-6.7	5.00	33.25	67.43																																																																																																																																																																																																																																																																																																																																															
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104.93	-6.5	5.00	32.69	69.31																																																																																																																																																																																																																																																																																																																																															
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104.88	-6.5	5.00	32.31	70.60																																																																																																																																																																																																																																																																																																																																															
104.48	-5.9	5.00	29.26	80.95																																																																																																																																																																																																																																																																																																																																															
104.43	-5.8	5.00	28.88	82.24																																																																																																																																																																																																																																																																																																																																															
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104.38	-5.7	5.00	28.50	83.53																																																																																																																																																																																																																																																																																																																																															
103.47	-4.4	5.00	21.96	106.81																																																																																																																																																																																																																																																																																																																																															
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102.67	-3.3	5.00	16.65	127.51																																																																																																																																																																																																																																																																																																																																															
102.62	-3.3	5.00	16.34	128.80																																																																																																																																																																																																																																																																																																																																															
102.62	-3.3	50.00	163.42	231.76																																																																																																																																																																																																																																																																																																																																															
102.57	-3.2	50.00	160.34	235.23																																																																																																																																																																																																																																																																																																																																															
102.47	-3.1	50.00	154.27	242.17																																																																																																																																																																																																																																																																																																																																															
102.42	-3.0	50.00	151.29	245.64																																																																																																																																																																																																																																																																																																																																															
102.42	-3.0	50.00	151.29	245.64																																																																																																																																																																																																																																																																																																																																															
102.37	-3.0	50.00	148.34	249.11																																																																																																																																																																																																																																																																																																																																															
101.92	-2.5	50.00	123.30	280.34																																																																																																																																																																																																																																																																																																																																															
101.87	-2.4	50.00	120.69	283.81																																																																																																																																																																																																																																																																																																																																															
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statisch geprüft
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Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																				
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<table><tr><td>101.87</td><td>-2.4</td><td>50.00</td><td>120.69</td><td>283.81</td></tr><tr><td>101.82</td><td>-2.4</td><td>50.00</td><td>118.12</td><td>287.28</td></tr><tr><td>101.46</td><td>-2.0</td><td>50.00</td><td>101.09</td><td>311.56</td></tr><tr><td>101.41</td><td>-2.0</td><td>50.00</td><td>98.79</td><td>315.03</td></tr><tr><td>101.41</td><td>-2.0</td><td>50.00</td><td>98.79</td><td>315.03</td></tr><tr><td>101.36</td><td>-1.9</td><td>50.00</td><td>96.53</td><td>318.50</td></tr><tr><td>100.46</td><td>-1.2</td><td>50.00</td><td>61.07</td><td>380.96</td></tr><tr><td>100.41</td><td>-1.2</td><td>50.00</td><td>59.36</td><td>384.43</td></tr><tr><td>100.41</td><td>-1.2</td><td>50.00</td><td>59.36</td><td>384.43</td></tr><tr><td>100.36</td><td>-1.2</td><td>50.00</td><td>57.67</td><td>387.89</td></tr><tr><td>99.46</td><td>-0.6</td><td>50.00</td><td>30.31</td><td>450.35</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>28.92</td><td>453.82</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>28.92</td><td>453.82</td></tr><tr><td>99.35</td><td>-0.6</td><td>50.00</td><td>27.53</td><td>457.29</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>3.60</td><td>519.74</td></tr><tr><td>98.40</td><td>0.0</td><td>50.00</td><td>2.30</td><td>523.21</td></tr><tr><td>98.40</td><td>0.0</td><td>50.00</td><td>2.30</td><td>523.21</td></tr><tr><td>98.35</td><td>0.0</td><td>50.00</td><td>1.00</td><td>526.68</td></tr><tr><td>98.15</td><td>0.1</td><td>50.00</td><td>-4.21</td><td>540.56</td></tr><tr><td>98.10</td><td>0.1</td><td>50.00</td><td>-5.52</td><td>544.03</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02970939 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 61.24 kN/m (Eah,k = 347.34 kN/m) Bv,k = 142.86 Summe V,k = 95.31 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.32</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.32</td><td>102.62</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.62</td><td>98.10</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 248.60 / 1.40 = 177.57 kN/m R,d = Rb,d + Rs1,d = 1042.62 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 70.43 + 0.00 = 282.74 kN/m ==> µ = V,d / R,d = 282.74 / 1042.62 = 0.27</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			101.87	-2.4	50.00	120.69	283.81	101.82	-2.4	50.00	118.12	287.28	101.46	-2.0	50.00	101.09	311.56	101.41	-2.0	50.00	98.79	315.03	101.41	-2.0	50.00	98.79	315.03	101.36	-1.9	50.00	96.53	318.50	100.46	-1.2	50.00	61.07	380.96	100.41	-1.2	50.00	59.36	384.43	100.41	-1.2	50.00	59.36	384.43	100.36	-1.2	50.00	57.67	387.89	99.46	-0.6	50.00	30.31	450.35	99.40	-0.6	50.00	28.92	453.82	99.40	-0.6	50.00	28.92	453.82	99.35	-0.6	50.00	27.53	457.29	98.45	-0.1	50.00	3.60	519.74	98.40	0.0	50.00	2.30	523.21	98.40	0.0	50.00	2.30	523.21	98.35	0.0	50.00	1.00	526.68	98.15	0.1	50.00	-4.21	540.56	98.10	0.1	50.00	-5.52	544.03	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.32	0.00	S1: Auffüllungen	105.32	102.62	0.00	S2: Auelehm	102.62	98.10	55.00	s3: Flusskies, -sand
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Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/12																																																																																																																				
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																																				
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																				

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 12_BS 4_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 294.321 / 393.101 = 0.749$ Bettungslager $B_{h,d} = 294.321$ kN/m Erdwiderstand $E_{ph,d} = 393.101$ kN/m</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/13
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr. 13
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

statistisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																														
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																														
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-98.60</td><td>-85.39</td><td>-85.39</td><td>-7.95</td><td>6.900E+4</td><td>2.100E+7</td><td>-108.88</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.3</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.4</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.4</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-9.7</td><td>0.1</td><td>-98.60</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 4\Rechtes Ufer\10_BS 4_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <table><tr><td>Anker/Steife</td><td>Tiefe</td><td>Vorverformung</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0072</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.32</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.62</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.32</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>105.500</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>28.012</td><td>28.012</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.320</td><td>28.012</td><td>28.012</td><td>0.50</td><td>1.80</td></tr><tr><td>105.320</td><td>105.000</td><td>28.012</td><td>28.012</td><td>1.80</td><td>5.00</td></tr><tr><td>105.000</td><td>104.450</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.400</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-98.60	-85.39	-85.39	-7.95	6.900E+4	2.100E+7	-108.88	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.3	0.0	-98.60	0.00	0.00	-0.90	106.95	-8.4	0.0	-98.60	0.00	0.00	-0.90	106.95	-8.4	0.0	-98.60	0.00	0.00	-0.80	106.95	-8.6	0.0	-98.60	0.00	0.00	-0.70	106.95	-8.7	0.0	-98.60	0.00	0.00	-0.60	106.95	-8.9	0.0	-98.60	0.00	0.00	-0.50	106.95	-9.0	0.0	-98.60	0.00	0.00	-0.40	106.95	-9.2	0.0	-98.60	0.00	0.00	-0.30	106.95	-9.3	0.0	-98.60	0.00	0.00	-0.20	106.95	-9.4	0.0	-98.60	0.00	0.00	-0.10	106.95	-9.6	0.0	-98.60	0.00	0.00	0.00	106.95	-9.7	0.1	-98.60	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0072	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.32	0.390	0.461	30.000	10.00	57.80	0.179	2	102.62	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	28.012	28.012	0.00	0.00	106.950	106.886	28.012	28.012	0.00	0.00	106.886	106.450	28.012	28.012	0.00	0.00	106.450	106.198	28.012	28.012	0.00	0.00	106.198	105.500	28.012	28.012	0.00	0.00	105.500	105.450	28.012	28.012	0.00	0.50	105.450	105.320	28.012	28.012	0.50	1.80	105.320	105.000	28.012	28.012	1.80	5.00	105.000	104.450	23.343	23.343	5.00	5.00	104.450	104.400	23.343	23.343	5.00	5.00	104.400	103.400	23.343	23.343	5.00	5.00	Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/14	
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																		
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<table><tr><td>103.400</td><td>102.620</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.550</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>30.799</td><td>31.210</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>31.210</td><td>33.671</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>33.671</td><td>35.312</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>35.312</td><td>39.415</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.415</td><td>43.518</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>43.518</td><td>47.621</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>47.621</td><td>49.056</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.056</td><td>123.290</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.62</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> 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Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



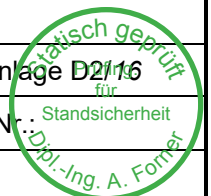
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>101.450.00.00.0.0</div><div>100.450.000.00.0.0</div><div>99.450.000.00.0.0</div><div>98.450.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div></div><div><div>107.45-8.8--</div><div>107.40-8.8--</div><div>107.00-8.5--</div><div>106.95-8.5--</div><div>106.95-8.5--</div><div>106.89-8.4--</div><div>106.89-8.4--</div><div>106.84-8.4--</div><div>106.50-8.1--</div><div>106.45-8.1--</div><div>106.45-8.1--</div><div>106.40-8.1--</div><div>106.25-8.0--</div><div>106.20-7.9--</div><div>106.20-7.9--</div><div>106.15-7.9--</div><div>105.55-7.5--</div><div>105.50-7.4--</div><div>105.50-7.4--</div><div>105.45-7.4--</div><div>105.45-7.4--</div><div>105.41-7.3--</div><div>105.36-7.3--</div><div>105.32-7.3--</div><div>105.32-7.3--</div><div>105.27-7.2--</div><div>105.05-7.1--</div><div>105.00-7.0--</div><div>105.00-7.0--</div><div>104.95-7.0--</div><div>104.50-6.6--</div><div>104.45-6.5--</div><div>104.45-6.5--</div><div>104.40-6.5--</div><div>104.40-6.5--</div><div>104.35-6.4--</div><div>103.45-5.5--</div><div>103.40-5.5--</div><div>103.40-5.5--</div><div>103.35-5.4--</div><div>102.67-4.7--</div><div>102.62-4.6--</div><div>102.62-4.6--</div><div>102.55-4.50.000.000.00</div><div>102.55-4.50.000.000.00</div><div>102.50-4.50.000.003.45</div><div>102.50-4.50.773.453.45</div><div>102.45-4.40.773.416.91</div><div>102.45-4.41.576.916.91</div><div>102.40-4.31.576.8210.36</div><div>101.90-3.811.9344.9144.91</div><div>101.85-3.711.9344.2148.36</div><div>101.85-3.713.0548.3648.36</div><div>101.80-3.613.0547.6051.81</div><div>101.50-3.322.0072.5472.54</div><div>101.45-3.222.0071.2775.99</div><div>101.45-3.223.4576.0075.99</div><div>101.40-3.223.4574.6479.45</div><div>100.50-2.250.00108.99141.63</div><div>100.45-2.150.00106.32145.08</div><div>100.45-2.150.00106.32145.08</div></div></div></div>					
Schnitt: Anlage D2 Schnitt 4R				Seite Anlage D2/17	
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)				Archiv Nr.: 2117	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

100.40	-2.1	50.00	103.66	148.53
99.50	-1.2	50.00	57.91	210.71
99.45	-1.1	50.00	55.46	214.17
99.45	-1.1	50.00	55.46	214.17
99.40	-1.1	50.00	53.02	217.62
98.50	-0.2	50.00	10.00	279.80
98.45	-0.2	50.00	7.64	283.25
98.45	-0.2	50.00	7.64	283.25
98.40	-0.1	50.00	5.27	286.71
98.15	0.1	50.00	-6.54	303.98
98.10	0.2	50.00	-8.90	307.43

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.05412615$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 9.35 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{k,k} - G'_{k,k} + E_{av,k} \geq B_{v,k}$
 $G_{k,k} = 176.93$ kN/m
 $G'_{k,k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 53.67$ kN/m ($E_{ah,k} = 303.55$ kN/m)
 $B_{v,k} = 101.26$
Summe $V_{k,k} = 129.34$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m
 $R_{d,k} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m

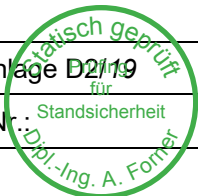
Einwirkungen
 $V_{d,k} = G_{d,k} - G'_{d,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.73 + 0.00 = 274.04$ kN/m
 $\Rightarrow \mu = V_{d,k} / R_{d,k} = 274.04 / 1039.87 = 0.26$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage D2 Schnitt 4R	Seite Anlage D2/18
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 13_BS 4_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.69 104.93 nein Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad mue = 319.144 / 393.101 = 0.812 Bettungslager Bh,d = 319.144 kN/m Erdwiderstand Eph,d = 393.101 kN/m</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/19
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																								
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																								
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-123.87</td><td>-107.36</td><td>-107.36</td><td>-8.11</td><td>6.900E+4</td><td>2.100E+7</td><td>-136.89</td></tr></table> <div>Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.3</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.5</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.5</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.9</td><td>0.1</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.1</td><td>0.1</td><td>-123.87</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 4\Rechtes Ufer\10_BS 4_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0072</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.32</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.62</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · k_{ah} + Faktor · k₀</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ = 40 °</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.32</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>107.448</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>106.198</td><td>105.686</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>105.686</td><td>105.500</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>105.500</td><td>105.407</td><td>34.226</td><td>34.226</td><td>0.00</td></tr><tr><td>105.407</td><td>105.320</td><td>34.226</td><td>34.226</td><td>0.93</td></tr><tr><td>105.320</td><td>105.000</td><td>34.226</td><td>34.226</td><td>1.80</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-123.87	-107.36	-107.36	-8.11	6.900E+4	2.100E+7	-136.89	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.3	0.0	-123.87	0.00	0.00	-0.90	106.95	-8.5	0.0	-123.87	0.00	0.00	-0.90	106.95	-8.5	0.0	-123.87	0.00	0.00	-0.80	106.95	-8.7	0.0	-123.87	0.00	0.00	-0.70	106.95	-8.8	0.0	-123.87	0.00	0.00	-0.60	106.95	-9.0	0.0	-123.87	0.00	0.00	-0.50	106.95	-9.2	0.0	-123.87	0.00	0.00	-0.40	106.95	-9.4	0.0	-123.87	0.00	0.00	-0.30	106.95	-9.6	0.0	-123.87	0.00	0.00	-0.20	106.95	-9.7	0.0	-123.87	0.00	0.00	-0.10	106.95	-9.9	0.1	-123.87	0.00	0.00	0.00	106.95	-10.1	0.1	-123.87	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0072	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.32	0.390	0.461	30.000	10.00	57.80	0.179	2	102.62	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	34.226	34.226	0.00	107.448	106.950	34.226	34.226	0.00	106.950	106.886	34.226	34.226	0.00	106.886	106.450	34.226	34.226	0.00	106.450	106.198	34.226	34.226	0.00	106.198	105.686	34.226	34.226	0.00	105.686	105.500	34.226	34.226	0.00	105.500	105.407	34.226	34.226	0.00	105.407	105.320	34.226	34.226	0.93	105.320	105.000	34.226	34.226	1.80	<div>Schnitt: Anlage D2 Schnitt 4R</div> <div>Kapitel: 4 LF 2.2 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage D2/20</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																				
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<table><tr><td>105.000</td><td>104.927</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>104.927</td><td>104.450</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.350</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>103.400</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.620</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.550</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>34.366</td><td>34.776</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>34.776</td><td>37.238</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>37.238</td><td>38.879</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.879</td><td>42.982</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>42.982</td><td>47.084</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>47.084</td><td>51.187</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>51.187</td><td>52.623</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.623</td><td>126.857</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.62</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-18.0</td><td>-19.7</td><td>-4.9</td><td>-123.9</td></tr><tr><td>106.95</td><td>-18.0</td><td>104.2</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.4</td><td>101.7</td><td>1.7</td><td></td></tr><tr><td>106.45</td><td>-36.1</td><td>84.5</td><td>42.3</td><td></td></tr><tr><td>106.20</td><td>-45.2</td><td>74.6</td><td>62.3</td><td></td></tr><tr><td>105.69</td><td>-63.7</td><td>54.4</td><td>95.3</td><td></td></tr><tr><td>105.50</td><td>-70.4</td><td>47.1</td><td>104.8</td><td></td></tr><tr><td>105.41</td><td>-73.8</td><td>43.4</td><td>109.0</td><td></td></tr><tr><td>105.32</td><td>-76.9</td><td>39.8</td><td>112.6</td><td></td></tr><tr><td>105.00</td><td>-87.2</td><td>25.9</td><td>123.2</td><td></td></tr><tr><td>104.93</td><td>-89.4</td><td>23.1</td><td>125.0</td><td></td></tr><tr><td>104.45</td><td>-104.0</td><td>4.6</td><td>131.6</td><td></td></tr><tr><td>104.35</td><td>-107.1</td><td>0.7</td><td>131.8</td><td></td></tr><tr><td>103.40</td><td>-136.1</td><td>-36.1</td><td>115.0</td><td></td></tr><tr><td>102.62</td><td>-159.9</td><td>-66.4</td><td>75.0</td><td></td></tr><tr><td>102.55</td><td>-162.4</td><td>-69.1</td><td>70.3</td><td></td></tr><tr><td>102.45</td><td>-165.2</td><td>-73.5</td><td>63.2</td><td></td></tr><tr><td>101.85</td><td>-171.2</td><td>-84.1</td><td>14.5</td><td></td></tr><tr><td>101.45</td><td>-169.0</td><td>-76.4</td><td>-18.0</td><td></td></tr><tr><td>100.45</td><td>-142.2</td><td>-7.1</td><td>-65.0</td><td></td></tr><tr><td>99.45</td><td>-121.8</td><td>41.7</td><td>-41.8</td><td></td></tr><tr><td>98.45</td><td>-126.5</td><td>22.4</td><td>-4.2</td><td></td></tr><tr><td>98.10</td><td>-133.4</td><td>0.0</td><td>0.0</td><td></td></tr></table>								105.000	104.927	28.521	28.521	5.00	5.00	104.927	104.450	28.521	28.521	5.00	5.00	104.450	104.350	28.521	28.521	5.00	5.00	104.350	103.400	28.521	28.521	5.00	5.00	103.400	102.620	28.521	28.521	5.00	5.00	102.620	102.550	28.521	28.521	5.00	5.00	102.550	102.450	34.366	34.776	5.00	5.00	102.450	101.850	34.776	37.238	5.00	5.00	101.850	101.450	37.238	38.879	5.00	5.00	101.450	100.449	38.879	42.982	5.00	5.00	100.449	99.449	42.982	47.084	5.00	5.00	99.449	98.449	47.084	51.187	5.00	5.00	98.449	98.099	51.187	52.623	5.00	5.00	98.099	80.000	52.623	126.857	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.62	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-18.0	-19.7	-4.9	-123.9	106.95	-18.0	104.2	-4.9		106.89	-20.4	101.7	1.7		106.45	-36.1	84.5	42.3		106.20	-45.2	74.6	62.3		105.69	-63.7	54.4	95.3		105.50	-70.4	47.1	104.8		105.41	-73.8	43.4	109.0		105.32	-76.9	39.8	112.6		105.00	-87.2	25.9	123.2		104.93	-89.4	23.1	125.0		104.45	-104.0	4.6	131.6		104.35	-107.1	0.7	131.8		103.40	-136.1	-36.1	115.0		102.62	-159.9	-66.4	75.0		102.55	-162.4	-69.1	70.3		102.45	-165.2	-73.5	63.2		101.85	-171.2	-84.1	14.5		101.45	-169.0	-76.4	-18.0		100.45	-142.2	-7.1	-65.0		99.45	-121.8	41.7	-41.8		98.45	-126.5	22.4	-4.2		98.10	-133.4	0.0	0.0	
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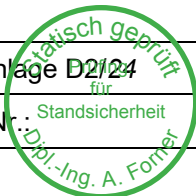
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<tr><td>98.45</td><td>-110.0</td><td>19.5</td><td>-3.6</td><td></td></tr> <tr><td>98.10</td><td>-116.0</td><td>0.0</td><td>0.0</td><td></td></tr> </table> <p>Schnittgrößen (g+w,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr> <tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr> <tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr> <tr><td>106.95</td><td>-15.7</td><td>-17.1</td><td>-4.3</td><td>-107.4</td></tr> <tr><td>106.95</td><td>-15.7</td><td>90.3</td><td>-4.3</td><td></td></tr> <tr><td>106.89</td><td>-17.7</td><td>88.1</td><td>1.4</td><td></td></tr> <tr><td>106.45</td><td>-31.4</td><td>73.1</td><td>36.6</td><td></td></tr> <tr><td>106.20</td><td>-39.3</td><td>64.5</td><td>53.9</td><td></td></tr> <tr><td>105.69</td><td>-55.4</td><td>47.0</td><td>82.5</td><td></td></tr> 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</table>					Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-15.7	-17.1	-4.3	-107.4	106.95	-15.7	90.3	-4.3		106.89	-17.7	88.1	1.4		106.45	-31.4	73.1	36.6		106.20	-39.3	64.5	53.9		105.69	-55.4	47.0	82.5		105.50	-61.2	40.6	90.6		105.41	-64.1	37.4	94.2		105.32	-66.9	34.3	97.4		105.00	-75.8	22.3	106.4		104.93	-77.8	19.8	108.0		104.45	-90.5	3.8	113.6		104.35	-93.1	0.5	113.8		103.40	-118.4	-31.4	99.1		102.62	-139.1	-57.5	64.5		102.55	-141.2	-59.9	60.4		102.45	-143.7	-63.7	54.2		101.85	-148.9	-72.8	12.1		101.45	-146.9	-66.1	-16.0		100.45	-123.7	-5.9	-56.6		99.45	-105.9	36.3	-36.3		98.45	-110.0	19.5	-3.6		98.10	-116.0	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-15.7	-17.1	-4.3	-107.4	106.95	-15.7	90.3	-4.3		106.89	-17.7	88.1	1.4		106.45	-31.4	73.1	36.6		106.20	-39.3	64.5	53.9		105.69	-55.4	47.0	82.5		105.50	-61.2	40.6	90.6		105.41	-64.1	37.4	94.2		105.32	-66.9	34.3	97.4		105.00	-75.8	22.3	106.4		104.93	-77.8	19.8	108.0		104.45	-90.5	3.8	113.6		104.35	-93.1	0.5	113.8		103.40	-118.4	-31.4	99.1		102.62	-139.1	-57.5	64.5		102.55	-141.2	-59.9	60.4		102.45	-143.7	-63.7	54.2		101.85	-148.9	-72.8	12.1		101.45	-146.9	-66.1	-16.0		100.45	-123.7	-5.9	-56.6		99.45	-105.9	36.3	-36.3		98.45	-110.0	19.5	-3.6		98.10	-116.0	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	0.0	0.0	0.0		106.95	0.0	0.0	0.0	0.0	106.89	0.0	0.0	0.0		106.45	0.0	0.0	0.0		106.20	0.0	0.0	0.0		105.69	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.41	0.0	0.0	0.0		105.32	0.0	0.0	0.0	
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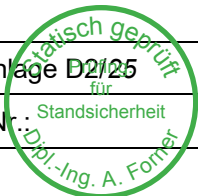
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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.69</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.69</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.64</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.41</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.41</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.27</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.93</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.93</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.88</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr></table>						105.00	0.0	0.0	0.0	104.93	0.0	0.0	0.0	104.45	0.0	0.0	0.0	104.35	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.62	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.45	0.0	0.0	0.0	101.85	0.0	0.0	0.0	101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.1	-	-	-	107.45	-9.1	-	-	-	107.45	-9.1	-	-	-	107.40	-9.0	-	-	-	107.00	-8.8	-	-	-	106.95	-8.8	-	-	-	106.95	-8.8	-	-	-	106.89	-8.7	-	-	-	106.89	-8.7	-	-	-	106.84	-8.7	-	-	-	106.50	-8.5	-	-	-	106.45	-8.5	-	-	-	106.45	-8.5	-	-	-	106.40	-8.5	-	-	-	106.25	-8.4	-	-	-	106.20	-8.3	-	-	-	106.20	-8.3	-	-	-	106.15	-8.3	-	-	-	105.74	-8.0	-	-	-	105.69	-8.0	-	-	-	105.69	-8.0	-	-	-	105.64	-8.0	-	-	-	105.55	-7.9	-	-	-	105.50	-7.9	-	-	-	105.50	-7.9	-	-	-	105.45	-7.8	-	-	-	105.45	-7.8	-	-	-	105.41	-7.8	-	-	-	105.41	-7.8	-	-	-	105.36	-7.8	-	-	-	105.36	-7.8	-	-	-	105.32	-7.7	-	-	-	105.32	-7.7	-	-	-	105.27	-7.7	-	-	-	105.05	-7.5	-	-	-	105.00	-7.5	-	-	-	105.00	-7.5	-	-	-	104.95	-7.5	-	-	-	104.95	-7.5	-	-	-	104.93	-7.4	-	-	-	104.93	-7.4	-	-	-	104.88	-7.4	-	-	-	104.50	-7.1	-	-	-	104.45	-7.0	-	-	-	104.45	-7.0	-	-	-	104.40	-7.0	-	-	-	104.40	-7.0	-	-	-	104.35	-6.9	-	-	-	104.35	-6.9	-	-	-	104.30	-6.9	-	-	-	103.45	-6.0	-	-	-	103.40	-6.0	-	-	-
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103.40	-6.0	-	-	-																																																																																																																																																																																																																																																																																																																																							
Schnitt: Anlage D2 Schnitt 4R				Seite Anlage D2/23																																																																																																																																																																																																																																																																																																																																							
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)				Archiv Nr.: Standsicherheit																																																																																																																																																																																																																																																																																																																																							
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																									



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.40 -6.0 - - - 103.35 -5.9 - - - 102.67 -5.1 - - - 102.62 -5.1 - - - 102.62 -5.1 - - - 102.55 -5.0 0.00 0.00 0.00 102.55 -5.0 0.00 0.00 0.00 102.50 -4.9 0.00 0.00 3.45 102.50 -4.9 0.70 3.45 3.45 102.45 -4.9 0.70 3.41 6.91 102.45 -4.9 1.41 6.91 6.91 102.40 -4.8 1.41 6.82 10.36 101.90 -4.2 10.68 44.91 44.91 101.85 -4.1 10.68 44.24 48.36 101.85 -4.1 11.67 48.36 48.36 101.80 -4.1 11.67 47.63 51.81 101.50 -3.7 19.58 72.54 72.54 101.45 -3.6 19.58 71.32 75.99 101.45 -3.6 20.87 76.00 75.99 101.40 -3.6 20.87 74.69 79.45 100.50 -2.5 50.00 123.98 141.63 100.45 -2.4 50.00 121.02 145.08 100.45 -2.4 50.00 121.02 145.08 100.40 -2.4 50.00 118.08 148.53 99.50 -1.3 50.00 67.03 210.71 99.45 -1.3 50.00 64.29 214.17 99.45 -1.3 50.00 64.29 214.17 99.40 -1.2 50.00 61.55 217.62 98.50 -0.3 50.00 13.22 279.80 98.45 -0.2 50.00 10.56 283.25 98.45 -0.2 50.00 10.56 283.25 98.40 -0.2 50.00 7.90 286.71 98.15 0.1 50.00 -5.39 303.98 98.10 0.2 50.00 -8.05 307.43 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06088134 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p> </div> </div>		
Schnitt:	Anlage D2 Schnitt 4R	Seite Anlage D2/24
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 176.93 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 61.24 \text{ kN/m}$ ($E_{ah,k} = 347.34 \text{ kN/m}$) $B_{v,k} = 109.84$ Summe $V_{,k} = 128.33 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 70.43 + 0.00 = 282.74 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 282.74 / 1039.87 = 0.27$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/25
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 14_BS 4_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.70 108.70 108.69 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.70 108.70 108.70 106.64 105.74 ja Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/26
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 166.178 / 275.516 = 0.603$
Bettungslager $B_{h,d} = 166.178 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 275.516 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-366.69	-306.48	-225.24	-49.55	3.900E+7	2.100E+7	-409.03

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-6.7	0.0	-367.11	0.00	0.00
-7.47	103.72	-6.7	0.0	-367.11	0.00	0.00
-7.47	103.72	-6.7	0.0	-367.11	0.00	0.00
-6.64	103.72	-6.7	0.0	-367.11	0.00	0.00
-5.81	103.72	-6.7	0.0	-367.11	0.00	0.00
-4.98	103.72	-6.7	0.0	-367.11	0.00	0.00
-4.15	103.72	-6.7	0.0	-367.11	0.00	0.00
-3.32	103.72	-6.7	0.0	-367.11	0.00	0.00
-2.49	103.72	-6.7	0.1	-367.11	0.00	0.00
-1.66	103.72	-6.7	0.1	-367.11	0.00	0.00
-0.83	103.72	-6.7	0.1	-367.11	0.00	0.00
0.00	103.72	-6.7	0.1	-367.11	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0058

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]
1	105.32	0.390	0.461	30.000	10.00	57.80	0.179
2	102.62	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.700	108.698	0.000	14.416	0.00
108.698	108.694	14.416	19.528	0.00
108.694	107.700	19.528	26.888	0.00
107.700	107.450	26.888	28.739	0.00

Schnitt: Anlage D2	Schnitt 4R	Seite Anlage D2/27
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr. 27
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>107.450</td><td>106.700</td><td>28.739</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.700</td><td>106.644</td><td>34.292</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.644</td><td>105.737</td><td>34.710</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>105.737</td><td>105.700</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.700</td><td>105.500</td><td>26.109</td><td>27.589</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.320</td><td>27.589</td><td>28.291</td><td>0.00</td><td>1.80</td></tr><tr><td>105.320</td><td>104.650</td><td>34.679</td><td>37.530</td><td>1.80</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>37.530</td><td>41.487</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>41.487</td><td>41.785</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.660</td><td>41.785</td><td>45.998</td><td>18.50</td><td>28.40</td></tr><tr><td>102.660</td><td>102.620</td><td>45.998</td><td>46.168</td><td>28.40</td><td>28.80</td></tr><tr><td>102.620</td><td>102.550</td><td>34.079</td><td>34.366</td><td>28.80</td><td>29.50</td></tr><tr><td>102.550</td><td>101.700</td><td>34.366</td><td>37.853</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.853</td><td>41.956</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>41.956</td><td>46.059</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>46.059</td><td>50.161</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>50.161</td><td>52.623</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.623</td><td>126.857</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.62</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.70</td><td>0.00</td><td>-36.14</td></tr><tr><td>101.70</td><td>100.70</td><td>-36.14</td><td>-78.65</td></tr><tr><td>100.70</td><td>99.70</td><td>-78.65</td><td>-121.17</td></tr><tr><td>99.70</td><td>98.70</td><td>-121.17</td><td>-163.68</td></tr><tr><td>98.70</td><td>98.10</td><td>-163.68</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.70</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-40.9</td><td>-37.5</td><td>-22.0</td><td></td></tr><tr><td>107.45</td><td>-95.5</td><td>-37.5</td><td>-57.0</td><td></td></tr><tr><td>106.70</td><td>-122.3</td><td>-66.5</td><td>-95.7</td><td></td></tr><tr><td>106.64</td><td>-124.4</td><td>-68.8</td><td>-99.5</td><td></td></tr><tr><td>105.74</td><td>-156.0</td><td>-101.5</td><td>-177.6</td><td></td></tr><tr><td>105.70</td><td>-157.2</td><td>-102.6</td><td>-181.3</td><td></td></tr><tr><td>105.50</td><td>-163.8</td><td>-108.7</td><td>-202.4</td><td></td></tr><tr><td>105.32</td><td>-169.9</td><td>-114.7</td><td>-222.5</td><td></td></tr><tr><td>104.65</td><td>-191.9</td><td>-146.7</td><td>-309.7</td><td></td></tr><tr><td>103.72</td><td>-223.5</td><td>-203.6</td><td>-471.4</td><td>-367.1</td></tr><tr><td>103.72</td><td>-223.5</td><td>163.5</td><td>-471.4</td><td></td></tr><tr><td>103.65</td><td>-225.9</td><td>158.6</td><td>-460.2</td><td></td></tr><tr><td>102.66</td><td>-260.8</td><td>80.8</td><td>-340.3</td><td></td></tr><tr><td>102.62</td><td>-262.3</td><td>77.3</td><td>-337.1</td><td></td></tr><tr><td>102.55</td><td>-264.9</td><td>72.1</td><td>-331.9</td><td></td></tr><tr><td>101.70</td><td>-273.7</td><td>63.1</td><td>-278.1</td><td></td></tr><tr><td>100.70</td><td>-262.0</td><td>101.0</td><td>-196.2</td><td></td></tr><tr><td>99.70</td><td>-264.8</td><td>97.9</td><td>-92.5</td><td></td></tr><tr><td>98.70</td><td>-282.5</td><td>49.1</td><td>-15.5</td><td></td></tr><tr><td>98.10</td><td>-290.1</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	106.700	28.739	34.292	0.00	0.00	106.700	106.644	34.292	34.710	0.00	0.00	106.644	105.737	34.710	25.836	0.00	0.00	105.737	105.700	25.836	26.109	0.00	0.00	105.700	105.500	26.109	27.589	0.00	0.00	105.500	105.320	27.589	28.291	0.00	1.80	105.320	104.650	34.679	37.530	1.80	8.50	104.650	103.720	37.530	41.487	8.50	17.80	103.720	103.650	41.487	41.785	17.80	18.50	103.650	102.660	41.785	45.998	18.50	28.40	102.660	102.620	45.998	46.168	28.40	28.80	102.620	102.550	34.079	34.366	28.80	29.50	102.550	101.700	34.366	37.853	0.00	0.00	101.700	100.699	37.853	41.956	0.00	0.00	100.699	99.699	41.956	46.059	0.00	0.00	99.699	98.699	46.059	50.161	0.00	0.00	98.699	98.099	50.161	52.623	0.00	0.00	98.099	80.000	52.623	126.857	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.62	102.55	0.00	0.00	102.55	101.70	0.00	-36.14	101.70	100.70	-36.14	-78.65	100.70	99.70	-78.65	-121.17	99.70	98.70	-121.17	-163.68	98.70	98.10	-163.68	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.70	-0.1	0.0	0.0		108.69	-0.2	-0.1	0.0		107.70	-32.3	-29.0	-13.7		107.45	-40.9	-37.5	-22.0		107.45	-95.5	-37.5	-57.0		106.70	-122.3	-66.5	-95.7		106.64	-124.4	-68.8	-99.5		105.74	-156.0	-101.5	-177.6		105.70	-157.2	-102.6	-181.3		105.50	-163.8	-108.7	-202.4		105.32	-169.9	-114.7	-222.5		104.65	-191.9	-146.7	-309.7		103.72	-223.5	-203.6	-471.4	-367.1	103.72	-223.5	163.5	-471.4		103.65	-225.9	158.6	-460.2		102.66	-260.8	80.8	-340.3		102.62	-262.3	77.3	-337.1		102.55	-264.9	72.1	-331.9		101.70	-273.7	63.1	-278.1		100.70	-262.0	101.0	-196.2		99.70	-264.8	97.9	-92.5		98.70	-282.5	49.1	-15.5		98.10	-290.1	0.0	0.0	
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Statisch geprüft

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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																									
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<div><div><div>104.65-14.2-39.1-108.7</div><div>103.72-14.2-39.1-145.1-89.7</div><div>103.72-14.242.1-145.1</div><div>103.65-14.242.1-142.1</div><div>102.66-14.242.1-100.4</div><div>102.62-14.242.1-98.7</div><div>102.55-14.242.1-95.8</div><div>101.70-15.339.5-60.6</div><div>100.70-20.725.8-27.4</div><div>99.70-26.012.5-8.5</div><div>98.70-28.63.3-0.9</div><div>98.10-27.30.00.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.70</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.64</td><td>-21.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-17.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.64</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.64</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.59</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.79</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.66</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.66</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-3.5</td><td>0.00</td><td>0.00</td><td>3.45</td></tr></table></div></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.70	-21.4	-	-	-	108.70	-21.4	-	-	-	108.70	-21.4	-	-	-	108.69	-21.4	-	-	-	108.69	-21.4	-	-	-	108.64	-21.2	-	-	-	107.75	-18.1	-	-	-	107.70	-18.0	-	-	-	107.70	-18.0	-	-	-	107.65	-17.8	-	-	-	107.50	-17.3	-	-	-	107.45	-17.1	-	-	-	107.45	-17.1	-	-	-	107.40	-16.9	-	-	-	106.75	-14.8	-	-	-	106.70	-14.6	-	-	-	106.70	-14.6	-	-	-	106.64	-14.4	-	-	-	106.64	-14.4	-	-	-	106.59	-14.2	-	-	-	105.79	-11.6	-	-	-	105.74	-11.5	-	-	-	105.74	-11.5	-	-	-	105.70	-11.4	-	-	-	105.70	-11.4	-	-	-	105.65	-11.2	-	-	-	105.55	-10.9	-	-	-	105.50	-10.7	-	-	-	105.50	-10.7	-	-	-	105.45	-10.6	-	-	-	105.36	-10.3	-	-	-	105.32	-10.2	-	-	-	105.32	-10.2	-	-	-	105.26	-10.0	-	-	-	104.70	-8.4	-	-	-	104.65	-8.2	-	-	-	104.65	-8.2	-	-	-	104.60	-8.1	-	-	-	103.77	-6.0	-	-	-	103.72	-5.9	-	-	-	103.72	-5.9	-	-	-	103.70	-5.8	-	-	-	103.70	-5.8	-	-	-	103.65	-5.7	-	-	-	103.65	-5.7	-	-	-	103.60	-5.6	-	-	-	102.70	-3.8	-	-	-	102.66	-3.8	-	-	-	102.66	-3.8	-	-	-	102.62	-3.7	-	-	-	102.62	-3.7	-	-	-	102.55	-3.6	0.00	0.00	0.00	102.55	-3.6	0.00	0.00	0.00	102.50	-3.5	0.00	0.00	3.45
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Statisch geprüft

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Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>101.75</div><div>-2.4</div><div>22.72</div><div>55.27</div><div>55.27</div></div><div>101.70</div><div>-2.4</div><div>22.72</div><div>53.82</div><div>58.72</div><div>101.70</div><div>-2.4</div><div>24.79</div><div>58.72</div><div>58.72</div><div>101.65</div><div>-2.3</div><div>24.79</div><div>57.16</div><div>62.18</div><div>100.75</div><div>-1.3</div><div>50.00</div><div>66.47</div><div>124.35</div><div>100.70</div><div>-1.3</div><div>50.00</div><div>64.15</div><div>127.81</div><div>100.70</div><div>-1.3</div><div>50.00</div><div>64.15</div><div>127.81</div><div>100.65</div><div>-1.2</div><div>50.00</div><div>61.86</div><div>131.26</div><div>99.75</div><div>-0.5</div><div>50.00</div><div>25.69</div><div>193.44</div><div>99.70</div><div>-0.5</div><div>50.00</div><div>23.90</div><div>196.89</div><div>99.70</div><div>-0.5</div><div>50.00</div><div>23.90</div><div>196.89</div><div>99.65</div><div>-0.4</div><div>50.00</div><div>22.13</div><div>200.35</div><div>98.75</div><div>0.2</div><div>50.00</div><div>-7.85</div><div>262.53</div><div>98.70</div><div>0.2</div><div>50.00</div><div>-9.45</div><div>265.98</div><div>98.70</div><div>0.2</div><div>50.00</div><div>-9.45</div><div>265.98</div><div>98.65</div><div>0.2</div><div>50.00</div><div>-11.05</div><div>269.43</div><div>98.15</div><div>0.5</div><div>50.00</div><div>-26.96</div><div>303.98</div><div>98.10</div><div>0.6</div><div>50.00</div><div>-28.55</div><div>307.43</div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.03639758</div><div>Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 4.45 m</div><div>Profillänge = 10.60 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: $P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}$</div><div>$G_{s,k} = 200.58 \text{ kN/m}$</div><div>$G'_{s,k} = 0.00 \text{ kN/m}$</div><div>$P_{v,k} = 45.50 \text{ kN/m}$</div><div>$E_{av,k} = 70.79 \text{ kN/m}$ ($E_{ah,k} = 399.63 \text{ kN/m}$)</div><div>$B_{v,k} = 59.42$</div><div>Summe $V_{k} = 257.46 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand $D = 0.88 \text{ m}$</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div><div>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div><div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung</div><div><table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}/\text{m} \implies R_{s1,d}$</div><div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$</div><div>$R_{d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</div><div>Einwirkungen</div><div>$V_{d} = G_{d} - G'_{s,k} + E_{av,d} + P_{v,d} = 240.70 - 0.00 + 82.48 + 54.60 = 377.78 \text{ kN/m}$</div><div>$\implies \mu = V_{d} / R_{d} = 377.78 / 1039.87 = 0.36$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/31								
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 15_BS 4_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.70 108.70 108.69 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/32
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 251.953 / 319.519 = 0.789$
Bettungslager $B_{h,d} = 251.953 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 319.519 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-251.58	-194.90	-194.90	-49.68	3.900E+7	2.100E+7	-248.50 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.4	0.0	-252.23	0.00	0.00
-7.47	103.72	-7.4	0.0	-252.23	0.00	0.00
-7.47	103.72	-7.4	0.0	-252.23	0.00	0.00
-6.64	103.72	-7.4	0.0	-252.23	0.00	0.00
-5.81	103.72	-7.4	0.0	-252.23	0.00	0.00
-4.98	103.72	-7.4	0.0	-252.23	0.00	0.00
-4.15	103.72	-7.4	0.0	-252.23	0.00	0.00
-3.32	103.72	-7.4	0.0	-252.23	0.00	0.00
-2.49	103.72	-7.4	0.1	-252.23	0.00	0.00
-1.66	103.72	-7.4	0.1	-252.23	0.00	0.00
-0.83	103.72	-7.4	0.1	-252.23	0.00	0.00
0.00	103.72	-7.4	0.1	-252.23	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0058

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.32	0.390	0.461	30.000	10.00	57.80	0.179
2	102.62	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.700	108.694	0.000	1.992	0.00
108.694	107.700	1.992	9.352	0.00
107.700	107.450	9.352	11.203	0.00
107.450	106.700	11.203	16.756	0.00

Schnitt:	Anlage D2	Schnitt 4R	Seite Anlage D2/33
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																		
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<table><tr><td>106.700</td><td>105.650</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>24.530</td><td>25.641</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.320</td><td>25.641</td><td>26.342</td><td>0.00</td><td>1.80</td></tr><tr><td>105.320</td><td>104.650</td><td>32.176</td><td>35.027</td><td>1.80</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>35.027</td><td>38.984</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>38.984</td><td>39.282</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.660</td><td>39.282</td><td>43.495</td><td>18.50</td><td>28.40</td></tr><tr><td>102.660</td><td>102.620</td><td>43.495</td><td>43.665</td><td>28.40</td><td>28.80</td></tr><tr><td>102.620</td><td>102.550</td><td>32.295</td><td>32.583</td><td>28.80</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>32.583</td><td>34.429</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.700</td><td>34.429</td><td>36.070</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>36.070</td><td>40.173</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>40.173</td><td>44.275</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>44.275</td><td>48.378</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>48.378</td><td>50.840</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.840</td><td>125.073</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.62</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-11.33</td><td>-29.09</td></tr><tr><td>102.10</td><td>101.70</td><td>-29.09</td><td>-44.88</td></tr><tr><td>101.70</td><td>100.70</td><td>-44.88</td><td>-84.36</td></tr><tr><td>100.70</td><td>99.70</td><td>-84.36</td><td>-123.84</td></tr><tr><td>99.70</td><td>98.70</td><td>-123.84</td><td>-163.31</td></tr><tr><td>98.70</td><td>98.10</td><td>-163.31</td><td>-187.00</td></tr><tr><td>98.10</td><td>80.00</td><td>-187.00</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-34.0</td><td>-10.5</td><td>-5.0</td><td></td></tr><tr><td>107.45</td><td>-95.4</td><td>-10.5</td><td>-44.3</td><td></td></tr><tr><td>106.70</td><td>-118.4</td><td>-23.8</td><td>-56.8</td><td></td></tr><tr><td>105.65</td><td>-153.8</td><td>-51.5</td><td>-95.4</td><td></td></tr><tr><td>105.50</td><td>-159.1</td><td>-56.3</td><td>-103.5</td><td></td></tr><tr><td>105.32</td><td>-165.6</td><td>-62.5</td><td>-114.2</td><td></td></tr><tr><td>104.65</td><td>-189.5</td><td>-95.8</td><td>-166.8</td><td></td></tr><tr><td>103.72</td><td>-223.7</td><td>-156.2</td><td>-282.7</td><td>-252.2</td></tr><tr><td>103.72</td><td>-223.7</td><td>96.0</td><td>-282.7</td><td></td></tr><tr><td>103.65</td><td>-226.3</td><td>90.8</td><td>-276.1</td><td></td></tr><tr><td>102.66</td><td>-264.2</td><td>7.2</td><td>-226.1</td><td></td></tr><tr><td>102.62</td><td>-265.8</td><td>3.5</td><td>-225.9</td><td></td></tr><tr><td>102.55</td><td>-268.6</td><td>-2.2</td><td>-225.8</td><td></td></tr><tr><td>102.10</td><td>-272.5</td><td>-3.6</td><td>-228.0</td><td></td></tr><tr><td>101.70</td><td>-269.5</td><td>10.2</td><td>-227.1</td><td></td></tr><tr><td>100.70</td><td>-247.3</td><td>77.7</td><td>-182.4</td><td></td></tr><tr><td>99.70</td><td>-244.0</td><td>92.6</td><td>-92.1</td><td></td></tr><tr><td>98.70</td><td>-260.9</td><td>50.5</td><td>-16.1</td><td></td></tr><tr><td>98.10</td><td>-270.4</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.700	105.650	16.756	24.530	0.00	0.00	105.650	105.500	24.530	25.641	0.00	0.00	105.500	105.320	25.641	26.342	0.00	1.80	105.320	104.650	32.176	35.027	1.80	8.50	104.650	103.720	35.027	38.984	8.50	17.80	103.720	103.650	38.984	39.282	17.80	18.50	103.650	102.660	39.282	43.495	18.50	28.40	102.660	102.620	43.495	43.665	28.40	28.80	102.620	102.550	32.295	32.583	28.80	29.50	102.550	102.100	32.583	34.429	0.00	0.00	102.100	101.700	34.429	36.070	0.00	0.00	101.700	100.699	36.070	40.173	0.00	0.00	100.699	99.699	40.173	44.275	0.00	0.00	99.699	98.699	44.275	48.378	0.00	0.00	98.699	98.099	48.378	50.840	0.00	0.00	98.099	80.000	50.840	125.073	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.62	102.55	0.00	0.00	102.55	102.10	-11.33	-29.09	102.10	101.70	-29.09	-44.88	101.70	100.70	-44.88	-84.36	100.70	99.70	-84.36	-123.84	99.70	98.70	-123.84	-163.31	98.70	98.10	-163.31	-187.00	98.10	80.00	-187.00	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.69	-0.1	0.0	0.0		107.70	-26.7	-7.2	-2.8		107.45	-34.0	-10.5	-5.0		107.45	-95.4	-10.5	-44.3		106.70	-118.4	-23.8	-56.8		105.65	-153.8	-51.5	-95.4		105.50	-159.1	-56.3	-103.5		105.32	-165.6	-62.5	-114.2		104.65	-189.5	-95.8	-166.8		103.72	-223.7	-156.2	-282.7	-252.2	103.72	-223.7	96.0	-282.7		103.65	-226.3	90.8	-276.1		102.66	-264.2	7.2	-226.1		102.62	-265.8	3.5	-225.9		102.55	-268.6	-2.2	-225.8		102.10	-272.5	-3.6	-228.0		101.70	-269.5	10.2	-227.1		100.70	-247.3	77.7	-182.4		99.70	-244.0	92.6	-92.1		98.70	-260.9	50.5	-16.1		98.10	-270.4	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>100.700.00.00.0.0</div><div>99.700.000.00.0.0</div><div>98.700.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig.Bh,k</div><div>eph,k</div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>108.70</div><div>-17.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>108.70</div><div>-17.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>108.70</div><div>-17.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>108.69</div><div>-17.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>108.69</div><div>-17.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>108.64</div><div>-17.3</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.75</div><div>-15.1</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.70</div><div>-15.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.70</div><div>-15.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.65</div><div>-14.9</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.50</div><div>-14.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.45</div><div>-14.4</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.45</div><div>-14.4</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>107.40</div><div>-14.2</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>106.75</div><div>-12.6</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>106.70</div><div>-12.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>106.70</div><div>-12.5</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>106.65</div><div>-12.4</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.70</div><div>-10.1</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.65</div><div>-10.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.65</div><div>-10.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.60</div><div>-9.9</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.55</div><div>-9.8</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.50</div><div>-9.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.50</div><div>-9.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.45</div><div>-9.6</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.36</div><div>-9.3</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.32</div><div>-9.2</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.32</div><div>-9.2</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>105.26</div><div>-9.1</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>104.70</div><div>-7.9</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>104.65</div><div>-7.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>104.65</div><div>-7.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>104.60</div><div>-7.6</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.77</div><div>-5.9</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.72</div><div>-5.8</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.72</div><div>-5.8</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.70</div><div>-5.8</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.70</div><div>-5.8</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.65</div><div>-5.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.65</div><div>-5.7</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>103.60</div><div>-5.6</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.70</div><div>-4.1</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.66</div><div>-4.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.66</div><div>-4.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.62</div><div>-4.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.62</div><div>-4.0</div><div>-</div><div>-</div><div>-</div><div></div></div><div><div>102.55</div><div>-3.8</div><div>0.00</div><div>0.00</div><div>0.00</div><div></div></div><div><div>102.55</div><div>-3.8</div><div>0.00</div><div>0.00</div><div>19.82</div><div></div></div><div><div>102.50</div><div>-3.8</div><div>0.00</div><div>0.00</div><div>23.27</div><div></div></div><div><div>102.15</div><div>-3.3</div><div>14.55</div><div>47.46</div><div>47.45</div><div></div></div><div><div>102.10</div><div>-3.2</div><div>14.55</div><div>46.44</div><div>50.91</div><div></div></div><div><div>102.10</div><div>-3.2</div><div>15.95</div><div>50.91</div><div>50.91</div><div></div></div><div><div>102.05</div><div>-3.1</div><div>15.95</div><div>49.81</div><div>54.36</div><div></div></div><div><div>101.75</div><div>-2.7</div><div>27.57</div><div>75.09</div><div>75.09</div><div></div></div><div><div>101.70</div><div>-2.7</div><div>27.57</div><div>73.34</div><div>78.54</div><div></div></div><div><div>101.70</div><div>-2.7</div><div>29.53</div><div>78.55</div><div>78.54</div><div></div></div><div><div>101.65</div><div>-2.6</div><div>29.53</div><div>76.69</div><div>82.00</div><div></div></div><div><div>100.75</div><div>-1.6</div><div>50.00</div><div>79.38</div><div>144.17</div><div></div></div><div><div>100.70</div><div>-1.5</div><div>50.00</div><div>76.90</div><div>147.63</div><div></div></div><div><div>100.70</div><div>-1.5</div><div>50.00</div><div>76.90</div><div>147.63</div><div></div></div><div><div>100.65</div><div>-1.5</div><div>50.00</div><div>74.45</div><div>151.08</div><div></div></div></div></div> <div><div><div>Schnitt:</div><div>Anlage D2</div><div>Schnitt 4R</div></div><div><div>Seite Anlage</div><div>D2/36</div></div></div> <div><div><div>Kapitel:</div><div>6</div><div>LF 4 (BS-P, mit Lasten)</div></div><div><div>Archiv Nr.:</div><div></div></div></div> <div><div><div>Vorgang:</div><div>Genehmigungsstatik</div></div><div><div>Projekt-Nr.:</div><div>2004-0025</div></div></div> <div><div>Statisch geprüft</div><div>für</div><div>Standicherheit</div><div>Dipl.-Ing. A. Forner</div></div>					

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>99.75-0.750.0034.69213.26</div><div>99.70-0.750.0032.68216.71</div><div>99.70-0.750.0032.68216.71</div><div>99.65-0.650.0030.68220.17</div><div>98.750.150.00-3.49282.34</div><div>98.700.150.00-5.33285.80</div><div>98.700.150.00-5.33285.80</div><div>98.650.150.00-7.17289.25</div><div>98.150.550.00-25.46323.80</div><div>98.100.550.00-27.29327.25</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.04185162</div><div>Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 4.45 m</div><div>Profillänge = 10.60 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k >= Bv,k</div><div>G,k = 200.58 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 45.50 kN/m</div><div>Eav,k = 59.96 kN/m (Eah,k = 339.14 kN/m)</div><div>Bv,k = 78.68</div><div>Summe V,k = 227.37 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung</div><div><table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m</div><div>R,d = Rb,d + R,s1,d = 1039.87 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 270.79 - 0.00 + 76.45 + 61.43 = 408.67 kN/m</div><div>==> µ = V,d / R,d = 408.67 / 1039.87 = 0.39</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/37								
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 22040025								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 16_BS 4_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.70 108.70 108.69 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/38
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 226.664 / 344.098 = 0.659$
Bettungslager $B_{h,d} = 226.664 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 344.098 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-250.42	-215.97	-215.97	-49.68	3.900E+7	2.100E+7	-275.36 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-6.7	0.0	-250.85	0.00	0.00
-7.47	103.72	-6.7	0.0	-250.85	0.00	0.00
-7.47	103.72	-6.7	0.0	-250.85	0.00	0.00
-6.64	103.72	-6.7	0.0	-250.85	0.00	0.00
-5.81	103.72	-6.7	0.0	-250.85	0.00	0.00
-4.98	103.72	-6.7	0.0	-250.85	0.00	0.00
-4.15	103.72	-6.7	0.0	-250.85	0.00	0.00
-3.32	103.72	-6.7	0.0	-250.85	0.00	0.00
-2.49	103.72	-6.7	0.1	-250.85	0.00	0.00
-1.66	103.72	-6.7	0.1	-250.85	0.00	0.00
-0.83	103.72	-6.7	0.1	-250.85	0.00	0.00
0.00	103.72	-6.7	0.1	-250.85	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0058

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.32	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.62	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.32	0.390	0.461	30.000	10.00	57.80	0.179
2	102.62	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.700	108.694	0.000	3.941	0.00
108.694	107.700	3.941	11.301	0.00
107.700	107.450	11.301	13.152	0.00
107.450	106.700	13.152	18.705	0.00

Schnitt:	Anlage D2	Schnitt 4R	Seite Anlage D2/39
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																		
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																						
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																		
<table><tr><td>106.700</td><td>105.650</td><td>18.705</td><td>26.479</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>26.479</td><td>27.589</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.320</td><td>27.589</td><td>28.291</td><td>0.00</td><td>1.80</td></tr><tr><td>105.320</td><td>104.650</td><td>34.679</td><td>37.530</td><td>1.80</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>37.530</td><td>41.487</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>41.487</td><td>41.785</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.660</td><td>41.785</td><td>45.998</td><td>18.50</td><td>28.40</td></tr><tr><td>102.660</td><td>102.620</td><td>45.998</td><td>46.168</td><td>28.40</td><td>28.80</td></tr><tr><td>102.620</td><td>102.550</td><td>34.079</td><td>34.366</td><td>28.80</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>34.366</td><td>36.212</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.700</td><td>36.212</td><td>37.853</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.853</td><td>41.956</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>41.956</td><td>46.059</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>46.059</td><td>50.161</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>50.161</td><td>52.623</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.623</td><td>126.857</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.62</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-12.20</td><td>-31.33</td></tr><tr><td>102.10</td><td>101.70</td><td>-31.33</td><td>-48.33</td></tr><tr><td>101.70</td><td>100.70</td><td>-48.33</td><td>-90.85</td></tr><tr><td>100.70</td><td>99.70</td><td>-90.85</td><td>-133.36</td></tr><tr><td>99.70</td><td>98.70</td><td>-133.36</td><td>-175.88</td></tr><tr><td>98.70</td><td>98.10</td><td>-175.88</td><td>-201.38</td></tr><tr><td>98.10</td><td>80.00</td><td>-201.38</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-31.7</td><td>-12.2</td><td>-6.2</td><td></td></tr><tr><td>107.45</td><td>-86.3</td><td>-12.2</td><td>-41.2</td><td></td></tr><tr><td>106.70</td><td>-107.6</td><td>-26.0</td><td>-55.2</td><td></td></tr><tr><td>105.65</td><td>-140.4</td><td>-53.3</td><td>-96.0</td><td></td></tr><tr><td>105.50</td><td>-145.3</td><td>-57.9</td><td>-104.3</td><td></td></tr><tr><td>105.32</td><td>-151.4</td><td>-63.9</td><td>-115.3</td><td></td></tr><tr><td>104.65</td><td>-173.4</td><td>-95.9</td><td>-168.4</td><td></td></tr><tr><td>103.72</td><td>-205.0</td><td>-152.8</td><td>-282.8</td><td>-250.8</td></tr><tr><td>103.72</td><td>-205.0</td><td>98.1</td><td>-282.8</td><td></td></tr><tr><td>103.65</td><td>-207.4</td><td>93.2</td><td>-276.1</td><td></td></tr><tr><td>102.66</td><td>-242.3</td><td>15.4</td><td>-221.0</td><td></td></tr><tr><td>102.62</td><td>-243.8</td><td>11.9</td><td>-220.5</td><td></td></tr><tr><td>102.55</td><td>-246.4</td><td>6.7</td><td>-219.9</td><td></td></tr><tr><td>102.10</td><td>-249.9</td><td>4.5</td><td>-218.1</td><td></td></tr><tr><td>101.70</td><td>-247.2</td><td>16.1</td><td>-214.4</td><td></td></tr><tr><td>100.70</td><td>-227.5</td><td>74.3</td><td>-168.4</td><td></td></tr><tr><td>99.70</td><td>-224.7</td><td>85.2</td><td>-84.1</td><td></td></tr><tr><td>98.70</td><td>-239.8</td><td>45.8</td><td>-14.6</td><td></td></tr><tr><td>98.10</td><td>-248.7</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.700	105.650	18.705	26.479	0.00	0.00	105.650	105.500	26.479	27.589	0.00	0.00	105.500	105.320	27.589	28.291	0.00	1.80	105.320	104.650	34.679	37.530	1.80	8.50	104.650	103.720	37.530	41.487	8.50	17.80	103.720	103.650	41.487	41.785	17.80	18.50	103.650	102.660	41.785	45.998	18.50	28.40	102.660	102.620	45.998	46.168	28.40	28.80	102.620	102.550	34.079	34.366	28.80	29.50	102.550	102.100	34.366	36.212	0.00	0.00	102.100	101.700	36.212	37.853	0.00	0.00	101.700	100.699	37.853	41.956	0.00	0.00	100.699	99.699	41.956	46.059	0.00	0.00	99.699	98.699	46.059	50.161	0.00	0.00	98.699	98.099	50.161	52.623	0.00	0.00	98.099	80.000	52.623	126.857	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.62	102.55	0.00	0.00	102.55	102.10	-12.20	-31.33	102.10	101.70	-31.33	-48.33	101.70	100.70	-48.33	-90.85	100.70	99.70	-90.85	-133.36	99.70	98.70	-133.36	-175.88	98.70	98.10	-175.88	-201.38	98.10	80.00	-201.38	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.69	-0.1	0.0	0.0		107.70	-24.9	-8.7	-3.6		107.45	-31.7	-12.2	-6.2		107.45	-86.3	-12.2	-41.2		106.70	-107.6	-26.0	-55.2		105.65	-140.4	-53.3	-96.0		105.50	-145.3	-57.9	-104.3		105.32	-151.4	-63.9	-115.3		104.65	-173.4	-95.9	-168.4		103.72	-205.0	-152.8	-282.8	-250.8	103.72	-205.0	98.1	-282.8		103.65	-207.4	93.2	-276.1		102.66	-242.3	15.4	-221.0		102.62	-243.8	11.9	-220.5		102.55	-246.4	6.7	-219.9		102.10	-249.9	4.5	-218.1		101.70	-247.2	16.1	-214.4		100.70	-227.5	74.3	-168.4		99.70	-224.7	85.2	-84.1		98.70	-239.8	45.8	-14.6		98.10	-248.7	0.0	0.0	
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105.500	105.320	27.589	28.291	0.00	1.80																																																																																																																																																																																																																																																																																																			
105.320	104.650	34.679	37.530	1.80	8.50																																																																																																																																																																																																																																																																																																			
104.650	103.720	37.530	41.487	8.50	17.80																																																																																																																																																																																																																																																																																																			
103.720	103.650	41.487	41.785	17.80	18.50																																																																																																																																																																																																																																																																																																			
103.650	102.660	41.785	45.998	18.50	28.40																																																																																																																																																																																																																																																																																																			
102.660	102.620	45.998	46.168	28.40	28.80																																																																																																																																																																																																																																																																																																			
102.620	102.550	34.079	34.366	28.80	29.50																																																																																																																																																																																																																																																																																																			
102.550	102.100	34.366	36.212	0.00	0.00																																																																																																																																																																																																																																																																																																			
102.100	101.700	36.212	37.853	0.00	0.00																																																																																																																																																																																																																																																																																																			
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98.699	98.099	50.161	52.623	0.00	0.00																																																																																																																																																																																																																																																																																																			
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statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																													
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Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																													
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 100.70 0.0 0.0 0.0 99.70 0.0 0.0 0.0 98.70 0.0 0.0 0.0 98.10 0.0 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] 108.70 -18.0 - - - 108.70 -18.0 - - - 108.70 -18.0 - - - 108.69 -18.0 - - - 108.69 -18.0 - - - 108.64 -17.8 - - - 107.75 -15.5 - - - 107.70 -15.4 - - - 107.70 -15.4 - - - 107.65 -15.2 - - - 107.50 -14.9 - - - 107.45 -14.7 - - - 107.45 -14.7 - - - 107.40 -14.6 - - - 106.75 -12.9 - - - 106.70 -12.8 - - - 106.70 -12.8 - - - 106.65 -12.7 - - - 105.70 -10.3 - - - 105.65 -10.2 - - - 105.65 -10.2 - - - 105.60 -10.0 - - - 105.55 -9.9 - - - 105.50 -9.8 - - - 105.50 -9.8 - - - 105.45 -9.7 - - - 105.36 -9.5 - - - 105.32 -9.4 - - - 105.32 -9.4 - - - 105.26 -9.2 - - - 104.70 -7.9 - - - 104.65 -7.8 - - - 104.65 -7.8 - - - 104.60 -7.7 - - - 103.77 -5.9 - - - 103.72 -5.8 - - - 103.72 -5.8 - - - 103.70 -5.8 - - - 103.70 -5.8 - - - 103.65 -5.7 - - - 103.65 -5.7 - - - 103.60 -5.6 - - - 102.70 -4.1 - - - 102.66 -4.0 - - - 102.66 -4.0 - - - 102.62 -3.9 - - - 102.62 -3.9 - - - 102.55 -3.8 0.00 0.00 0.00 102.55 -3.8 0.00 0.00 19.82 102.50 -3.7 0.00 0.00 23.27 102.15 -3.2 14.69 47.46 47.45 102.10 -3.2 14.69 46.43 50.91 102.10 -3.2 16.11 50.91 50.91 102.05 -3.1 16.11 49.80 54.36 101.75 -2.7 27.87 75.09 75.09 101.70 -2.6 27.87 73.32 78.54 101.70 -2.6 29.85 78.55 78.54 101.65 -2.6 29.85 76.68 82.00 100.75 -1.6 50.00 78.49 144.17 100.70 -1.5 50.00 76.05 147.63 100.70 -1.5 50.00 76.05 147.63 100.65 -1.5 50.00 73.64 151.08 </div> </div>		
Schnitt: Anlage D2 Schnitt 4R		Seite Anlage D2/42
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<div>99.75 -0.7 50.00 34.69 213.26</div> <div>99.70 -0.7 50.00 32.72 216.71</div> <div>99.70 -0.7 50.00 32.72 216.71</div> <div>99.65 -0.6 50.00 30.77 220.17</div> <div>98.75 0.1 50.00 -2.51 282.34</div> <div>98.70 0.1 50.00 -4.30 285.80</div> <div>98.70 0.1 50.00 -4.30 285.80</div> <div>98.65 0.1 50.00 -6.09 289.25</div> <div>98.15 0.5 50.00 -23.88 323.80</div> <div>98.10 0.5 50.00 -25.66 327.25</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.04071186</div> <div>Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m</div> <div>Profillänge = 10.60 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div> <div>G,k = 200.58 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 45.50 kN/m</div> <div>Eav,k = 63.67 kN/m (Eah,k = 360.53 kN/m)</div> <div>Bv,k = 78.44</div> <div>Summe V,k = 231.31 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand D = 0.88 m</div> <div>Verhältnisswert (min, max) = 0.00</div> <div>Spitzendruck qc,m = 7.50 MN/m²</div> <div>(gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m²</div> <div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung</div> <div>von bis qs,k [kN/m²] Bezeichnung</div> <div>102.55 98.10 55.00 s3: Flusskies, -sand</div> <div>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d</div> <div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m</div> <div>Rd = Rb,d + Rs1,d = 1039.87 kN/m</div> <div>Einwirkungen</div> <div>V,d = G,d - G',k + Eav,d + Pv,d = 240.70 - 0.00 + 73.22 + 54.60 = 368.52 kN/m</div> <div>=> µ = V,d / Rd = 368.52 / 1039.87 = 0.35</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt:	Anlage D2 Schnitt 4R	Seite Anlage D2/43
Kapitel:	7 LF 5 (BS-T, mit Lasten)	Archiv Nr.: D2/43
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage E2 Schnitt 5R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 10_BS 5_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.65</td><td>1.15</td><td>0.29</td><td>0.28</td><td>0.63</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.81</td><td>10.000</td><td>10.000</td></tr><tr><td>105.81</td><td>102.60</td><td>5.000</td><td>5.000</td></tr><tr><td>102.60</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 384.354 / 1222.685 = 0.314 Bettungslager Bh,d = 384.354 kN/m Erdwiderstand Eph,d = 1222.685 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.65	1.15	0.29	0.28	0.63	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.81	10.000	10.000	105.81	102.60	5.000	5.000	102.60	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.50	1.65	1.15	0.29	0.28	0.63	0.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.81	10.000	10.000																																														
105.81	102.60	5.000	5.000																																														
102.60	80.00	50.000	50.000																																														
Schnitt:	Anlage E2 Schnitt 5R	Seite Anlage E2/19.																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 19. für Standsicherheit																																															
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.81</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.60</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.253</td><td>13.268</td><td>17.378</td><td>0.00</td><td>0.00</td></tr><tr><td>106.253</td><td>106.000</td><td>17.378</td><td>19.250</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.810</td><td>19.250</td><td>20.657</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.500</td><td>24.873</td><td>27.511</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.400</td><td>27.511</td><td>27.936</td><td>0.00</td><td>1.00</td></tr><tr><td>105.400</td><td>105.000</td><td>27.936</td><td>29.638</td><td>1.00</td><td>5.00</td></tr><tr><td>105.000</td><td>104.450</td><td>29.638</td><td>31.978</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>103.450</td><td>31.978</td><td>36.234</td><td>5.00</td><td>5.00</td></tr><tr><td>103.450</td><td>102.600</td><td>36.234</td><td>39.850</td><td>5.00</td><td>5.00</td></tr><tr><td>102.600</td><td>102.450</td><td>29.578</td><td>30.193</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.800</td><td>30.193</td><td>32.860</td><td>5.00</td><td>5.00</td></tr><tr><td>101.800</td><td>101.450</td><td>32.860</td><td>34.296</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>34.296</td><td>38.399</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>38.399</td><td>42.501</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>42.501</td><td>46.604</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>46.604</td><td>48.040</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>48.040</td><td>122.273</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.81</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.60</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.25</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.81</td><td>0.00</td><td>-11.12</td></tr><tr><td>105.81</td><td>105.50</td><td>-13.96</td><td>-23.80</td></tr><tr><td>105.50</td><td>105.40</td><td>-23.80</td><td>-26.97</td></tr><tr><td>105.40</td><td>105.00</td><td>-26.97</td><td>-39.67</td></tr><tr><td>105.00</td><td>104.45</td><td>-39.67</td><td>-48.39</td></tr><tr><td>104.45</td><td>103.45</td><td>-48.39</td><td>-64.26</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	105.81	0.390	0.461	30.000	10.00	57.80	0.179	2	102.60	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.253	13.268	17.378	0.00	0.00	106.253	106.000	17.378	19.250	0.00	0.00	106.000	105.810	19.250	20.657	0.00	0.00	105.810	105.500	24.873	27.511	0.00	0.00	105.500	105.400	27.511	27.936	0.00	1.00	105.400	105.000	27.936	29.638	1.00	5.00	105.000	104.450	29.638	31.978	5.00	5.00	104.450	103.450	31.978	36.234	5.00	5.00	103.450	102.600	36.234	39.850	5.00	5.00	102.600	102.450	29.578	30.193	5.00	5.00	102.450	101.800	30.193	32.860	5.00	5.00	101.800	101.450	32.860	34.296	5.00	5.00	101.450	100.449	34.296	38.399	5.00	5.00	100.449	99.449	38.399	42.501	5.00	5.00	99.449	98.449	42.501	46.604	5.00	5.00	98.449	98.099	46.604	48.040	5.00	5.00	98.099	80.000	48.040	122.273	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.81	5.005	5.388	30.000	-20.01	18.10	2	102.60	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.25	106.00	0.00	0.00	106.00	105.81	0.00	-11.12	105.81	105.50	-13.96	-23.80	105.50	105.40	-23.80	-26.97	105.40	105.00	-26.97	-39.67	105.00	104.45	-39.67	-48.39	104.45	103.45	-48.39	-64.26	<div>Statisch geprüft</div> <div>21.06.2024</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>103.45102.60-64.26-77.75</div><div>102.60102.45-139.63-146.01</div><div>102.45101.80-146.01-173.64</div><div>101.80101.45-173.64-188.52</div><div>101.45100.45-188.52-231.03</div><div>100.4599.45-231.03-273.55</div><div>99.4598.45-273.55-316.06</div><div>98.4598.10-316.06-330.94</div><div>98.1080.00-330.94-1100.18</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-12.8-1.4-0.3</div><div>106.45-23.8-5.7-1.6</div><div>106.25-29.4-9.2-3.1</div><div>106.00-36.8-14.5-6.1</div><div>105.81-40.8-17.4-9.2</div><div>105.50-44.9-16.8-14.5</div><div>105.40-46.1-16.7-16.2</div><div>105.00-51.4-18.5-23.1</div><div>104.45-59.1-25.3-35.0</div><div>103.45-74.5-46.6-70.0</div><div>102.60-88.9-73.5-120.4</div><div>102.45-83.1-56.7-130.2</div><div>101.80-63.41.3-146.9</div><div>101.45-56.123.3-142.5</div><div>100.45-45.956.5-99.1</div><div>99.45-48.352.9-41.7</div><div>98.45-60.918.8-3.4</div><div>98.10-67.60.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.25-25.6-8.0-2.7</div><div>106.00-32.0-12.6-5.3</div><div>105.81-35.5-15.1-8.0</div><div>105.50-39.0-14.7-12.6</div><div>105.40-40.1-14.6-14.1</div><div>105.00-44.7-16.1-20.1</div><div>104.45-51.4-22.0-30.4</div><div>103.45-64.8-40.4-60.8</div><div>102.60-77.3-63.6-104.5</div><div>102.45-72.3-49.1-112.9</div><div>101.80-55.21.2-127.4</div><div>101.45-48.820.3-123.5</div><div>100.45-39.948.9-85.9</div><div>99.45-42.045.9-36.1</div><div>98.45-53.016.3-2.9</div><div>98.10-58.80.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.25-25.6-8.0-2.7</div><div>106.00-32.0-12.6-5.3</div><div>105.81-35.5-15.1-8.0</div><div>105.50-39.0-14.7-12.6</div><div>105.40-40.1-14.6-14.1</div><div>105.00-44.7-16.1-20.1</div><div>104.45-51.4-22.0-30.4</div><div>103.45-64.8-40.4-60.8</div><div>102.60-77.3-63.6-104.5</div></div></div></div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div><div>102.45</div><div>-72.3</div><div>-49.1</div><div>-112.9</div></div><div><div>101.80</div><div>-55.2</div><div>1.2</div><div>-127.4</div></div><div><div>101.45</div><div>-48.8</div><div>20.3</div><div>-123.5</div></div><div><div>100.45</div><div>-39.9</div><div>48.9</div><div>-85.9</div></div><div><div>99.45</div><div>-42.0</div><div>45.9</div><div>-36.1</div></div><div><div>98.45</div><div>-53.0</div><div>16.3</div><div>-2.9</div></div><div><div>98.10</div><div>-58.8</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.25</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.81</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.40</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.60</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.80</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig.Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div></div><div><div>107.45</div><div>-8.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-8.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-7.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-7.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-7.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-7.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-7.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.30</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-6.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-6.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-6.5</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-6.5</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-6.5</div><div>0.00</div><div>0.00</div><div>4.52</div></div><div><div>105.86</div><div>-6.4</div><div>2.13</div><div>13.55</div><div>13.55</div></div><div><div>105.81</div><div>-6.3</div><div>2.13</div><div>13.43</div><div>18.07</div></div><div><div>105.81</div><div>-6.3</div><div>3.59</div><div>22.68</div><div>22.68</div></div><div><div>105.76</div><div>-6.3</div><div>3.59</div><div>22.46</div><div>25.35</div></div><div><div>105.55</div><div>-6.0</div><div>5.00</div><div>30.04</div><div>36.01</div></div><div><div>105.50</div><div>-5.9</div><div>5.00</div><div>29.73</div><div>38.67</div></div><div><div>105.50</div><div>-5.9</div><div>5.00</div><div>29.73</div><div>38.67</div></div><div><div>105.45</div><div>-5.9</div><div>5.00</div><div>29.43</div><div>41.25</div></div><div><div>105.45</div><div>-5.9</div><div>5.00</div><div>29.43</div><div>41.25</div></div><div><div>105.40</div><div>-5.8</div><div>5.00</div><div>29.13</div><div>43.83</div></div><div><div>105.40</div><div>-5.8</div><div>5.00</div><div>29.13</div><div>43.83</div></div><div><div>105.35</div><div>-5.8</div><div>5.00</div><div>28.84</div><div>46.41</div></div><div><div>105.05</div><div>-5.4</div><div>5.00</div><div>27.06</div><div>61.88</div></div><div><div>105.00</div><div>-5.4</div><div>5.00</div><div>26.76</div><div>64.46</div></div><div><div>105.00</div><div>-5.4</div><div>5.00</div><div>26.76</div><div>64.46</div></div><div><div>104.95</div><div>-5.3</div><div>5.00</div><div>26.47</div><div>65.75</div></div><div><div>104.50</div><div>-4.8</div><div>5.00</div><div>23.83</div><div>77.35</div></div><div><div>104.45</div><div>-4.7</div><div>5.00</div><div>23.54</div><div>78.64</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage E2 Schnitt 5R</td><td colspan="2">Seite Anlage E2/4</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">1 LF 1.1 (BS-T, ohne Lasten)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage E2 Schnitt 5R		Seite Anlage E2/4		Kapitel:		1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage E2 Schnitt 5R		Seite Anlage E2/4																			
Kapitel:		1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.:																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																			

Statisch geprüft

für

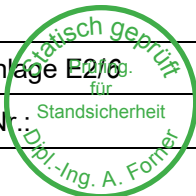
Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>104.45</div><div>-4.7</div><div>5.00</div><div>23.54</div><div>78.64</div></div><div><div>104.40</div><div>-4.7</div><div>5.00</div><div>23.25</div><div>79.93</div></div><div><div>103.50</div><div>-3.6</div><div>5.00</div><div>18.19</div><div>103.13</div></div><div><div>103.45</div><div>-3.6</div><div>5.00</div><div>17.92</div><div>104.42</div></div><div><div>103.45</div><div>-3.6</div><div>5.00</div><div>17.92</div><div>104.42</div></div><div><div>103.40</div><div>-3.5</div><div>5.00</div><div>17.65</div><div>105.71</div></div><div><div>102.65</div><div>-2.8</div><div>5.00</div><div>13.79</div><div>125.05</div></div><div><div>102.60</div><div>-2.7</div><div>5.00</div><div>13.54</div><div>126.34</div></div><div><div>102.60</div><div>-2.7</div><div>50.00</div><div>135.44</div><div>226.90</div></div><div><div>102.55</div><div>-2.7</div><div>50.00</div><div>133.03</div><div>230.35</div></div><div><div>102.50</div><div>-2.6</div><div>50.00</div><div>130.65</div><div>233.81</div></div><div><div>102.45</div><div>-2.6</div><div>50.00</div><div>128.29</div><div>237.26</div></div><div><div>102.45</div><div>-2.6</div><div>50.00</div><div>128.29</div><div>237.26</div></div><div><div>102.40</div><div>-2.5</div><div>50.00</div><div>125.96</div><div>240.71</div></div><div><div>101.85</div><div>-2.0</div><div>50.00</div><div>101.98</div><div>278.71</div></div><div><div>101.80</div><div>-2.0</div><div>50.00</div><div>99.96</div><div>282.17</div></div><div><div>101.80</div><div>-2.0</div><div>50.00</div><div>99.96</div><div>282.17</div></div><div><div>101.75</div><div>-2.0</div><div>50.00</div><div>97.96</div><div>285.62</div></div><div><div>101.50</div><div>-1.8</div><div>50.00</div><div>88.40</div><div>302.89</div></div><div><div>101.45</div><div>-1.7</div><div>50.00</div><div>86.57</div><div>306.35</div></div><div><div>101.45</div><div>-1.7</div><div>50.00</div><div>86.57</div><div>306.35</div></div><div><div>101.40</div><div>-1.7</div><div>50.00</div><div>84.76</div><div>309.80</div></div><div><div>100.50</div><div>-1.1</div><div>50.00</div><div>56.37</div><div>371.98</div></div><div><div>100.45</div><div>-1.1</div><div>50.00</div><div>55.00</div><div>375.43</div></div><div><div>100.45</div><div>-1.1</div><div>50.00</div><div>55.00</div><div>375.43</div></div><div><div>100.40</div><div>-1.1</div><div>50.00</div><div>53.64</div><div>378.89</div></div><div><div>99.50</div><div>-0.6</div><div>50.00</div><div>31.75</div><div>441.06</div></div><div><div>99.45</div><div>-0.6</div><div>50.00</div><div>30.64</div><div>444.52</div></div><div><div>99.45</div><div>-0.6</div><div>50.00</div><div>30.64</div><div>444.52</div></div><div><div>99.40</div><div>-0.6</div><div>50.00</div><div>29.54</div><div>447.97</div></div><div><div>98.50</div><div>-0.2</div><div>50.00</div><div>10.51</div><div>510.15</div></div><div><div>98.45</div><div>-0.2</div><div>50.00</div><div>9.48</div><div>513.60</div></div><div><div>98.45</div><div>-0.2</div><div>50.00</div><div>9.48</div><div>513.60</div></div><div><div>98.40</div><div>-0.2</div><div>50.00</div><div>8.45</div><div>517.06</div></div><div><div>98.15</div><div>-0.1</div><div>50.00</div><div>3.28</div><div>534.33</div></div><div><div>98.10</div><div>0.0</div><div>50.00</div><div>2.25</div><div>537.78</div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02365521 Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</div></div>		
Schnitt: Anlage E2 Schnitt 5R	Seite Anlage E2/5	
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025	
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</div> <div>$G_{,k} = 176.93 \text{ kN/m}$</div> <div>$G'_{,k} = 0.00 \text{ kN/m}$</div> <div>$P_{v,k} = 0.00 \text{ kN/m}$</div> <div>$E_{av,k} = 51.89 \text{ kN/m}$ ($E_{ah,k} = 296.90 \text{ kN/m}$)</div> <div>$B_{v,k} = 123.06$</div> <div>Summe $V_{,k} = 105.76 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand $D = 0.88 \text{ m}$</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div> <div>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div> <div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.81</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.81</td><td>102.60</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.60</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 98.10 m = 1.000 m²/m/m $\implies R_{s1,d}$</div> <div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 247.50 / 1.40 = 176.79 \text{ kN/m}$</div> <div>$R_{,d} = R_{b,d} + R_{s1,d} = 1041.83 \text{ kN/m}$</div> <div>Einwirkungen</div> <div>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 59.67 + 0.00 = 271.99 \text{ kN/m}$</div> <div>$\implies \mu = V_{,d} / R_{,d} = 271.99 / 1041.83 = 0.26$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.81	0.00	S1: Auffüllungen	105.81	102.60	0.00	S2: Auelehm	102.60	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.81	0.00	S1: Auffüllungen															
105.81	102.60	0.00	S2: Auelehm															
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Schnitt:	Anlage E2 Schnitt 5R	Seite Anlage E2/6																
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 11_BS 5_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.65 1.15 0.29 0.28 0.63 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.65 107.45 107.45 107.45 105.81 105.13 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.81 10.000 10.000 105.81 102.60 5.000 5.000 102.60 80.00 50.000 50.000</div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																															
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<div>Ausnutzungsgrad $\mu_e = 436.705 / 1125.291 = 0.388$ Bettungslager $B_{h,d} = 436.705 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1125.291 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>1</td><td>105.81</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.60</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[-]</th><th></th></tr></thead><tbody><tr><td>1</td><td>105.81</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.770</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.770</td><td>20.174</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.253</td><td>20.175</td><td>24.878</td><td>0.00</td><td>0.00</td></tr><tr><td>106.253</td><td>106.000</td><td>24.878</td><td>27.044</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.815</td><td>27.044</td><td>28.416</td><td>0.00</td><td>0.00</td></tr><tr><td>105.815</td><td>105.810</td><td>28.416</td><td>28.424</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.500</td><td>34.850</td><td>35.232</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.447</td><td>35.232</td><td>35.070</td><td>0.00</td><td>0.53</td></tr><tr><td>105.447</td><td>105.127</td><td>35.070</td><td>34.104</td><td>0.53</td><td>3.73</td></tr><tr><td>105.127</td><td>105.000</td><td>34.104</td><td>34.644</td><td>3.73</td><td>5.00</td></tr><tr><td>105.000</td><td>104.450</td><td>34.644</td><td>36.984</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>103.450</td><td>36.984</td><td>41.239</td><td>5.00</td><td>5.00</td></tr><tr><td>103.450</td><td>102.600</td><td>41.239</td><td>44.856</td><td>5.00</td><td>5.00</td></tr><tr><td>102.600</td><td>102.450</td><td>33.144</td><td>33.760</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.900</td><td>33.760</td><td>36.016</td><td>5.00</td><td>5.00</td></tr><tr><td>101.900</td><td>101.450</td><td>36.016</td><td>37.862</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>37.862</td><td>41.965</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>41.965</td><td>46.068</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>46.068</td><td>50.171</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>50.171</td><td>51.607</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.607</td><td>125.840</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>$w(\text{oben})$</th><th>$w(\text{unten})$</th><th>$z(\text{oben})$</th><th>$z(\text{unten})$</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> 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Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>100.45 -24.7 65.3 -112.5 99.45 -26.3 59.9 -46.9 98.45 -39.6 21.0 -3.8 98.10 -45.6 0.0 0.0</p> <p>Schnittgrößen (g+w,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 107.45 0.0 0.0 0.0 106.89 -12.1 -3.8 -0.9 106.45 -22.7 -10.4 -3.9 106.25 -28.0 -14.8 -6.3 106.00 -35.2 -21.4 -10.9 105.81 -38.7 -25.3 -15.3 105.81 -38.8 -25.4 -15.4 105.50 -42.2 -27.2 -23.7 105.45 -42.7 -27.0 -25.1 105.13 -45.6 -27.1 -33.7 105.00 -46.8 -27.6 -37.2 104.45 -52.5 -32.3 -53.5 103.45 -64.4 -50.3 -93.8 102.60 -76.1 -74.7 -146.4 102.45 -69.3 -56.3 -156.2 101.90 -49.1 -1.3 -171.2 101.45 -37.5 30.5 -164.2 100.45 -24.7 65.3 -112.5 99.45 -26.3 59.9 -46.9 98.45 -39.6 21.0 -3.8 98.10 -45.6 0.0 0.0</p> <p>Schnittgrößen (q,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 107.45 0.0 0.0 0.0 106.89 0.0 0.0 0.0 106.45 0.0 0.0 0.0 106.25 0.0 0.0 0.0 106.00 0.0 0.0 0.0 105.81 0.0 0.0 0.0 105.81 0.0 0.0 0.0 105.50 0.0 0.0 0.0 105.45 0.0 0.0 0.0 105.13 0.0 0.0 0.0 105.00 0.0 0.0 0.0 104.45 0.0 0.0 0.0 103.45 0.0 0.0 0.0 102.60 0.0 0.0 0.0 102.45 0.0 0.0 0.0 101.90 0.0 0.0 0.0 101.45 0.0 0.0 0.0 100.45 0.0 0.0 0.0 99.45 0.0 0.0 0.0 98.45 0.0 0.0 0.0 98.10 0.0 0.0 0.0</p> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] 107.45 -10.9 - - - 107.45 -10.9 - - - 107.45 -10.9 - - - 107.40 -10.8 - - - 106.95 -10.1 - - - 106.89 -10.0 - - - 106.89 -10.0 - - - 106.84 -9.9 - - - 106.50 -9.3 - - - 106.45 -9.2 - - -</p>		
Schnitt:	Anlage E2 Schnitt 5R	Seite Anlage E2/10
Kapitel:	2 LF 1.2 (BS-T, mit Lasten)	Archiv Nr.: 210
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
106.45	-9.2	-	-	-	
106.40	-9.2	-	-	-	
106.30	-9.0	-	-	-	
106.25	-8.9	-	-	-	
106.25	-8.9	-	-	-	
106.20	-8.8	-	-	-	
106.05	-8.6	-	-	-	
106.00	-8.5	0.00	0.00	0.00	
106.00	-8.5	0.00	0.00	0.00	
105.95	-8.4	0.00	0.00	4.41	
105.86	-8.3	1.60	13.22	13.22	
105.81	-8.2	1.60	13.09	17.62	
105.81	-8.2	2.15	17.62	17.62	
105.81	-8.2	2.15	17.60	18.07	
105.81	-8.2	2.77	22.69	22.68	
105.76	-8.1	2.77	22.45	25.35	
105.55	-7.8	4.64	36.01	36.01	
105.50	-7.7	4.64	35.62	38.67	
105.50	-7.7	5.00	38.39	38.67	
105.45	-7.6	5.00	37.95	41.42	
105.45	-7.6	5.00	37.95	41.42	
105.39	-7.5	5.00	37.52	44.17	
105.18	-7.2	5.00	35.78	55.16	
105.13	-7.1	5.00	35.35	57.90	
105.13	-7.1	5.00	35.35	57.90	
105.08	-7.0	5.00	35.01	60.09	
105.04	-6.9	5.00	34.67	62.27	
105.00	-6.9	5.00	34.32	64.46	
105.00	-6.9	5.00	34.32	64.46	
104.95	-6.8	5.00	33.92	65.75	
104.50	-6.1	5.00	30.34	77.35	
104.45	-6.0	5.00	29.95	78.64	
104.45	-6.0	5.00	29.95	78.64	
104.40	-5.9	5.00	29.55	79.93	
103.50	-4.5	5.00	22.74	103.13	
103.45	-4.5	5.00	22.38	104.42	
103.45	-4.5	5.00	22.38	104.42	
103.40	-4.4	5.00	22.02	105.71	
102.65	-3.4	5.00	16.88	125.05	
102.60	-3.3	5.00	16.56	126.34	
102.60	-3.3	50.00	165.63	226.90	
102.55	-3.2	50.00	162.46	230.35	
102.50	-3.2	50.00	159.31	233.81	
102.45	-3.1	50.00	156.20	237.26	
102.45	-3.1	50.00	156.20	237.26	
102.40	-3.1	50.00	153.12	240.71	
101.95	-2.5	50.00	126.99	271.80	
101.90	-2.5	50.00	124.26	275.26	
101.90	-2.5	50.00	124.26	275.26	
101.85	-2.4	50.00	121.58	278.71	
101.50	-2.1	50.00	103.77	302.89	
101.45	-2.0	50.00	101.37	306.35	
101.45	-2.0	50.00	101.37	306.35	
101.40	-2.0	50.00	99.01	309.80	
100.50	-1.2	50.00	61.87	371.98	
100.45	-1.2	50.00	60.08	375.43	
100.45	-1.2	50.00	60.08	375.43	
100.40	-1.2	50.00	58.31	378.89	
99.50	-0.6	50.00	29.70	441.06	
99.45	-0.6	50.00	28.25	444.52	
99.45	-0.6	50.00	28.25	444.52	
99.40	-0.5	50.00	26.81	447.97	
98.50	0.0	50.00	1.92	510.15	
98.45	0.0	50.00	0.57	513.60	
98.45	0.0	50.00	0.57	513.60	
98.40	0.0	50.00	-0.78	517.06	
98.15	0.2	50.00	-7.54	534.33	
98.10	0.2	50.00	-8.89	537.78	
Schnitt: Anlage E2 Schnitt 5R				Seite Anlage E2/11	
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025		



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03094617 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$ $G_{k} = 176.93 \text{ kN/m}$ $G'_{k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 59.33 \text{ kN/m}$ ($E_{ah,k} = 340.98 \text{ kN/m}$) $B_{v,k} = 138.97$ Summe $V_{k} = 97.29 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>106.00</td><td>105.81</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.81</td><td>102.60</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.60</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table><div>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 247.50 / 1.40 = 176.79 \text{ kN/m}$ $R_{d} = R_{b,d} + R_{s1,d} = 1041.83 \text{ kN/m}$</div></div> <div>Einwirkungen $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 68.23 + 0.00 = 280.54 \text{ kN/m}$ $\Rightarrow \mu = V_{d} / R_{d} = 280.54 / 1041.83 = 0.27$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.81	0.00	S1: Auffüllungen	105.81	102.60	0.00	S2: Auelehm	102.60	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.81	0.00	S1: Auffüllungen															
105.81	102.60	0.00	S2: Auelehm															
102.60	98.10	55.00	s3: Flussskies, -sand															
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/12																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 2112																
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>3 LF 2.1 (BS-T, ohne Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 12_BS 5_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.65 1.15 0.29 0.28 0.63 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 290.465 / 375.027 = 0.775$ Bettungslager $B_{h,d} = 290.465$ kN/m Erdwiderstand $E_{ph,d} = 375.027$ kN/m</div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/13
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																											
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																											
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-95.73</td><td>-82.90</td><td>-82.90</td><td>-7.97</td><td>6.900E+4</td><td>2.100E+7</td><td>-105.69</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.1</td><td>0.0</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.2</td><td>0.1</td><td>-95.73</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 5\Rechtes Ufer\10_BS 5_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <table><tr><td>Anker/Steife</td><td>Tiefe</td><td>Vorverformung</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0077</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.81</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.60</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.253</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>106.253</td><td>105.810</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.500</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>27.540</td><td>27.540</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>27.540</td><td>27.540</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.500</td><td>22.950</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>104.500</td><td>104.400</td><td>22.950</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>22.950</td><td>22.950</td><td>5.00</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-95.73	-82.90	-82.90	-7.97	6.900E+4	2.100E+7	-105.69	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.8	0.0	-95.73	0.00	0.00	-0.90	106.95	-9.0	0.0	-95.73	0.00	0.00	-0.90	106.95	-9.0	0.0	-95.73	0.00	0.00	-0.80	106.95	-9.1	0.0	-95.73	0.00	0.00	-0.70	106.95	-9.3	0.0	-95.73	0.00	0.00	-0.60	106.95	-9.4	0.0	-95.73	0.00	0.00	-0.50	106.95	-9.5	0.0	-95.73	0.00	0.00	-0.40	106.95	-9.7	0.0	-95.73	0.00	0.00	-0.30	106.95	-9.8	0.0	-95.73	0.00	0.00	-0.20	106.95	-10.0	0.0	-95.73	0.00	0.00	-0.10	106.95	-10.1	0.0	-95.73	0.00	0.00	0.00	106.95	-10.2	0.1	-95.73	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0077	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.81	0.390	0.461	30.000	10.00	57.80	0.179	2	102.60	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	27.540	27.540	0.00	0.00	106.950	106.886	27.540	27.540	0.00	0.00	106.886	106.450	27.540	27.540	0.00	0.00	106.450	106.253	27.540	27.540	0.00	0.00	106.253	105.810	27.540	27.540	0.00	0.00	105.810	105.500	27.540	27.540	0.00	0.00	105.500	105.450	27.540	27.540	0.00	0.50	105.450	105.000	27.540	27.540	0.50	5.00	105.000	104.500	22.950	22.950	5.00	5.00	104.500	104.400	22.950	22.950	5.00	5.00	104.400	103.400	22.950	22.950	5.00	5.00	<div>Schnitt: Anlage E2 Schnitt 5R</div> <div>Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>	<div>Seite Anlage E2/14</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																			
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Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.60</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.6</td><td>-15.8</td><td>-4.0</td><td>-95.7</td></tr><tr><td>106.95</td><td>-16.6</td><td>79.9</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.8</td><td>77.9</td><td>1.1</td><td></td></tr><tr><td>106.45</td><td>-33.3</td><td>64.1</td><td>32.0</td><td></td></tr><tr><td>106.25</td><td>-39.9</td><td>57.8</td><td>44.0</td><td></td></tr><tr><td>105.81</td><td>-54.6</td><td>43.8</td><td>66.5</td><td></td></tr><tr><td>105.50</td><td>-64.0</td><td>34.0</td><td>78.6</td><td></td></tr><tr><td>105.45</td><td>-65.5</td><td>32.4</td><td>80.3</td><td></td></tr><tr><td>105.00</td><td>-79.1</td><td>16.6</td><td>91.4</td><td></td></tr><tr><td>104.50</td><td>-93.5</td><td>0.4</td><td>95.6</td><td></td></tr><tr><td>104.40</td><td>-96.4</td><td>-2.8</td><td>95.5</td><td></td></tr><tr><td>103.40</td><td>-125.2</td><td>-35.2</td><td>76.5</td><td></td></tr><tr><td>102.60</td><td>-148.3</td><td>-61.1</td><td>38.0</td><td></td></tr><tr><td>102.55</td><td>-149.9</td><td>-62.7</td><td>34.9</td><td></td></tr><tr><td>102.45</td><td>-152.7</td><td>-66.6</td><td>28.4</td><td></td></tr><tr><td>101.85</td><td>-158.7</td><td>-74.1</td><td>-15.1</td><td></td></tr><tr><td>101.45</td><td>-156.4</td><td>-64.2</td><td>-43.1</td><td></td></tr><tr><td>100.45</td><td>-131.2</td><td>6.6</td><td>-75.8</td><td></td></tr><tr><td>99.45</td><td>-116.5</td><td>46.3</td><td>-43.9</td><td></td></tr><tr><td>98.45</td><td>-125.0</td><td>22.7</td><td>-4.2</td><td></td></tr><tr><td>98.10</td><td>-131.7</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.400	102.600	22.950	22.950	5.00	5.00	102.600	102.550	22.950	22.950	5.00	5.00	102.550	102.450	29.783	30.193	5.00	5.00	102.450	101.850	30.193	32.655	5.00	5.00	101.850	101.450	32.655	34.296	5.00	5.00	101.450	100.449	34.296	38.399	5.00	5.00	100.449	99.449	38.399	42.501	5.00	5.00	99.449	98.449	42.501	46.604	5.00	5.00	98.449	98.099	46.604	48.040	5.00	5.00	98.099	80.000	48.040	122.273	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.60	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.6	-15.8	-4.0	-95.7	106.95	-16.6	79.9	-4.0		106.89	-18.8	77.9	1.1		106.45	-33.3	64.1	32.0		106.25	-39.9	57.8	44.0		105.81	-54.6	43.8	66.5		105.50	-64.0	34.0	78.6		105.45	-65.5	32.4	80.3		105.00	-79.1	16.6	91.4		104.50	-93.5	0.4	95.6		104.40	-96.4	-2.8	95.5		103.40	-125.2	-35.2	76.5		102.60	-148.3	-61.1	38.0		102.55	-149.9	-62.7	34.9		102.45	-152.7	-66.6	28.4		101.85	-158.7	-74.1	-15.1		101.45	-156.4	-64.2	-43.1		100.45	-131.2	6.6	-75.8		99.45	-116.5	46.3	-43.9		98.45	-125.0	22.7	-4.2		98.10	-131.7	0.0	0.0	
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Dipl.-Ing. A. Forner



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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.30</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-4.6</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-4.6</td><td>0.76</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.5</td><td>0.76</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-4.5</td><td>1.53</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-4.4</td><td>1.53</td><td>6.82</td><td>10.36</td></tr><tr><td>101.90</td><td>-3.8</td><td>11.71</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-3.8</td><td>11.71</td><td>44.19</td><td>48.36</td></tr><tr><td>101.85</td><td>-3.8</td><td>12.82</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-3.7</td><td>12.82</td><td>47.58</td><td>51.81</td></tr><tr><td>101.50</td><td>-3.3</td><td>21.66</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.3</td><td>21.66</td><td>71.24</td><td>75.99</td></tr><tr><td>101.45</td><td>-3.3</td><td>23.11</td><td>76.00</td><td>75.99</td></tr><tr><td>101.40</td><td>-3.2</td><td>23.11</td><td>74.61</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.2</td><td>50.00</td><td>109.35</td><td>141.63</td></tr></table>						101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.3	-	-	-	107.40	-9.2	-	-	-	107.00	-8.9	-	-	-	106.95	-8.9	-	-	-	106.95	-8.9	-	-	-	106.89	-8.8	-	-	-	106.89	-8.8	-	-	-	106.84	-8.8	-	-	-	106.50	-8.5	-	-	-	106.45	-8.5	-	-	-	106.45	-8.5	-	-	-	106.40	-8.5	-	-	-	106.30	-8.4	-	-	-	106.25	-8.3	-	-	-	106.25	-8.3	-	-	-	106.20	-8.3	-	-	-	105.86	-8.0	-	-	-	105.81	-8.0	-	-	-	105.81	-8.0	-	-	-	105.76	-7.9	-	-	-	105.55	-7.8	-	-	-	105.50	-7.7	-	-	-	105.50	-7.7	-	-	-	105.45	-7.7	-	-	-	105.45	-7.7	-	-	-	105.40	-7.6	-	-	-	105.05	-7.3	-	-	-	105.00	-7.3	-	-	-	105.00	-7.3	-	-	-	104.95	-7.2	-	-	-	104.55	-6.9	-	-	-	104.50	-6.8	-	-	-	104.50	-6.8	-	-	-	104.45	-6.8	-	-	-	104.45	-6.8	-	-	-	104.40	-6.7	-	-	-	104.40	-6.7	-	-	-	104.35	-6.7	-	-	-	103.45	-5.7	-	-	-	103.40	-5.6	-	-	-	103.40	-5.6	-	-	-	103.35	-5.6	-	-	-	102.65	-4.7	-	-	-	102.60	-4.7	-	-	-	102.60	-4.7	-	-	-	102.55	-4.6	0.00	0.00	0.00	102.55	-4.6	0.00	0.00	0.00	102.50	-4.6	0.00	0.00	3.45	102.50	-4.6	0.76	3.45	3.45	102.45	-4.5	0.76	3.41	6.91	102.45	-4.5	1.53	6.91	6.91	102.40	-4.4	1.53	6.82	10.36	101.90	-3.8	11.71	44.91	44.91	101.85	-3.8	11.71	44.19	48.36	101.85	-3.8	12.82	48.36	48.36	101.80	-3.7	12.82	47.58	51.81	101.50	-3.3	21.66	72.54	72.54	101.45	-3.3	21.66	71.24	75.99	101.45	-3.3	23.11	76.00	75.99	101.40	-3.2	23.11	74.61	79.45	100.50	-2.2	50.00	109.35	141.63
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102.55	-4.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.55	-4.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.50	-4.6	0.00	0.00	3.45																																																																																																																																																																																																																																																																																																																																																
102.50	-4.6	0.76	3.45	3.45																																																																																																																																																																																																																																																																																																																																																
102.45	-4.5	0.76	3.41	6.91																																																																																																																																																																																																																																																																																																																																																
102.45	-4.5	1.53	6.91	6.91																																																																																																																																																																																																																																																																																																																																																
102.40	-4.4	1.53	6.82	10.36																																																																																																																																																																																																																																																																																																																																																
101.90	-3.8	11.71	44.91	44.91																																																																																																																																																																																																																																																																																																																																																
101.85	-3.8	11.71	44.19	48.36																																																																																																																																																																																																																																																																																																																																																
101.85	-3.8	12.82	48.36	48.36																																																																																																																																																																																																																																																																																																																																																
101.80	-3.7	12.82	47.58	51.81																																																																																																																																																																																																																																																																																																																																																
101.50	-3.3	21.66	72.54	72.54																																																																																																																																																																																																																																																																																																																																																
101.45	-3.3	21.66	71.24	75.99																																																																																																																																																																																																																																																																																																																																																
101.45	-3.3	23.11	76.00	75.99																																																																																																																																																																																																																																																																																																																																																
101.40	-3.2	23.11	74.61	79.45																																																																																																																																																																																																																																																																																																																																																
100.50	-2.2	50.00	109.35	141.63																																																																																																																																																																																																																																																																																																																																																
Schnitt: Anlage E2 Schnitt 5R				Seite Anlage E2/17																																																																																																																																																																																																																																																																																																																																																
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																									
Auftraggeber: Stadtverwaltung Leipzig		-																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																									
<div><table><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.58</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.58</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.1</td><td>50.00</td><td>103.83</td><td>148.53</td></tr><tr><td>99.50</td><td>-1.1</td><td>50.00</td><td>56.43</td><td>210.71</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>53.90</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>53.90</td><td>214.17</td></tr><tr><td>99.40</td><td>-1.0</td><td>50.00</td><td>51.38</td><td>217.62</td></tr><tr><td>98.50</td><td>-0.1</td><td>50.00</td><td>6.86</td><td>279.80</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>4.42</td><td>283.25</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>4.42</td><td>283.25</td></tr><tr><td>98.40</td><td>0.0</td><td>50.00</td><td>1.97</td><td>286.71</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-10.25</td><td>303.98</td></tr><tr><td>98.10</td><td>0.3</td><td>50.00</td><td>-12.69</td><td>307.43</td></tr></table><p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05599857 Theoretischer Fußpunkt = 98.099 m</p><p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p><p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 51.89 kN/m (Eah,k = 296.90 kN/m) Bv,k = 99.94 Summe V,k = 128.88 kN/m (Druck)</p><p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p><p>Mantelreibung</p><table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table><p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p><p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 59.67 + 0.00 = 271.99 kN/m ==> µ = V,d / Rd = 271.99 / 1039.87 = 0.26</p><p>Horizontaler Wasserdruck herkömmlich bestimmt.</p></div>			100.45	-2.1	50.00	106.58	145.08	100.45	-2.1	50.00	106.58	145.08	100.40	-2.1	50.00	103.83	148.53	99.50	-1.1	50.00	56.43	210.71	99.45	-1.1	50.00	53.90	214.17	99.45	-1.1	50.00	53.90	214.17	99.40	-1.0	50.00	51.38	217.62	98.50	-0.1	50.00	6.86	279.80	98.45	-0.1	50.00	4.42	283.25	98.45	-0.1	50.00	4.42	283.25	98.40	0.0	50.00	1.97	286.71	98.15	0.2	50.00	-10.25	303.98	98.10	0.3	50.00	-12.69	307.43	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
100.45	-2.1	50.00	106.58	145.08																																																																							
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100.40	-2.1	50.00	103.83	148.53																																																																							
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99.40	-1.0	50.00	51.38	217.62																																																																							
98.50	-0.1	50.00	6.86	279.80																																																																							
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98.10	0.3	50.00	-12.69	307.43																																																																							
von	bis	qs,k [kN/m²]	Bezeichnung																																																																								
102.55	98.10	55.00	s3: Flussskies, -sand																																																																								
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/18																																																																									
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2116																																																																									
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																									

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																																																																					
Auftraggeber:	Stadtverwaltung Leipzig	-																																																																					
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<div><div>4</div><div>LF 2.2 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand</p> <p>=====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 13_BS 5_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.65</td><td>1.15</td><td>0.29</td><td>0.28</td><td>0.63</td><td>10.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Lasten (zweiseitig begrenzt)</p> <table><tr><td>Nr.</td><td>sig(v)</td><td>x(links)</td><td>x(rechts)</td><td>Tiefe</td><td>y(1)</td><td>y(2)</td><td>y(3)</td><td>y(4)</td><td>Verkehrslast</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>1</td><td>10.00</td><td>0.00</td><td>1.65</td><td>107.45</td><td>107.45</td><td>107.45</td><td>105.81</td><td>105.13</td><td>nein</td></tr></table> <p>Steuerparameter = 0.50</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 315.203 / 384.011 = 0.821 Bettungslager Bh,d = 315.203 kN/m Erdwiderstand Eph,d = 384.011 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.65	1.15	0.29	0.28	0.63	10.00	nein	Nr.	sig(v)	x(links)	x(rechts)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	1	10.00	0.00	1.65	107.45	107.45	107.45	105.81	105.13	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																															
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																																															
1	0.50	1.65	1.15	0.29	0.28	0.63	10.00	nein																																																															
Nr.	sig(v)	x(links)	x(rechts)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast																																																														
[-]	[kN/m²]	[m]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]																																																														
1	10.00	0.00	1.65	107.45	107.45	107.45	105.81	105.13	nein																																																														
von	bis	ks(oben)	ks(unten)																																																																				
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																																																				
102.55	80.00	50.000	50.000																																																																				
Schnitt:	Anlage E2 Schnitt 5R	Seite Anlage E2/19																																																																					
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr.:																																																																					
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																					

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Anker und Steifen
 $N, d' =$ Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nr.	y	Neigung	Länge	N, d	$N(g+q+w), k$	$N(g+w), k$	Nw, k	EA	EI	N, d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	106.95	0.00	1.00	-121.27	-105.09	-105.09	-8.12	6.900E+4	2.100E+7	-134.00

Zusätzlich für Steifen
Steife I
Vertikallast [kN/m²/m]: 0.00
max M, d [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx, d	wy, d	N, d	Q, d	M, d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	106.95	-8.8	0.0	-121.27	0.00	0.00
-0.90	106.95	-9.0	0.0	-121.27	0.00	0.00
-0.90	106.95	-9.0	0.0	-121.27	0.00	0.00
-0.80	106.95	-9.2	0.0	-121.27	0.00	0.00
-0.70	106.95	-9.4	0.0	-121.27	0.00	0.00
-0.60	106.95	-9.5	0.0	-121.27	0.00	0.00
-0.50	106.95	-9.7	0.0	-121.27	0.00	0.00
-0.40	106.95	-9.9	0.0	-121.27	0.00	0.00
-0.30	106.95	-10.1	0.0	-121.27	0.00	0.00
-0.20	106.95	-10.2	0.0	-121.27	0.00	0.00
-0.10	106.95	-10.4	0.1	-121.27	0.00	0.00
0.00	106.95	-10.6	0.1	-121.27	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_5\Rechtes_Ufer\10_BS_5_LF1.1 (ohne Lasten).vrb
eingeliesen.
Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	106.95	-0.0077

Bodenkennwerte

Schicht	UK	γ_{sat}, k	γ_{sat}, k	ϕ, k	$c(pas), k$	$c(akt), k$	$d(p)/\phi$	$d(a)/\phi$	q_c	c_u, k
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00


Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
(Erddruckbeiwerte für horizontales Gelände)
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	ϕ, k	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.81	0.390	0.461	30.000	10.00	57.80	0.179
2	102.60	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckkoordinaten ($[g+q], k$)

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
107.450	107.448	33.818	33.818	0.00
107.448	106.950	33.818	33.818	0.00
106.950	106.886	33.818	33.818	0.00
106.886	106.450	33.818	33.818	0.00
106.450	106.253	33.818	33.818	0.00
106.253	105.815	33.818	33.818	0.00
105.815	105.810	33.818	33.818	0.00
105.810	105.500	33.818	33.818	0.00
105.500	105.450	33.818	33.818	0.00
105.450	105.127	33.818	33.818	0.50

Schnitt:	Anlage E2	Schnitt 5R	Seite Anlage E2/20
Kapitel:	4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																									
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<table><tr><td>105.127</td><td>105.000</td><td>33.818</td><td>33.818</td><td>3.73</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.350</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>103.400</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.600</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>102.600</td><td>102.550</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>33.349</td><td>33.760</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>33.760</td><td>36.221</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>36.221</td><td>37.862</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>37.862</td><td>41.965</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>41.965</td><td>46.068</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>46.068</td><td>50.171</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>50.171</td><td>51.607</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.607</td><td>125.840</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.60</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-18.0</td><td>-19.4</td><td>-4.9</td><td>-121.3</td></tr><tr><td>106.95</td><td>-18.0</td><td>101.8</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.3</td><td>99.3</td><td>1.6</td><td></td></tr><tr><td>106.45</td><td>-35.9</td><td>82.4</td><td>41.2</td><td></td></tr><tr><td>106.25</td><td>-43.0</td><td>74.7</td><td>56.7</td><td></td></tr><tr><td>105.81</td><td>-58.7</td><td>57.7</td><td>85.7</td><td></td></tr><tr><td>105.81</td><td>-58.9</td><td>57.5</td><td>85.9</td><td></td></tr><tr><td>105.50</td><td>-68.9</td><td>45.4</td><td>101.9</td><td></td></tr><tr><td>105.45</td><td>-70.5</td><td>43.5</td><td>104.1</td><td></td></tr><tr><td>105.13</td><td>-80.9</td><td>30.1</td><td>116.0</td><td></td></tr><tr><td>105.00</td><td>-85.0</td><td>24.5</td><td>119.5</td><td></td></tr><tr><td>104.40</td><td>-103.3</td><td>1.4</td><td>127.3</td><td></td></tr><tr><td>104.35</td><td>-104.8</td><td>-0.5</td><td>127.3</td><td></td></tr><tr><td>103.40</td><td>-133.7</td><td>-37.0</td><td>109.5</td><td></td></tr><tr><td>102.60</td><td>-158.1</td><td>-67.7</td><td>67.6</td><td></td></tr><tr><td>102.55</td><td>-159.8</td><td>-69.6</td><td>64.2</td><td></td></tr><tr><td>102.45</td><td>-162.6</td><td>-73.9</td><td>57.0</td><td></td></tr><tr><td>101.85</td><td>-168.6</td><td>-83.8</td><td>8.4</td><td></td></tr><tr><td>101.45</td><td>-166.4</td><td>-75.6</td><td>-23.9</td><td></td></tr><tr><td>100.45</td><td>-139.6</td><td>-5.1</td><td>-69.6</td><td></td></tr><tr><td>99.45</td><td>-119.4</td><td>44.3</td><td>-43.9</td><td></td></tr><tr><td>98.45</td><td>-125.2</td><td>23.4</td><td>-4.3</td><td></td></tr><tr><td>98.10</td><td>-132.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>								105.127	105.000	33.818	33.818	3.73	5.00	105.000	104.400	28.182	28.182	5.00	5.00	104.400	104.350	28.182	28.182	5.00	5.00	104.350	103.400	28.182	28.182	5.00	5.00	103.400	102.600	28.182	28.182	5.00	5.00	102.600	102.550	28.182	28.182	5.00	5.00	102.550	102.450	33.349	33.760	5.00	5.00	102.450	101.850	33.760	36.221	5.00	5.00	101.850	101.450	36.221	37.862	5.00	5.00	101.450	100.449	37.862	41.965	5.00	5.00	100.449	99.449	41.965	46.068	5.00	5.00	99.449	98.449	46.068	50.171	5.00	5.00	98.449	98.099	50.171	51.607	5.00	5.00	98.099	80.000	51.607	125.840	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.60	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-18.0	-19.4	-4.9	-121.3	106.95	-18.0	101.8	-4.9		106.89	-20.3	99.3	1.6		106.45	-35.9	82.4	41.2		106.25	-43.0	74.7	56.7		105.81	-58.7	57.7	85.7		105.81	-58.9	57.5	85.9		105.50	-68.9	45.4	101.9		105.45	-70.5	43.5	104.1		105.13	-80.9	30.1	116.0		105.00	-85.0	24.5	119.5		104.40	-103.3	1.4	127.3		104.35	-104.8	-0.5	127.3		103.40	-133.7	-37.0	109.5		102.60	-158.1	-67.7	67.6		102.55	-159.8	-69.6	64.2		102.45	-162.6	-73.9	57.0		101.85	-168.6	-83.8	8.4		101.45	-166.4	-75.6	-23.9		100.45	-139.6	-5.1	-69.6		99.45	-119.4	44.3	-43.9		98.45	-125.2	23.4	-4.3		98.10	-132.0	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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<div>Schnittgrößen ([g+q+w],k)</div> 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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.30</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.13</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.13</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.08</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.04</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table>						105.13	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	104.35	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.60	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.45	0.0	0.0	0.0	101.85	0.0	0.0	0.0	101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.5	-	-	-	107.45	-9.5	-	-	-	107.45	-9.5	-	-	-	107.40	-9.5	-	-	-	107.00	-9.2	-	-	-	106.95	-9.2	-	-	-	106.95	-9.2	-	-	-	106.89	-9.2	-	-	-	106.89	-9.2	-	-	-	106.84	-9.1	-	-	-	106.50	-8.9	-	-	-	106.45	-8.9	-	-	-	106.45	-8.9	-	-	-	106.40	-8.8	-	-	-	106.30	-8.8	-	-	-	106.25	-8.7	-	-	-	106.25	-8.7	-	-	-	106.20	-8.7	-	-	-	105.86	-8.5	-	-	-	105.81	-8.4	-	-	-	105.81	-8.4	-	-	-	105.81	-8.4	-	-	-	105.81	-8.4	-	-	-	105.76	-8.4	-	-	-	105.55	-8.2	-	-	-	105.50	-8.2	-	-	-	105.50	-8.2	-	-	-	105.45	-8.1	-	-	-	105.45	-8.1	-	-	-	105.40	-8.1	-	-	-	105.18	-7.9	-	-	-	105.13	-7.9	-	-	-	105.13	-7.9	-	-	-	105.08	-7.8	-	-	-	105.04	-7.8	-	-	-	105.00	-7.8	-	-	-	105.00	-7.8	-	-	-	104.95	-7.7	-	-	-	104.45	-7.3	-	-	-	104.40	-7.2	-	-	-	104.40	-7.2	-	-	-	104.35	-7.2	-	-	-	104.35	-7.2	-	-	-	104.30	-7.1	-	-	-	103.45	-6.2	-	-	-	103.40	-6.2	-	-	-	103.40	-6.2	-	-	-	103.35	-6.1	-	-	-	102.65	-5.2	-	-	-	102.60	-5.2	-	-	-	102.60	-5.2	-	-	-	102.55	-5.1	0.00	0.00	0.00
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statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																												
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 14_BS 5_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.60 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.60 108.60 108.59 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.60 108.60 108.60 106.56 105.66 ja</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -28.50 0.00 0.00 0.00 44.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.50 m</div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																												
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																												
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 169.607 / 267.915 = 0.633$</div> <div>Bettungslager $B_{h,d} = 169.607 \text{ kN/m}$</div> <div>Erddwiderstand $E_{ph,d} = 267.915 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>Nw,k kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N,d</td><td>N(g+q+w),k</td><td>N(g+w),k</td><td>Nw,k</td><td>EA</td><td>EI</td><td>N,d'</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-356.10</td><td>-297.50</td><td>-217.98</td><td>-49.36</td><td>3.900E+7</td><td>2.100E+7</td><td>-397.20 Steife</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><td>x</td><td>y</td><td>wx,d</td><td>wy,d</td><td>N,d</td><td>Q,d</td><td>M,d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-6.9</td><td>0.0</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-7.0</td><td>0.1</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-7.0</td><td>0.1</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-7.0</td><td>0.1</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-7.0</td><td>0.1</td><td>-356.52</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0060</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.81</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.60</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table></div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.600</td><td>108.598</td><td>0.000</td><td>14.416</td><td>0.00</td><td>0.00</td></tr><tr><td>108.598</td><td>108.594</td><td>14.416</td><td>19.528</td><td>0.00</td><td>0.00</td></tr><tr><td>108.594</td><td>107.600</td><td>19.528</td><td>26.888</td><td>0.00</td><td>0.00</td></tr><tr><td>107.600</td><td>107.450</td><td>26.888</td><td>27.999</td><td>0.00</td><td>0.00</td></tr></table></div>			Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-356.10	-297.50	-217.98	-49.36	3.900E+7	2.100E+7	-397.20 Steife	x	y	wx,d	wy,d	N,d	Q,d	M,d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-6.9	0.0	-356.52	0.00	0.00	-7.47	103.72	-6.9	0.0	-356.52	0.00	0.00	-7.47	103.72	-6.9	0.0	-356.52	0.00	0.00	-6.64	103.72	-6.9	0.0	-356.52	0.00	0.00	-5.81	103.72	-6.9	0.0	-356.52	0.00	0.00	-4.98	103.72	-6.9	0.0	-356.52	0.00	0.00	-4.15	103.72	-6.9	0.0	-356.52	0.00	0.00	-3.32	103.72	-6.9	0.0	-356.52	0.00	0.00	-2.49	103.72	-7.0	0.1	-356.52	0.00	0.00	-1.66	103.72	-7.0	0.1	-356.52	0.00	0.00	-0.83	103.72	-7.0	0.1	-356.52	0.00	0.00	0.00	103.72	-7.0	0.1	-356.52	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0060	Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.81	0.390	0.461	30.000	10.00	57.80	0.179	2	102.60	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	108.600	108.598	0.000	14.416	0.00	0.00	108.598	108.594	14.416	19.528	0.00	0.00	108.594	107.600	19.528	26.888	0.00	0.00	107.600	107.450	26.888	27.999	0.00	0.00	<div>Schnitt: Anlage E2 Schnitt 5R</div> <div>Kapitel: 5 LF 3 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungstatik</div>	<div>Seite Anlage E2/26</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'																																																																																																																																																																																																																																																																				
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																					
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<table><tr><td>107.450</td><td>106.600</td><td>27.999</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.600</td><td>106.557</td><td>34.292</td><td>34.613</td><td>0.00</td><td>0.00</td></tr><tr><td>106.557</td><td>105.810</td><td>34.613</td><td>27.117</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.663</td><td>33.172</td><td>31.129</td><td>0.00</td><td>0.00</td></tr><tr><td>105.663</td><td>105.550</td><td>31.129</td><td>32.091</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>32.091</td><td>32.517</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.550</td><td>32.517</td><td>36.559</td><td>0.00</td><td>9.50</td></tr><tr><td>104.550</td><td>103.720</td><td>36.559</td><td>40.091</td><td>9.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.550</td><td>40.091</td><td>40.814</td><td>17.80</td><td>19.50</td></tr><tr><td>103.550</td><td>102.600</td><td>40.814</td><td>44.856</td><td>19.50</td><td>29.00</td></tr><tr><td>102.600</td><td>102.550</td><td>33.144</td><td>33.349</td><td>29.00</td><td>29.50</td></tr><tr><td>102.550</td><td>101.600</td><td>33.349</td><td>37.247</td><td>0.00</td><td>0.00</td></tr><tr><td>101.600</td><td>100.599</td><td>37.247</td><td>41.350</td><td>0.00</td><td>0.00</td></tr><tr><td>100.599</td><td>99.599</td><td>41.350</td><td>45.452</td><td>0.00</td><td>0.00</td></tr><tr><td>99.599</td><td>98.599</td><td>45.452</td><td>49.555</td><td>0.00</td><td>0.00</td></tr><tr><td>98.599</td><td>98.099</td><td>49.555</td><td>51.607</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.607</td><td>125.840</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.60</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.55</td><td>101.60</td><td>0.00</td><td>-40.39</td></tr><tr><td>101.60</td><td>100.60</td><td>-40.39</td><td>-82.90</td></tr><tr><td>100.60</td><td>99.60</td><td>-82.90</td><td>-125.42</td></tr><tr><td>99.60</td><td>98.60</td><td>-125.42</td><td>-167.93</td></tr><tr><td>98.60</td><td>98.10</td><td>-167.93</td><td>-189.19</td></tr><tr><td>98.10</td><td>80.00</td><td>-189.19</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.60</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.59</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.60</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-37.4</td><td>-34.0</td><td>-18.5</td><td></td></tr><tr><td>107.45</td><td>-90.8</td><td>-34.0</td><td>-52.7</td><td></td></tr><tr><td>106.60</td><td>-121.1</td><td>-66.5</td><td>-94.9</td><td></td></tr><tr><td>106.56</td><td>-122.7</td><td>-68.3</td><td>-97.9</td><td></td></tr><tr><td>105.81</td><td>-149.0</td><td>-95.8</td><td>-159.6</td><td></td></tr><tr><td>105.66</td><td>-153.7</td><td>-101.3</td><td>-174.1</td><td></td></tr><tr><td>105.55</td><td>-157.2</td><td>-105.4</td><td>-185.8</td><td></td></tr><tr><td>105.50</td><td>-158.8</td><td>-107.2</td><td>-191.1</td><td></td></tr><tr><td>104.55</td><td>-189.6</td><td>-150.4</td><td>-312.3</td><td></td></tr><tr><td>103.72</td><td>-217.5</td><td>-200.6</td><td>-457.1</td><td>-356.5</td></tr><tr><td>103.72</td><td>-217.5</td><td>155.9</td><td>-457.1</td><td></td></tr><tr><td>103.55</td><td>-223.3</td><td>144.2</td><td>-431.6</td><td></td></tr><tr><td>102.60</td><td>-256.5</td><td>69.8</td><td>-328.7</td><td></td></tr><tr><td>102.55</td><td>-258.4</td><td>66.1</td><td>-325.3</td><td></td></tr><tr><td>101.60</td><td>-266.6</td><td>60.6</td><td>-270.3</td><td></td></tr><tr><td>100.60</td><td>-253.9</td><td>101.7</td><td>-188.0</td><td></td></tr><tr><td>99.60</td><td>-257.9</td><td>96.3</td><td>-84.7</td><td></td></tr><tr><td>98.60</td><td>-275.8</td><td>43.1</td><td>-11.2</td><td></td></tr><tr><td>98.10</td><td>-281.1</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	106.600	27.999	34.292	0.00	0.00	106.600	106.557	34.292	34.613	0.00	0.00	106.557	105.810	34.613	27.117	0.00	0.00	105.810	105.663	33.172	31.129	0.00	0.00	105.663	105.550	31.129	32.091	0.00	0.00	105.550	105.500	32.091	32.517	0.00	0.00	105.500	104.550	32.517	36.559	0.00	9.50	104.550	103.720	36.559	40.091	9.50	17.80	103.720	103.550	40.091	40.814	17.80	19.50	103.550	102.600	40.814	44.856	19.50	29.00	102.600	102.550	33.144	33.349	29.00	29.50	102.550	101.600	33.349	37.247	0.00	0.00	101.600	100.599	37.247	41.350	0.00	0.00	100.599	99.599	41.350	45.452	0.00	0.00	99.599	98.599	45.452	49.555	0.00	0.00	98.599	98.099	49.555	51.607	0.00	0.00	98.099	80.000	51.607	125.840	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.60	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.55	101.60	0.00	-40.39	101.60	100.60	-40.39	-82.90	100.60	99.60	-82.90	-125.42	99.60	98.60	-125.42	-167.93	98.60	98.10	-167.93	-189.19	98.10	80.00	-189.19	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.60	0.0	0.0	0.0		108.60	-0.1	0.0	0.0		108.59	-0.2	-0.1	0.0		107.60	-32.3	-29.0	-13.7		107.45	-37.4	-34.0	-18.5		107.45	-90.8	-34.0	-52.7		106.60	-121.1	-66.5	-94.9		106.56	-122.7	-68.3	-97.9		105.81	-149.0	-95.8	-159.6		105.66	-153.7	-101.3	-174.1		105.55	-157.2	-105.4	-185.8		105.50	-158.8	-107.2	-191.1		104.55	-189.6	-150.4	-312.3		103.72	-217.5	-200.6	-457.1	-356.5	103.72	-217.5	155.9	-457.1		103.55	-223.3	144.2	-431.6		102.60	-256.5	69.8	-328.7		102.55	-258.4	66.1	-325.3		101.60	-266.6	60.6	-270.3		100.60	-253.9	101.7	-188.0		99.60	-257.9	96.3	-84.7		98.60	-275.8	43.1	-11.2		98.10	-281.1	0.0	0.0	
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Dipl.-Ing. A. Forner



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<div>Schnittgrößen ([g+q+w],k)</div> 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103.72	-14.1	-38.8	-140.6	-87.8																																																																																																																																																																																																																																																																																																																																								
103.72	-14.1	40.7	-140.6																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/28																																																																																																																																																																																																																																																																																																																																										
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>103.55</div><div>-14.1</div><div>40.7</div><div>-133.7</div></div><div><div>102.60</div><div>-14.1</div><div>40.7</div><div>-95.0</div></div><div><div>102.55</div><div>-14.1</div><div>40.7</div><div>-93.0</div></div><div><div>101.60</div><div>-15.4</div><div>37.4</div><div>-55.2</div></div><div><div>100.60</div><div>-20.9</div><div>23.7</div><div>-24.2</div></div><div><div>99.60</div><div>-25.9</div><div>11.1</div><div>-7.1</div></div><div><div>98.60</div><div>-27.4</div><div>2.6</div><div>-0.6</div></div><div><div>98.10</div><div>-26.4</div><div>0.0</div><div>0.0</div></div></div> <div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>108.60</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>108.60</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>108.60</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>108.59</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>108.59</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>108.54</div><div>-21.0</div><div>-</div><div>-</div><div>-</div></div><div><div>107.65</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>107.60</div><div>-17.8</div><div>-</div><div>-</div><div>-</div></div><div><div>107.60</div><div>-17.8</div><div>-</div><div>-</div><div>-</div></div><div><div>107.55</div><div>-17.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-17.5</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-17.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-17.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-17.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.65</div><div>-14.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.60</div><div>-14.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.60</div><div>-14.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.56</div><div>-14.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.56</div><div>-14.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.51</div><div>-14.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.86</div><div>-12.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.81</div><div>-11.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.81</div><div>-11.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.76</div><div>-11.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.71</div><div>-11.6</div><div>-</div><div>-</div><div>-</div></div><div><div>105.66</div><div>-11.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.66</div><div>-11.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.60</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.60</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-11.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-11.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-11.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-11.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-10.8</div><div>-</div><div>-</div><div>-</div></div><div><div>104.60</div><div>-8.3</div><div>-</div><div>-</div><div>-</div></div><div><div>104.55</div><div>-8.2</div><div>-</div><div>-</div><div>-</div></div><div><div>104.55</div><div>-8.2</div><div>-</div><div>-</div><div>-</div></div><div><div>104.50</div><div>-8.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.77</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.66</div><div>-5.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.60</div><div>-5.8</div><div>-</div><div>-</div><div>-</div></div><div><div>103.55</div><div>-5.7</div><div>-</div><div>-</div><div>-</div></div><div><div>103.55</div><div>-5.7</div><div>-</div><div>-</div><div>-</div></div><div><div>103.50</div><div>-5.6</div><div>-</div><div>-</div><div>-</div></div><div><div>102.65</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-3.8</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-3.8</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-3.7</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-3.7</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.50</div><div>-3.7</div><div>0.00</div><div>0.00</div><div>3.45</div></div><div><div>101.65</div><div>-2.4</div><div>25.79</div><div>62.18</div><div>62.18</div></div><div><div>101.60</div><div>-2.3</div><div>25.79</div><div>60.51</div><div>65.63</div></div><div><div>101.60</div><div>-2.3</div><div>27.98</div><div>65.63</div><div>65.63</div></div><div><div>101.55</div><div>-2.3</div><div>27.98</div><div>63.85</div><div>69.09</div></div><div><div>100.65</div><div>-1.3</div><div>50.00</div><div>64.48</div><div>131.26</div></div><div><div>100.60</div><div>-1.2</div><div>50.00</div><div>62.09</div><div>134.72</div></div></div>					
Schnitt:		Anlage E2 Schnitt 5R		Seite Anlage E2/29	
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.60-1.250.0062.09134.72</div><div>100.55-1.250.0059.74138.17</div><div>99.65-0.450.0022.23200.35</div><div>99.60-0.450.0020.35203.80</div><div>99.60-0.450.0020.35203.80</div><div>99.55-0.450.0018.48207.26</div><div>98.650.350.00-13.33269.43</div><div>98.600.350.00-15.05272.89</div><div>98.600.350.00-15.05272.89</div><div>98.550.350.00-16.76276.34</div><div>98.150.650.00-30.42303.98</div><div>98.100.650.00-32.12307.43</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.03908516</div><div>Theoretischer Fußpunkt = 98.099 m</div></div><div><div>Einbindetiefe tg = 4.45 m</div><div>Profillänge = 10.50 m</div></div><div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div><div>G,k = 198.69 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 44.50 kN/m</div><div>Eav,k = 68.53 kN/m (Eah,k = 391.12 kN/m)</div><div>Bv,k = 60.51</div><div>Summe V,k = 251.21 kN/m (Druck)</div></div><div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div></div><div><div>Mantelreibung</div><div><div>von</div><div>bis</div><div>qs,k [kN/m²]</div><div>Bezeichnung</div></div><div><div>102.55</div><div>98.10</div><div>55.00</div><div>s3: Flusssies, -sand</div></div><div>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m</div><div>R,d = Rb,d + R,s1,d = 1039.87 kN/m</div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 238.43 - 0.00 + 79.87 + 53.40 = 371.70 kN/m</div><div>==> µ = V,d / R,d = 371.70 / 1039.87 = 0.36</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/30
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 15_BS 5_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.60 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.60 108.60 108.59 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -28.50 0.00 0.00 0.00 44.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.50 m</div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/01
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2101
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 253.856 / 311.598 = 0.815$
Bettungslager $B_{h,d} = 253.856 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 311.598 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-241.94	-187.34	-187.34	-49.48	3.900E+7	2.100E+7	-238.86

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.7	0.0	-242.57	0.00	0.00
-7.47	103.72	-7.7	0.0	-242.57	0.00	0.00
-7.47	103.72	-7.7	0.0	-242.57	0.00	0.00
-6.64	103.72	-7.7	0.0	-242.57	0.00	0.00
-5.81	103.72	-7.7	0.0	-242.57	0.00	0.00
-4.98	103.72	-7.7	0.0	-242.57	0.00	0.00
-4.15	103.72	-7.7	0.0	-242.57	0.00	0.00
-3.32	103.72	-7.7	0.0	-242.57	0.00	0.00
-2.49	103.72	-7.7	0.1	-242.57	0.00	0.00
-1.66	103.72	-7.7	0.1	-242.57	0.00	0.00
-0.83	103.72	-7.7	0.1	-242.57	0.00	0.00
0.00	103.72	-7.7	0.1	-242.57	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0060

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.81	0.390	0.461	30.000	10.00	57.80	0.179
2	102.60	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.600	108.594	0.000	1.992	0.00
108.594	107.600	1.992	9.352	0.00
107.600	107.450	9.352	10.463	0.00
107.450	106.600	10.463	16.756	0.00

Schnitt:	Anlage E2	Schnitt 5R	Seite Anlage E2/32
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																							
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<table><tr><td>106.600</td><td>105.810</td><td>16.756</td><td>22.605</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.550</td><td>27.376</td><td>29.588</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>29.588</td><td>30.014</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.550</td><td>30.014</td><td>34.056</td><td>0.00</td><td>9.50</td></tr><tr><td>104.550</td><td>103.720</td><td>34.056</td><td>37.588</td><td>9.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.550</td><td>37.588</td><td>38.311</td><td>17.80</td><td>19.50</td></tr><tr><td>103.550</td><td>102.600</td><td>38.311</td><td>42.353</td><td>19.50</td><td>29.00</td></tr><tr><td>102.600</td><td>102.550</td><td>31.361</td><td>31.566</td><td>29.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>31.566</td><td>33.412</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.600</td><td>33.412</td><td>35.464</td><td>0.00</td><td>0.00</td></tr><tr><td>101.600</td><td>100.599</td><td>35.464</td><td>39.566</td><td>0.00</td><td>0.00</td></tr><tr><td>100.599</td><td>99.599</td><td>39.566</td><td>43.669</td><td>0.00</td><td>0.00</td></tr><tr><td>99.599</td><td>98.599</td><td>43.669</td><td>47.772</td><td>0.00</td><td>0.00</td></tr><tr><td>98.599</td><td>98.099</td><td>47.772</td><td>49.823</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.823</td><td>124.057</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.60</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.55</td><td>102.10</td><td>-11.33</td><td>-29.09</td></tr><tr><td>102.10</td><td>101.60</td><td>-29.09</td><td>-48.83</td></tr><tr><td>101.60</td><td>100.60</td><td>-48.83</td><td>-88.31</td></tr><tr><td>100.60</td><td>99.60</td><td>-88.31</td><td>-127.78</td></tr><tr><td>99.60</td><td>98.60</td><td>-127.78</td><td>-167.26</td></tr><tr><td>98.60</td><td>98.10</td><td>-167.26</td><td>-187.00</td></tr><tr><td>98.10</td><td>80.00</td><td>-187.00</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.59</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.60</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-31.1</td><td>-9.1</td><td>-4.0</td><td></td></tr><tr><td>107.45</td><td>-91.1</td><td>-9.1</td><td>-42.5</td><td></td></tr><tr><td>106.60</td><td>-117.0</td><td>-23.8</td><td>-56.0</td><td></td></tr><tr><td>105.81</td><td>-143.3</td><td>-43.7</td><td>-82.3</td><td></td></tr><tr><td>105.55</td><td>-152.1</td><td>-53.1</td><td>-94.8</td><td></td></tr><tr><td>105.50</td><td>-153.8</td><td>-55.0</td><td>-97.6</td><td></td></tr><tr><td>104.55</td><td>-187.1</td><td>-99.9</td><td>-169.8</td><td></td></tr><tr><td>103.72</td><td>-217.3</td><td>-153.1</td><td>-273.9</td><td>-242.6</td></tr><tr><td>103.72</td><td>-217.3</td><td>89.5</td><td>-273.9</td><td></td></tr><tr><td>103.55</td><td>-223.6</td><td>77.0</td><td>-259.7</td><td></td></tr><tr><td>102.60</td><td>-259.6</td><td>-3.0</td><td>-223.2</td><td></td></tr><tr><td>102.55</td><td>-261.6</td><td>-7.0</td><td>-223.5</td><td></td></tr><tr><td>102.10</td><td>-265.5</td><td>-7.8</td><td>-227.6</td><td></td></tr><tr><td>101.60</td><td>-260.9</td><td>12.1</td><td>-227.4</td><td></td></tr><tr><td>100.60</td><td>-238.1</td><td>82.0</td><td>-178.1</td><td></td></tr><tr><td>99.60</td><td>-236.7</td><td>93.0</td><td>-85.3</td><td></td></tr><tr><td>98.60</td><td>-254.9</td><td>44.8</td><td>-11.8</td><td></td></tr><tr><td>98.10</td><td>-261.5</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.600	105.810	16.756	22.605	0.00	0.00	105.810	105.550	27.376	29.588	0.00	0.00	105.550	105.500	29.588	30.014	0.00	0.00	105.500	104.550	30.014	34.056	0.00	9.50	104.550	103.720	34.056	37.588	9.50	17.80	103.720	103.550	37.588	38.311	17.80	19.50	103.550	102.600	38.311	42.353	19.50	29.00	102.600	102.550	31.361	31.566	29.00	29.50	102.550	102.100	31.566	33.412	0.00	0.00	102.100	101.600	33.412	35.464	0.00	0.00	101.600	100.599	35.464	39.566	0.00	0.00	100.599	99.599	39.566	43.669	0.00	0.00	99.599	98.599	43.669	47.772	0.00	0.00	98.599	98.099	47.772	49.823	0.00	0.00	98.099	80.000	49.823	124.057	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.60	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.55	102.10	-11.33	-29.09	102.10	101.60	-29.09	-48.83	101.60	100.60	-48.83	-88.31	100.60	99.60	-88.31	-127.78	99.60	98.60	-127.78	-167.26	98.60	98.10	-167.26	-187.00	98.10	80.00	-187.00	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.60	0.0	0.0	0.0		108.59	-0.1	0.0	0.0		107.60	-26.7	-7.2	-2.8		107.45	-31.1	-9.1	-4.0		107.45	-91.1	-9.1	-42.5		106.60	-117.0	-23.8	-56.0		105.81	-143.3	-43.7	-82.3		105.55	-152.1	-53.1	-94.8		105.50	-153.8	-55.0	-97.6		104.55	-187.1	-99.9	-169.8		103.72	-217.3	-153.1	-273.9	-242.6	103.72	-217.3	89.5	-273.9		103.55	-223.6	77.0	-259.7		102.60	-259.6	-3.0	-223.2		102.55	-261.6	-7.0	-223.5		102.10	-265.5	-7.8	-227.6		101.60	-260.9	12.1	-227.4		100.60	-238.1	82.0	-178.1		99.60	-236.7	93.0	-85.3		98.60	-254.9	44.8	-11.8		98.10	-261.5	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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-	108.59	-17.5	-	-	-	108.54	-17.4	-	-	-	107.65	-15.2	-	-	-	107.60	-15.1	-	-	-	107.60	-15.1	-	-	-	107.55	-14.9	-	-	-	107.50	-14.8	-	-	-	107.45	-14.7	-	-	-	107.45	-14.7	-	-	-	107.40	-14.5	-	-	-	106.65	-12.7	-	-	-	106.60	-12.6	-	-	-	106.60	-12.6	-	-	-	106.55	-12.4	-	-	-	105.86	-10.8	-	-	-	105.81	-10.7	-	-	-	105.81	-10.7	-	-	-	105.76	-10.5	-	-	-	105.60	-10.2	-	-	-	105.55	-10.0	-	-	-	105.55	-10.0	-	-	-	105.50	-9.9	-	-	-	105.50	-9.9	-	-	-	105.45	-9.8	-	-	-	104.60	-7.9	-	-	-	104.55	-7.8	-	-	-	104.55	-7.8	-	-	-	104.50	-7.7	-	-	-	103.77	-6.1	-	-	-	103.72	-6.0	-	-	-	103.72	-6.0	-	-	-	103.66	-5.9	-	-	-	103.60	-5.8	-	-	-	103.55	-5.7	-	-	-	103.55	-5.7	-	-	-	103.50	-5.6	-	-	-	102.65	-4.1	-	-	-	102.60	-4.1	-	-	-	102.60	-4.1	-	-	-	102.55	-4.0	0.00	0.00	0.00	102.55	-4.0	0.00	0.00	19.82	102.50	-3.9	0.00	0.00	23.27	102.15	-3.4	14.04	47.46	47.45	102.10	-3.3	14.04	46.44	50.91	102.10	-3.3	15.39	50.91	50.91	102.05	-3.2	15.39	49.81	54.36	101.65	-2.7	30.50	82.00	82.00	101.60	-2.6	30.50	80.02	85.45	101.60	-2.6	32.57	85.46	85.45	101.55	-2.6	32.57	83.37	88.90	100.65	-1.5	50.00	76.44	151.08	100.60	-1.5	50.00	73.90	154.54	100.60	-1.5	50.00	73.90	154.54	100.55	-1.4	50.00	71.38	157.99	99.65	-0.6	50.00	30.31	220.17	99.60	-0.6	50.00	28.21	223.62	99.60	-0.6	50.00	28.21	223.62	99.55	-0.5	50.00	26.13	227.08	98.65	0.2	50.00	-9.75	289.25	98.60	0.2	50.00	-11.69	292.71	98.60	0.2	50.00	-11.69	292.71
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102.50	-3.9	0.00	0.00	23.27																																																																																																																																																																																																																																																																																																																																																
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102.10	-3.3	14.04	46.44	50.91																																																																																																																																																																																																																																																																																																																																																
102.10	-3.3	15.39	50.91	50.91																																																																																																																																																																																																																																																																																																																																																
102.05	-3.2	15.39	49.81	54.36																																																																																																																																																																																																																																																																																																																																																
101.65	-2.7	30.50	82.00	82.00																																																																																																																																																																																																																																																																																																																																																
101.60	-2.6	30.50	80.02	85.45																																																																																																																																																																																																																																																																																																																																																
101.60	-2.6	32.57	85.46	85.45																																																																																																																																																																																																																																																																																																																																																
101.55	-2.6	32.57	83.37	88.90																																																																																																																																																																																																																																																																																																																																																
100.65	-1.5	50.00	76.44	151.08																																																																																																																																																																																																																																																																																																																																																
100.60	-1.5	50.00	73.90	154.54																																																																																																																																																																																																																																																																																																																																																
100.60	-1.5	50.00	73.90	154.54																																																																																																																																																																																																																																																																																																																																																
100.55	-1.4	50.00	71.38	157.99																																																																																																																																																																																																																																																																																																																																																
99.65	-0.6	50.00	30.31	220.17																																																																																																																																																																																																																																																																																																																																																
99.60	-0.6	50.00	28.21	223.62																																																																																																																																																																																																																																																																																																																																																
99.60	-0.6	50.00	28.21	223.62																																																																																																																																																																																																																																																																																																																																																
99.55	-0.5	50.00	26.13	227.08																																																																																																																																																																																																																																																																																																																																																
98.65	0.2	50.00	-9.75	289.25																																																																																																																																																																																																																																																																																																																																																
98.60	0.2	50.00	-11.69	292.71																																																																																																																																																																																																																																																																																																																																																
98.60	0.2	50.00	-11.69	292.71																																																																																																																																																																																																																																																																																																																																																
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Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p> 98.55 0.3 50.00 -13.63 296.16 98.15 0.6 50.00 -29.12 323.80 98.10 0.6 50.00 -31.06 327.25 </p> <p> Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k} = -0.04433118$ Theoretischer Fußpunkt = 98.099 m </p> <p> Einbindetiefe $t_g = 4.45$ m Profillänge = 10.50 m </p> <p> Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$ $G_{i,k} = 198.69$ kN/m $G'_{i,k} = 0.00$ kN/m $P_{v,k} = 44.50$ kN/m $E_{av,k} = 57.81$ kN/m ($E_{ah,k} = 330.79$ kN/m) $B_{v,k} = 79.27$ Summe $V_{i,k} = 221.73$ kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88$ m Verhältnisswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50$ MN/m² (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m </p> <p> Mantelreibung <table border="0"> <tr> <td>von</td> <td>bis</td> <td>$q_{s,k}$ [kN/m²]</td> <td>Bezeichnung</td> </tr> <tr> <td>102.55</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m $R_{i,d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m </p> <p> Einwirkungen $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 268.23 - 0.00 + 73.70 + 60.08 = 402.01$ kN/m $\Rightarrow \mu = V_{i,d} / R_{i,d} = 402.01 / 1039.87 = 0.39$ </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>			von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/36								
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 21036								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 16_BS 5_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.60 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.60 108.60 108.59 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -28.50 0.00 0.00 0.00 44.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.50 m</div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/07
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2107
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 228.446 / 335.567 = 0.681$
Bettungslager $B_{h,d} = 228.446 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 335.567 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-241.68	-208.37	-208.37	-49.49	3.900E+7	2.100E+7	-265.68

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-6.9	0.0	-242.10	0.00	0.00
-7.47	103.72	-6.9	0.0	-242.10	0.00	0.00
-7.47	103.72	-6.9	0.0	-242.10	0.00	0.00
-6.64	103.72	-6.9	0.0	-242.10	0.00	0.00
-5.81	103.72	-6.9	0.0	-242.10	0.00	0.00
-4.98	103.72	-6.9	0.0	-242.10	0.00	0.00
-4.15	103.72	-6.9	0.0	-242.10	0.00	0.00
-3.32	103.72	-6.9	0.0	-242.10	0.00	0.00
-2.49	103.72	-6.9	0.0	-242.10	0.00	0.00
-1.66	103.72	-6.9	0.1	-242.10	0.00	0.00
-0.83	103.72	-6.9	0.1	-242.10	0.00	0.00
0.00	103.72	-7.0	0.1	-242.10	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0060

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.81	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.60	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.81	0.390	0.461	30.000	10.00	57.80	0.179
2	102.60	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.600	108.594	0.000	3.941	0.00
108.594	107.600	3.941	11.301	0.00
107.600	107.450	11.301	12.411	0.00
107.450	106.600	12.411	18.705	0.00

Schnitt:	Anlage E2	Schnitt 5R	Seite Anlage E2/38
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
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<table><tr><td>106.600</td><td>105.810</td><td>18.705</td><td>24.554</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.550</td><td>29.878</td><td>32.091</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>32.091</td><td>32.517</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.550</td><td>32.517</td><td>36.559</td><td>0.00</td><td>9.50</td></tr><tr><td>104.550</td><td>103.720</td><td>36.559</td><td>40.091</td><td>9.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.550</td><td>40.091</td><td>40.814</td><td>17.80</td><td>19.50</td></tr><tr><td>103.550</td><td>102.600</td><td>40.814</td><td>44.856</td><td>19.50</td><td>29.00</td></tr><tr><td>102.600</td><td>102.550</td><td>33.144</td><td>33.349</td><td>29.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>33.349</td><td>35.196</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.600</td><td>35.196</td><td>37.247</td><td>0.00</td><td>0.00</td></tr><tr><td>101.600</td><td>100.599</td><td>37.247</td><td>41.350</td><td>0.00</td><td>0.00</td></tr><tr><td>100.599</td><td>99.599</td><td>41.350</td><td>45.452</td><td>0.00</td><td>0.00</td></tr><tr><td>99.599</td><td>98.599</td><td>45.452</td><td>49.555</td><td>0.00</td><td>0.00</td></tr><tr><td>98.599</td><td>98.099</td><td>49.555</td><td>51.607</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.607</td><td>125.840</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.60</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.55</td><td>102.10</td><td>-12.20</td><td>-31.33</td></tr><tr><td>102.10</td><td>101.60</td><td>-31.33</td><td>-52.58</td></tr><tr><td>101.60</td><td>100.60</td><td>-52.58</td><td>-95.10</td></tr><tr><td>100.60</td><td>99.60</td><td>-95.10</td><td>-137.61</td></tr><tr><td>99.60</td><td>98.60</td><td>-137.61</td><td>-180.13</td></tr><tr><td>98.60</td><td>98.10</td><td>-180.13</td><td>-201.38</td></tr><tr><td>98.10</td><td>80.00</td><td>-201.38</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.59</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.60</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-28.9</td><td>-10.8</td><td>-5.1</td><td></td></tr><tr><td>107.45</td><td>-82.3</td><td>-10.8</td><td>-39.3</td><td></td></tr><tr><td>106.60</td><td>-106.4</td><td>-26.0</td><td>-54.5</td><td></td></tr><tr><td>105.81</td><td>-130.7</td><td>-45.6</td><td>-82.4</td><td></td></tr><tr><td>105.55</td><td>-138.9</td><td>-54.9</td><td>-95.5</td><td></td></tr><tr><td>105.50</td><td>-140.5</td><td>-56.7</td><td>-98.3</td><td></td></tr><tr><td>104.55</td><td>-171.2</td><td>-99.9</td><td>-171.4</td><td></td></tr><tr><td>103.72</td><td>-199.1</td><td>-150.1</td><td>-274.4</td><td>-242.1</td></tr><tr><td>103.72</td><td>-199.1</td><td>92.0</td><td>-274.4</td><td></td></tr><tr><td>103.55</td><td>-204.9</td><td>80.3</td><td>-259.7</td><td></td></tr><tr><td>102.60</td><td>-238.2</td><td>5.9</td><td>-217.6</td><td></td></tr><tr><td>102.55</td><td>-240.0</td><td>2.2</td><td>-217.4</td><td></td></tr><tr><td>102.10</td><td>-243.5</td><td>0.6</td><td>-217.5</td><td></td></tr><tr><td>101.60</td><td>-239.4</td><td>17.5</td><td>-213.8</td><td></td></tr><tr><td>100.60</td><td>-219.1</td><td>77.8</td><td>-164.0</td><td></td></tr><tr><td>99.60</td><td>-217.9</td><td>85.3</td><td>-77.8</td><td></td></tr><tr><td>98.60</td><td>-234.3</td><td>40.6</td><td>-10.7</td><td></td></tr><tr><td>98.10</td><td>-240.6</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.600	105.810	18.705	24.554	0.00	0.00	105.810	105.550	29.878	32.091	0.00	0.00	105.550	105.500	32.091	32.517	0.00	0.00	105.500	104.550	32.517	36.559	0.00	9.50	104.550	103.720	36.559	40.091	9.50	17.80	103.720	103.550	40.091	40.814	17.80	19.50	103.550	102.600	40.814	44.856	19.50	29.00	102.600	102.550	33.144	33.349	29.00	29.50	102.550	102.100	33.349	35.196	0.00	0.00	102.100	101.600	35.196	37.247	0.00	0.00	101.600	100.599	37.247	41.350	0.00	0.00	100.599	99.599	41.350	45.452	0.00	0.00	99.599	98.599	45.452	49.555	0.00	0.00	98.599	98.099	49.555	51.607	0.00	0.00	98.099	80.000	51.607	125.840	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.60	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.55	102.10	-12.20	-31.33	102.10	101.60	-31.33	-52.58	101.60	100.60	-52.58	-95.10	100.60	99.60	-95.10	-137.61	99.60	98.60	-137.61	-180.13	98.60	98.10	-180.13	-201.38	98.10	80.00	-201.38	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.60	0.0	0.0	0.0		108.59	-0.1	0.0	0.0		107.60	-24.9	-8.7	-3.6		107.45	-28.9	-10.8	-5.1		107.45	-82.3	-10.8	-39.3		106.60	-106.4	-26.0	-54.5		105.81	-130.7	-45.6	-82.4		105.55	-138.9	-54.9	-95.5		105.50	-140.5	-56.7	-98.3		104.55	-171.2	-99.9	-171.4		103.72	-199.1	-150.1	-274.4	-242.1	103.72	-199.1	92.0	-274.4		103.55	-204.9	80.3	-259.7		102.60	-238.2	5.9	-217.6		102.55	-240.0	2.2	-217.4		102.10	-243.5	0.6	-217.5		101.60	-239.4	17.5	-213.8		100.60	-219.1	77.8	-164.0		99.60	-217.9	85.3	-77.8		98.60	-234.3	40.6	-10.7		98.10	-240.6	0.0	0.0	
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Dipl.-Ing. A. Forner



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kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.60</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.60</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.60</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.59</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.59</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.54</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.60</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.60</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.55</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.65</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.60</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.60</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.55</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.0</td><td>0.00</td><td>0.00</td><td>19.82</td></tr><tr><td>102.50</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>23.27</td></tr><tr><td>102.15</td><td>-3.4</td><td>14.16</td><td>47.46</td><td>47.45</td></tr><tr><td>102.10</td><td>-3.3</td><td>14.16</td><td>46.43</td><td>50.91</td></tr><tr><td>102.10</td><td>-3.3</td><td>15.53</td><td>50.91</td><td>50.91</td></tr><tr><td>102.05</td><td>-3.2</td><td>15.53</td><td>49.80</td><td>54.36</td></tr><tr><td>101.65</td><td>-2.7</td><td>30.81</td><td>82.00</td><td>82.00</td></tr><tr><td>101.60</td><td>-2.6</td><td>30.81</td><td>80.01</td><td>85.45</td></tr><tr><td>101.60</td><td>-2.6</td><td>32.91</td><td>85.46</td><td>85.45</td></tr><tr><td>101.55</td><td>-2.5</td><td>32.91</td><td>83.36</td><td>88.90</td></tr><tr><td>100.65</td><td>-1.5</td><td>50.00</td><td>75.69</td><td>151.08</td></tr><tr><td>100.60</td><td>-1.5</td><td>50.00</td><td>73.18</td><td>154.54</td></tr><tr><td>100.60</td><td>-1.5</td><td>50.00</td><td>73.18</td><td>154.54</td></tr><tr><td>100.55</td><td>-1.4</td><td>50.00</td><td>70.71</td><td>157.99</td></tr><tr><td>99.65</td><td>-0.6</td><td>50.00</td><td>30.44</td><td>220.17</td></tr><tr><td>99.60</td><td>-0.6</td><td>50.00</td><td>28.39</td><td>223.62</td></tr><tr><td>99.60</td><td>-0.6</td><td>50.00</td><td>28.39</td><td>223.62</td></tr><tr><td>99.55</td><td>-0.5</td><td>50.00</td><td>26.36</td><td>227.08</td></tr><tr><td>98.65</td><td>0.2</td><td>50.00</td><td>-8.64</td><td>289.25</td></tr><tr><td>98.60</td><td>0.2</td><td>50.00</td><td>-10.54</td><td>292.71</td></tr><tr><td>98.60</td><td>0.2</td><td>50.00</td><td>-10.54</td><td>292.71</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.60	-18.0	-	-	-	108.60	-18.0	-	-	-	108.60	-18.0	-	-	-	108.59	-18.0	-	-	-	108.59	-18.0	-	-	-	108.54	-17.9	-	-	-	107.65	-15.5	-	-	-	107.60	-15.4	-	-	-	107.60	-15.4	-	-	-	107.55	-15.3	-	-	-	107.50	-15.2	-	-	-	107.45	-15.0	-	-	-	107.45	-15.0	-	-	-	107.40	-14.9	-	-	-	106.65	-12.9	-	-	-	106.60	-12.8	-	-	-	106.60	-12.8	-	-	-	106.55	-12.7	-	-	-	105.86	-10.9	-	-	-	105.81	-10.8	-	-	-	105.81	-10.8	-	-	-	105.76	-10.7	-	-	-	105.60	-10.3	-	-	-	105.55	-10.2	-	-	-	105.55	-10.2	-	-	-	105.50	-10.1	-	-	-	105.50	-10.1	-	-	-	105.45	-9.9	-	-	-	104.60	-7.9	-	-	-	104.55	-7.8	-	-	-	104.55	-7.8	-	-	-	104.50	-7.7	-	-	-	103.77	-6.1	-	-	-	103.72	-6.0	-	-	-	103.72	-6.0	-	-	-	103.66	-5.9	-	-	-	103.60	-5.8	-	-	-	103.55	-5.7	-	-	-	103.55	-5.7	-	-	-	103.50	-5.6	-	-	-	102.65	-4.1	-	-	-	102.60	-4.0	-	-	-	102.60	-4.0	-	-	-	102.55	-4.0	0.00	0.00	0.00	102.55	-4.0	0.00	0.00	19.82	102.50	-3.9	0.00	0.00	23.27	102.15	-3.4	14.16	47.46	47.45	102.10	-3.3	14.16	46.43	50.91	102.10	-3.3	15.53	50.91	50.91	102.05	-3.2	15.53	49.80	54.36	101.65	-2.7	30.81	82.00	82.00	101.60	-2.6	30.81	80.01	85.45	101.60	-2.6	32.91	85.46	85.45	101.55	-2.5	32.91	83.36	88.90	100.65	-1.5	50.00	75.69	151.08	100.60	-1.5	50.00	73.18	154.54	100.60	-1.5	50.00	73.18	154.54	100.55	-1.4	50.00	70.71	157.99	99.65	-0.6	50.00	30.44	220.17	99.60	-0.6	50.00	28.39	223.62	99.60	-0.6	50.00	28.39	223.62	99.55	-0.5	50.00	26.36	227.08	98.65	0.2	50.00	-8.64	289.25	98.60	0.2	50.00	-10.54	292.71	98.60	0.2	50.00	-10.54	292.71
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98.65	0.2	50.00	-8.64	289.25																																																																																																																																																																																																																																																																																																																																																
98.60	0.2	50.00	-10.54	292.71																																																																																																																																																																																																																																																																																																																																																
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Schnitt:		Anlage E2 Schnitt 5R		Seite Anlage E2/41																																																																																																																																																																																																																																																																																																																																																
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>98.550.250.00-12.43296.16</div><div>98.150.650.00-27.53323.80</div><div>98.100.650.00-29.41327.25</div></div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04321032 Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 4.45 m Profillänge = 10.50 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 198.69 kN/m G',k = 0.00 kN/m Pv,k = 44.50 kN/m Eav,k = 61.47 kN/m (Eah,k = 352.28 kN/m) Bv,k = 79.05 Summe V,k = 225.61 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 238.43 - 0.00 + 70.69 + 53.40 = 362.52 kN/m ==> µ = V,d / Rd = 362.52 / 1039.87 = 0.35</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage E2 Schnitt 5R		Seite Anlage E2/42
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2142
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																													
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<div>Anlage F2 Schnitt 6R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 10_BS 6_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.60</td><td>1.10</td><td>0.29</td><td>0.28</td><td>0.61</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Blocklasten</p> <p>Aktiver Erddruck für Blocklasten verwendet</p> <table><tr><td>Nr.</td><td>sig(v)</td><td>sig(h)</td><td>x(links)</td><td>x(rechts)</td><td>Tiefe</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[m]</td><td>[m]</td><td>[mNHN]</td></tr><tr><td>1</td><td>37.80</td><td>0.00</td><td>6.00</td><td>6.80</td><td>106.35</td></tr></table> <p>Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ</p> <table><tr><td>[-]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td></td></tr><tr><td>1</td><td>103.64</td><td>97.73</td><td>96.48</td><td>4.15</td><td>0.73</td><td>0.00</td><td>2</td></tr></table> <p>Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</p> <p>Blocklasten nicht umgelagert</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.60	1.10	0.29	0.28	0.61	0.00	nein	Nr.	sig(v)	sig(h)	x(links)	x(rechts)	Tiefe	[-]	[kN/m²]	[kN/m²]	[m]	[m]	[mNHN]	1	37.80	0.00	6.00	6.80	106.35	[-]	[mNHN]	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		1	103.64	97.73	96.48	4.15	0.73	0.00	2
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																							
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																																							
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1	103.64	97.73	96.48	4.15	0.73	0.00	2																																																								
Schnitt:	Anlage F2 Schnitt 6R	Seite Anlage F2/19.																																																													
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025																																																													
Vorgang:	Genehmigungsstatik																																																														

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
106.00	105.55	10.000	10.000
105.55	102.55	5.000	5.000
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 398.344 / 1228.716 = 0.324$
Bettungslager $B_{h,d} = 398.344 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 1228.716 \text{ kN/m}$

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.55	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.55	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
(Erddruckbeiwerte für horizontales Gelände)
Wandreibung angepasst.

Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.55	0.390	0.461	30.000	10.00	57.80	0.179
2	102.55	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)

von	bis	oben	unten	Wasserdruck	
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]
107.450	106.886	0.000	4.176	0.00	0.00
106.886	106.450	4.176	13.267	0.00	0.00
106.450	106.280	13.268	16.804	0.00	0.00
106.280	106.000	16.804	18.880	0.00	0.00
106.000	105.550	18.880	22.212	0.00	0.00
105.550	105.500	26.870	27.295	0.00	0.00
105.500	105.450	27.295	27.508	0.00	0.50
105.450	105.000	27.508	29.423	0.50	5.00
105.000	104.445	29.423	31.783	5.00	5.00
104.445	103.639	31.783	35.215	5.00	5.00
103.639	103.441	35.215	40.096	5.00	5.00
103.441	102.550	40.096	43.370	5.00	5.00
102.550	102.450	33.098	33.450	5.00	5.00
102.450	101.750	33.450	35.916	5.00	5.00
101.750	101.450	35.916	36.973	5.00	5.00
101.450	100.449	36.973	40.496	5.00	5.00
100.449	99.449	40.496	44.018	5.00	5.00
99.449	98.449	44.018	47.541	5.00	5.00
98.449	98.099	47.541	48.774	5.00	5.00
98.099	97.731	48.774	50.070	5.00	5.00
97.731	96.477	50.070	54.486	5.00	5.00
96.477	80.000	54.486	122.067	5.00	5.00

Hydrodynamische Wasserdruckspannung
(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)

w(oben)	w(unten)	z(oben)	z(unten)
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]
0.00	0.00	107.45	106.00

Schnitt: Anlage F2	Schnitt 6R	Seite Anlage F2/2
Kapitel: 1	LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																															
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<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>1</td><td>105.55</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.55</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.28</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.55</td><td>0.00</td><td>-26.33</td></tr><tr><td>105.55</td><td>105.50</td><td>-23.18</td><td>-24.77</td></tr><tr><td>105.50</td><td>105.45</td><td>-24.77</td><td>-26.35</td></tr><tr><td>105.45</td><td>105.00</td><td>-26.35</td><td>-40.64</td></tr><tr><td>105.00</td><td>104.45</td><td>-40.64</td><td>-49.44</td></tr><tr><td>104.45</td><td>103.64</td><td>-49.44</td><td>-62.24</td></tr><tr><td>103.64</td><td>103.44</td><td>-62.24</td><td>-65.38</td></tr><tr><td>103.44</td><td>102.55</td><td>-65.38</td><td>-79.51</td></tr><tr><td>102.55</td><td>102.45</td><td>-143.12</td><td>-147.37</td></tr><tr><td>102.45</td><td>101.75</td><td>-147.37</td><td>-177.13</td></tr><tr><td>101.75</td><td>101.45</td><td>-177.13</td><td>-189.89</td></tr><tr><td>101.45</td><td>100.45</td><td>-189.89</td><td>-232.40</td></tr><tr><td>100.45</td><td>99.45</td><td>-232.40</td><td>-274.92</td></tr><tr><td>99.45</td><td>98.45</td><td>-274.92</td><td>-317.43</td></tr><tr><td>98.45</td><td>98.10</td><td>-317.43</td><td>-332.31</td></tr><tr><td>98.10</td><td>97.73</td><td>-332.31</td><td>-347.95</td></tr><tr><td>97.73</td><td>96.48</td><td>-347.95</td><td>-401.25</td></tr><tr><td>96.48</td><td>80.00</td><td>-401.25</td><td>-1101.55</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> 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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



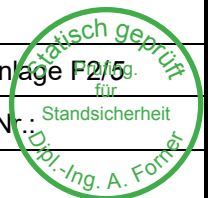
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Schnittgrößen ([g+q+w],k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 106.89 -11.1 -1.2 -0.2 106.45 -20.7 -5.0 -1.4 106.28 -24.9 -7.5 -2.5 106.00 -32.0 -12.5 -5.3 105.55 -37.7 -13.3 -11.7 105.50 -38.3 -13.1 -12.4 105.45 -38.8 -12.9 -13.0 105.00 -43.8 -14.0 -18.9 104.45 -50.5 -19.4 -28.0 103.64 -61.0 -32.7 -48.6 103.44 -63.7 -37.6 -55.6 102.55 -76.7 -64.8 -100.7 102.45 -73.1 -54.9 -106.6 101.75 -53.3 0.5 -124.3 101.45 -47.4 17.3 -121.6 100.45 -36.7 48.0 -85.8 99.45 -37.6 46.0 -36.4 98.45 -48.1 16.5 -3.0 98.10 -53.9 0.0 0.0</div> <div>Schnittgrößen (g+w,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 106.89 -11.1 -1.2 -0.2 106.45 -20.7 -5.0 -1.4 106.28 -24.9 -7.5 -2.5 106.00 -32.0 -12.5 -5.3 105.55 -37.7 -13.3 -11.7 105.50 -38.3 -13.1 -12.4 105.45 -38.8 -12.9 -13.0 105.00 -43.8 -14.0 -18.9 104.45 -50.5 -19.4 -28.0 103.64 -61.0 -32.7 -48.6 103.44 -63.7 -37.6 -55.6 102.55 -76.7 -64.8 -100.7 102.45 -73.1 -54.9 -106.6 101.75 -53.3 0.5 -124.3 101.45 -47.4 17.3 -121.6 100.45 -36.7 48.0 -85.8 99.45 -37.6 46.0 -36.4 98.45 -48.1 16.5 -3.0 98.10 -53.9 0.0 0.0</div> <div>Schnittgrößen (q,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 106.89 0.0 0.0 0.0 106.45 0.0 0.0 0.0 106.28 0.0 0.0 0.0 106.00 0.0 0.0 0.0 105.55 0.0 0.0 0.0 105.50 0.0 0.0 0.0 105.45 0.0 0.0 0.0 105.00 0.0 0.0 0.0 104.45 0.0 0.0 0.0 103.64 0.0 0.0 0.0 103.44 0.0 0.0 0.0 102.55 0.0 0.0 0.0 102.45 0.0 0.0 0.0 101.75 0.0 0.0 0.0 101.45 0.0 0.0 0.0 100.45 0.0 0.0 0.0 99.45 0.0 0.0 0.0 98.45 0.0 0.0 0.0 98.10 0.0 0.0 0.0</div>		
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																				
<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-6.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-6.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-6.6</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.60</td><td>-6.2</td><td>6.11</td><td>38.04</td><td>38.04</td></tr><tr><td>105.55</td><td>-6.2</td><td>6.11</td><td>37.67</td><td>42.79</td></tr><tr><td>105.55</td><td>-6.2</td><td>5.00</td><td>30.83</td><td>37.67</td></tr><tr><td>105.50</td><td>-6.1</td><td>5.00</td><td>30.53</td><td>40.25</td></tr><tr><td>105.50</td><td>-6.1</td><td>5.00</td><td>30.53</td><td>40.25</td></tr><tr><td>105.45</td><td>-6.0</td><td>5.00</td><td>30.23</td><td>42.83</td></tr><tr><td>105.45</td><td>-6.0</td><td>5.00</td><td>30.23</td><td>42.83</td></tr><tr><td>105.40</td><td>-6.0</td><td>5.00</td><td>29.93</td><td>45.41</td></tr><tr><td>105.05</td><td>-5.6</td><td>5.00</td><td>27.85</td><td>63.46</td></tr><tr><td>105.00</td><td>-5.5</td><td>5.00</td><td>27.55</td><td>66.03</td></tr><tr><td>105.00</td><td>-5.5</td><td>5.00</td><td>27.55</td><td>66.03</td></tr><tr><td>104.95</td><td>-5.5</td><td>5.00</td><td>27.25</td><td>67.33</td></tr><tr><td>104.50</td><td>-4.9</td><td>5.00</td><td>24.59</td><td>79.03</td></tr><tr><td>104.45</td><td>-4.9</td><td>5.00</td><td>24.30</td><td>80.33</td></tr><tr><td>104.45</td><td>-4.9</td><td>5.00</td><td>24.30</td><td>80.33</td></tr><tr><td>104.39</td><td>-4.8</td><td>5.00</td><td>24.00</td><td>81.63</td></tr><tr><td>103.69</td><td>-4.0</td><td>5.00</td><td>19.98</td><td>99.84</td></tr><tr><td>103.64</td><td>-3.9</td><td>5.00</td><td>19.70</td><td>101.14</td></tr><tr><td>103.64</td><td>-3.9</td><td>5.00</td><td>19.70</td><td>101.14</td></tr><tr><td>103.59</td><td>-3.9</td><td>5.00</td><td>19.42</td><td>102.41</td></tr><tr><td>103.49</td><td>-3.8</td><td>5.00</td><td>18.88</td><td>104.96</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.61</td><td>106.24</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.61</td><td>106.24</td></tr><tr><td>103.39</td><td>-3.7</td><td>5.00</td><td>18.34</td><td>107.52</td></tr><tr><td>102.60</td><td>-2.8</td><td>5.00</td><td>14.21</td><td>127.93</td></tr><tr><td>102.55</td><td>-2.8</td><td>5.00</td><td>13.97</td><td>129.21</td></tr><tr><td>102.55</td><td>-2.8</td><td>50.00</td><td>139.66</td><td>232.57</td></tr><tr><td>102.50</td><td>-2.7</td><td>50.00</td><td>137.22</td><td>236.03</td></tr><tr><td>102.50</td><td>-2.7</td><td>50.00</td><td>137.22</td><td>236.03</td></tr><tr><td>102.45</td><td>-2.7</td><td>50.00</td><td>134.81</td><td>239.48</td></tr><tr><td>102.45</td><td>-2.7</td><td>50.00</td><td>134.81</td><td>239.48</td></tr><tr><td>102.40</td><td>-2.6</td><td>50.00</td><td>132.41</td><td>242.94</td></tr><tr><td>101.80</td><td>-2.1</td><td>50.00</td><td>105.62</td><td>284.39</td></tr><tr><td>101.75</td><td>-2.1</td><td>50.00</td><td>103.56</td><td>287.84</td></tr><tr><td>101.75</td><td>-2.1</td><td>50.00</td><td>103.56</td><td>287.84</td></tr><tr><td>101.70</td><td>-2.0</td><td>50.00</td><td>101.52</td><td>291.30</td></tr><tr><td>101.50</td><td>-1.9</td><td>50.00</td><td>93.63</td><td>305.11</td></tr><tr><td>101.45</td><td>-1.8</td><td>50.00</td><td>91.73</td><td>308.57</td></tr><tr><td>101.45</td><td>-1.8</td><td>50.00</td><td>91.73</td><td>308.57</td></tr><tr><td>101.40</td><td>-1.8</td><td>50.00</td><td>89.85</td><td>312.02</td></tr><tr><td>100.50</td><td>-1.2</td><td>50.00</td><td>60.08</td><td>374.20</td></tr><tr><td>100.45</td><td>-1.2</td><td>50.00</td><td>58.63</td><td>377.65</td></tr><tr><td>100.45</td><td>-1.2</td><td>50.00</td><td>58.63</td><td>377.65</td></tr><tr><td>100.40</td><td>-1.1</td><td>50.00</td><td>57.19</td><td>381.11</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>33.91</td><td>443.28</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>32.72</td><td>446.74</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>32.72</td><td>446.74</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>31.54</td><td>450.19</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.5	-	-	-	107.40	-8.4	-	-	-	106.95	-7.9	-	-	-	106.89	-7.8	-	-	-	106.89	-7.8	-	-	-	106.84	-7.7	-	-	-	106.50	-7.3	-	-	-	106.45	-7.3	-	-	-	106.45	-7.3	-	-	-	106.39	-7.2	-	-	-	106.34	-7.1	-	-	-	106.28	-7.0	-	-	-	106.28	-7.0	-	-	-	106.23	-7.0	-	-	-	106.05	-6.8	-	-	-	106.00	-6.7	0.00	0.00	0.00	106.00	-6.7	0.00	0.00	0.00	105.95	-6.6	0.00	0.00	4.75	105.60	-6.2	6.11	38.04	38.04	105.55	-6.2	6.11	37.67	42.79	105.55	-6.2	5.00	30.83	37.67	105.50	-6.1	5.00	30.53	40.25	105.50	-6.1	5.00	30.53	40.25	105.45	-6.0	5.00	30.23	42.83	105.45	-6.0	5.00	30.23	42.83	105.40	-6.0	5.00	29.93	45.41	105.05	-5.6	5.00	27.85	63.46	105.00	-5.5	5.00	27.55	66.03	105.00	-5.5	5.00	27.55	66.03	104.95	-5.5	5.00	27.25	67.33	104.50	-4.9	5.00	24.59	79.03	104.45	-4.9	5.00	24.30	80.33	104.45	-4.9	5.00	24.30	80.33	104.39	-4.8	5.00	24.00	81.63	103.69	-4.0	5.00	19.98	99.84	103.64	-3.9	5.00	19.70	101.14	103.64	-3.9	5.00	19.70	101.14	103.59	-3.9	5.00	19.42	102.41	103.49	-3.8	5.00	18.88	104.96	103.44	-3.7	5.00	18.61	106.24	103.44	-3.7	5.00	18.61	106.24	103.39	-3.7	5.00	18.34	107.52	102.60	-2.8	5.00	14.21	127.93	102.55	-2.8	5.00	13.97	129.21	102.55	-2.8	50.00	139.66	232.57	102.50	-2.7	50.00	137.22	236.03	102.50	-2.7	50.00	137.22	236.03	102.45	-2.7	50.00	134.81	239.48	102.45	-2.7	50.00	134.81	239.48	102.40	-2.6	50.00	132.41	242.94	101.80	-2.1	50.00	105.62	284.39	101.75	-2.1	50.00	103.56	287.84	101.75	-2.1	50.00	103.56	287.84	101.70	-2.0	50.00	101.52	291.30	101.50	-1.9	50.00	93.63	305.11	101.45	-1.8	50.00	91.73	308.57	101.45	-1.8	50.00	91.73	308.57	101.40	-1.8	50.00	89.85	312.02	100.50	-1.2	50.00	60.08	374.20	100.45	-1.2	50.00	58.63	377.65	100.45	-1.2	50.00	58.63	377.65	100.40	-1.1	50.00	57.19	381.11	99.50	-0.7	50.00	33.91	443.28	99.45	-0.7	50.00	32.72	446.74	99.45	-0.7	50.00	32.72	446.74	99.40	-0.6	50.00	31.54	450.19
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100.50	-1.2	50.00	60.08	374.20																																																																																																																																																																																																																																																																																																																																																		
100.45	-1.2	50.00	58.63	377.65																																																																																																																																																																																																																																																																																																																																																		
100.45	-1.2	50.00	58.63	377.65																																																																																																																																																																																																																																																																																																																																																		
100.40	-1.1	50.00	57.19	381.11																																																																																																																																																																																																																																																																																																																																																		
99.50	-0.7	50.00	33.91	443.28																																																																																																																																																																																																																																																																																																																																																		
99.45	-0.7	50.00	32.72	446.74																																																																																																																																																																																																																																																																																																																																																		
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Statisch geprüft
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Standicherheit
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div><div><div>98.50</div><div>-0.2</div><div>50.00</div><div>11.14</div><div>512.37</div></div><div><div>98.45</div><div>-0.2</div><div>50.00</div><div>10.03</div><div>515.82</div></div><div><div>98.45</div><div>-0.2</div><div>50.00</div><div>10.03</div><div>515.82</div></div><div><div>98.40</div><div>-0.2</div><div>50.00</div><div>8.92</div><div>519.28</div></div><div><div>98.15</div><div>-0.1</div><div>50.00</div><div>3.37</div><div>536.55</div></div><div><div>98.10</div><div>0.0</div><div>50.00</div><div>2.26</div><div>540.00</div></div></div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02540249 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G'_{k} - E_{av,k} \geq B_{v,k}$ $G_{k} = 176.93 \text{ kN/m}$ $G'_{k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 54.18 \text{ kN/m}$ ($E_{ah,k} = 308.46 \text{ kN/m}$) $B_{v,k} = 127.95$ Summe $V_{k} = 103.17 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>106.00</td><td>105.55</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.55</td><td>102.55</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table><div>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$ $R_{d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</div></div> <div>Einwirkungen $V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 62.44 + 0.00 = 274.75 \text{ kN/m}$ $\Rightarrow \mu = V_d / R_d = 274.75 / 1039.87 = 0.26$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.55	0.00	S1: Auffüllungen	105.55	102.55	0.00	S2: Auelehm	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.55	0.00	S1: Auffüllungen															
105.55	102.55	0.00	S2: Auelehm															
102.55	98.10	55.00	s3: Flussskies, -sand															
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/6																
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2109																
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																

Statisch geprüft

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<div><div>2</div><div>LF 1.2 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 11_BS 6_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><th>Nr.</th><th>x1</th><th>x2</th><th>dh</th><th>a</th><th>x</th><th>y</th><th>Auflast</th><th>Verkehr</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[kN/m²]</th><th>[-]</th></tr><tr><td>1</td><td>0.50</td><td>1.60</td><td>1.10</td><td>0.29</td><td>0.28</td><td>0.61</td><td>10.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Blocklasten</p> <p>Aktiver Erddruck für Blocklasten verwendet</p> <table><tr><th>Nr.</th><th>sig(v)</th><th>sig(h)</th><th>x(links)</th><th>x(rechts)</th><th>Tiefe</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th></tr><tr><td>1</td><td>37.80</td><td>0.00</td><td>6.00</td><td>6.80</td><td>106.35</td></tr></table> <table><tr><th>Nr.</th><th>y(oben)</th><th>y(mitte)</th><th>y(unten)</th><th>p(oben)</th><th>p(mitte)</th><th>p(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th></th></tr><tr><td>1</td><td>103.64</td><td>97.73</td><td>96.48</td><td>4.15</td><td>0.73</td><td>0.00</td><td>2</td></tr></table> <p>Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</p> <p>Lasten (zweiseitig begrenzt)</p> <table><tr><th>Nr.</th><th>sig(v)</th><th>x(links)</th><th>x(rechts)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>10.00</td><td>0.00</td><td>1.60</td><td>107.45</td><td>107.45</td><td>107.45</td><td>105.84</td><td>105.15</td><td>nein</td></tr></table> <p>Steuerparameter = 0.50</p> <p>Blocklasten nicht umgelagert</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.60	1.10	0.29	0.28	0.61	10.00	nein	Nr.	sig(v)	sig(h)	x(links)	x(rechts)	Tiefe	[-]	[kN/m²]	[kN/m²]	[m]	[m]	[mNHN]	1	37.80	0.00	6.00	6.80	106.35	Nr.	y(oben)	y(mitte)	y(unten)	p(oben)	p(mitte)	p(unten)	Typ	[-]	[mNHN]	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		1	103.64	97.73	96.48	4.15	0.73	0.00	2	Nr.	sig(v)	x(links)	x(rechts)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	10.00	0.00	1.60	107.45	107.45	107.45	105.84	105.15	nein	
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																																																														
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1	10.00	0.00	1.60	107.45	107.45	107.45	105.84	105.15	nein																																																																																													
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Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																				
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Statisch geprüft

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Standsicherheit

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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m²] [MN/m²]</div> <div>106.00 105.55 10.000 10.000</div> <div>105.55 102.55 5.000 5.000</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 450.003 / 1130.900 = 0.398$</div> <div>Bettungslager $B_{h,d} = 450.003 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1130.900 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ $c(pas),k$ $c(akt),k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.55 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.55 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.55 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.55 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>107.450 107.448 0.000 3.923 0.00 0.00</div> <div>107.448 106.886 3.923 9.802 0.00 0.00</div> <div>106.886 106.450 9.802 20.231 0.00 0.00</div> <div>106.450 106.280 20.232 24.288 0.00 0.00</div> <div>106.280 106.000 24.288 26.674 0.00 0.00</div> <div>106.000 105.841 26.674 27.851 0.00 0.00</div> <div>105.841 105.550 27.851 28.363 0.00 0.00</div> <div>105.550 105.500 34.772 34.835 0.00 0.00</div> <div>105.500 105.400 34.835 34.536 0.00 1.00</div> <div>105.400 105.151 34.536 33.788 1.00 3.49</div> <div>105.151 105.000 33.788 34.429 3.49 5.00</div> <div>105.000 104.445 34.429 36.789 5.00 5.00</div> <div>104.445 103.639 36.789 40.221 5.00 5.00</div> <div>103.639 103.441 40.221 45.102 5.00 5.00</div> <div>103.441 102.550 45.102 48.376 5.00 5.00</div> <div>102.550 102.450 36.665 37.017 5.00 5.00</div> <div>102.450 101.850 37.017 39.131 5.00 5.00</div> <div>101.850 101.450 39.131 40.540 5.00 5.00</div> <div>101.450 100.449 40.540 44.062 5.00 5.00</div> <div>100.449 99.449 44.062 47.585 5.00 5.00</div> <div>99.449 98.449 47.585 51.107 5.00 5.00</div> <div>98.449 98.099 51.107 52.340 5.00 5.00</div> <div>98.099 97.731 52.340 53.636 5.00 5.00</div> <div>97.731 96.477 53.636 58.052 5.00 5.00</div> <div>96.477 80.000 58.052 125.633 5.00 5.00</div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div>w(oben) w(unten) z(oben) z(unten)</div> <div>[kN/m²] [kN/m²] [mNHN] [mNHN]</div> <div>0.00 0.00 107.45 106.00</div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/8
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



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<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td></td></tr><tr><td>1</td><td>105.55</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.55</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.28</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.84</td><td>0.00</td><td>-9.31</td></tr><tr><td>105.84</td><td>105.55</td><td>-9.31</td><td>-26.33</td></tr><tr><td>105.55</td><td>105.50</td><td>-23.18</td><td>-24.77</td></tr><tr><td>105.50</td><td>105.40</td><td>-24.77</td><td>-27.94</td></tr><tr><td>105.40</td><td>105.15</td><td>-27.94</td><td>-35.86</td></tr><tr><td>105.15</td><td>105.00</td><td>-35.86</td><td>-40.64</td></tr><tr><td>105.00</td><td>104.45</td><td>-40.64</td><td>-49.44</td></tr><tr><td>104.45</td><td>103.64</td><td>-49.44</td><td>-62.24</td></tr><tr><td>103.64</td><td>103.44</td><td>-62.24</td><td>-65.38</td></tr><tr><td>103.44</td><td>102.55</td><td>-65.38</td><td>-79.51</td></tr><tr><td>102.55</td><td>102.45</td><td>-143.12</td><td>-147.37</td></tr><tr><td>102.45</td><td>101.85</td><td>-147.37</td><td>-172.88</td></tr><tr><td>101.85</td><td>101.45</td><td>-172.88</td><td>-189.89</td></tr><tr><td>101.45</td><td>100.45</td><td>-189.89</td><td>-232.40</td></tr><tr><td>100.45</td><td>99.45</td><td>-232.40</td><td>-274.92</td></tr><tr><td>99.45</td><td>98.45</td><td>-274.92</td><td>-317.43</td></tr><tr><td>98.45</td><td>98.10</td><td>-317.43</td><td>-332.31</td></tr><tr><td>98.10</td><td>97.73</td><td>-332.31</td><td>-347.95</td></tr><tr><td>97.73</td><td>96.48</td><td>-347.95</td><td>-401.25</td></tr><tr><td>96.48</td><td>80.00</td><td>-401.25</td><td>-1101.55</td></tr></table> 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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-8.6</td><td>0.00</td><td>0.00</td><td>5.04</td></tr><tr><td>105.89</td><td>-8.5</td><td>1.19</td><td>10.09</td><td>10.08</td></tr><tr><td>105.84</td><td>-8.4</td><td>1.19</td><td>9.98</td><td>15.13</td></tr><tr><td>105.84</td><td>-8.4</td><td>1.80</td><td>15.13</td><td>15.13</td></tr><tr><td>105.79</td><td>-8.3</td><td>1.80</td><td>14.98</td><td>19.74</td></tr><tr><td>105.60</td><td>-8.0</td><td>4.77</td><td>38.18</td><td>38.18</td></tr><tr><td>105.55</td><td>-7.9</td><td>4.77</td><td>37.80</td><td>42.79</td></tr><tr><td>105.55</td><td>-7.9</td><td>4.76</td><td>37.67</td><td>37.67</td></tr><tr><td>105.50</td><td>-7.8</td><td>4.76</td><td>37.28</td><td>40.25</td></tr><tr><td>105.50</td><td>-7.8</td><td>5.00</td><td>39.19</td><td>40.25</td></tr><tr><td>105.45</td><td>-7.8</td><td>5.00</td><td>38.78</td><td>42.82</td></tr><tr><td>105.45</td><td>-7.8</td><td>5.00</td><td>38.78</td><td>42.82</td></tr><tr><td>105.40</td><td>-7.7</td><td>5.00</td><td>38.37</td><td>45.40</td></tr><tr><td>105.40</td><td>-7.7</td><td>5.00</td><td>38.37</td><td>45.40</td></tr><tr><td>105.35</td><td>-7.6</td><td>5.00</td><td>37.96</td><td>47.97</td></tr><tr><td>105.20</td><td>-7.3</td><td>5.00</td><td>36.75</td><td>55.69</td></tr><tr><td>105.15</td><td>-7.3</td><td>5.00</td><td>36.34</td><td>58.27</td></tr><tr><td>105.15</td><td>-7.3</td><td>5.00</td><td>36.34</td><td>58.27</td></tr><tr><td>105.10</td><td>-7.2</td><td>5.00</td><td>35.93</td><td>60.86</td></tr><tr><td>105.05</td><td>-7.1</td><td>5.00</td><td>35.53</td><td>63.44</td></tr><tr><td>105.00</td><td>-7.0</td><td>5.00</td><td>35.12</td><td>66.03</td></tr><tr><td>105.00</td><td>-7.0</td><td>5.00</td><td>35.12</td><td>66.03</td></tr><tr><td>104.95</td><td>-6.9</td><td>5.00</td><td>34.72</td><td>67.33</td></tr><tr><td>104.50</td><td>-6.2</td><td>5.00</td><td>31.10</td><td>79.03</td></tr><tr><td>104.45</td><td>-6.1</td><td>5.00</td><td>30.71</td><td>80.33</td></tr><tr><td>104.45</td><td>-6.1</td><td>5.00</td><td>30.71</td><td>80.33</td></tr><tr><td>104.39</td><td>-6.1</td><td>5.00</td><td>30.31</td><td>81.63</td></tr><tr><td>103.69</td><td>-5.0</td><td>5.00</td><td>24.91</td><td>99.84</td></tr><tr><td>103.64</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>101.14</td></tr><tr><td>103.64</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>101.14</td></tr><tr><td>103.59</td><td>-4.8</td><td>5.00</td><td>24.17</td><td>102.41</td></tr><tr><td>103.49</td><td>-4.7</td><td>5.00</td><td>23.44</td><td>104.96</td></tr><tr><td>103.44</td><td>-4.6</td><td>5.00</td><td>23.08</td><td>106.24</td></tr><tr><td>103.44</td><td>-4.6</td><td>5.00</td><td>23.08</td><td>106.24</td></tr><tr><td>103.39</td><td>-4.5</td><td>5.00</td><td>22.72</td><td>107.52</td></tr><tr><td>102.60</td><td>-3.5</td><td>5.00</td><td>17.26</td><td>127.93</td></tr><tr><td>102.55</td><td>-3.4</td><td>5.00</td><td>16.94</td><td>129.21</td></tr><tr><td>102.55</td><td>-3.4</td><td>50.00</td><td>169.44</td><td>232.57</td></tr></table>						103.44	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.45	0.0	0.0	0.0	101.85	0.0	0.0	0.0	101.45	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-11.1	-	-	-	107.45	-11.1	-	-	-	107.45	-11.1	-	-	-	107.40	-11.0	-	-	-	106.95	-10.2	-	-	-	106.89	-10.1	-	-	-	106.89	-10.1	-	-	-	106.84	-10.0	-	-	-	106.50	-9.5	-	-	-	106.45	-9.4	-	-	-	106.45	-9.4	-	-	-	106.39	-9.3	-	-	-	106.34	-9.2	-	-	-	106.28	-9.1	-	-	-	106.28	-9.1	-	-	-	106.23	-9.0	-	-	-	106.04	-8.7	-	-	-	106.00	-8.7	0.00	0.00	0.00	106.00	-8.7	0.00	0.00	0.00	105.95	-8.6	0.00	0.00	5.04	105.89	-8.5	1.19	10.09	10.08	105.84	-8.4	1.19	9.98	15.13	105.84	-8.4	1.80	15.13	15.13	105.79	-8.3	1.80	14.98	19.74	105.60	-8.0	4.77	38.18	38.18	105.55	-7.9	4.77	37.80	42.79	105.55	-7.9	4.76	37.67	37.67	105.50	-7.8	4.76	37.28	40.25	105.50	-7.8	5.00	39.19	40.25	105.45	-7.8	5.00	38.78	42.82	105.45	-7.8	5.00	38.78	42.82	105.40	-7.7	5.00	38.37	45.40	105.40	-7.7	5.00	38.37	45.40	105.35	-7.6	5.00	37.96	47.97	105.20	-7.3	5.00	36.75	55.69	105.15	-7.3	5.00	36.34	58.27	105.15	-7.3	5.00	36.34	58.27	105.10	-7.2	5.00	35.93	60.86	105.05	-7.1	5.00	35.53	63.44	105.00	-7.0	5.00	35.12	66.03	105.00	-7.0	5.00	35.12	66.03	104.95	-6.9	5.00	34.72	67.33	104.50	-6.2	5.00	31.10	79.03	104.45	-6.1	5.00	30.71	80.33	104.45	-6.1	5.00	30.71	80.33	104.39	-6.1	5.00	30.31	81.63	103.69	-5.0	5.00	24.91	99.84	103.64	-4.9	5.00	24.53	101.14	103.64	-4.9	5.00	24.53	101.14	103.59	-4.8	5.00	24.17	102.41	103.49	-4.7	5.00	23.44	104.96	103.44	-4.6	5.00	23.08	106.24	103.44	-4.6	5.00	23.08	106.24	103.39	-4.5	5.00	22.72	107.52	102.60	-3.5	5.00	17.26	127.93	102.55	-3.4	5.00	16.94	129.21	102.55	-3.4	50.00	169.44	232.57
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103.44	-4.6	5.00	23.08	106.24																																																																																																																																																																																																																																																																																																																																												
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103.39	-4.5	5.00	22.72	107.52																																																																																																																																																																																																																																																																																																																																												
102.60	-3.5	5.00	17.26	127.93																																																																																																																																																																																																																																																																																																																																												
102.55	-3.4	5.00	16.94	129.21																																																																																																																																																																																																																																																																																																																																												
102.55	-3.4	50.00	169.44	232.57																																																																																																																																																																																																																																																																																																																																												
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																														

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																							
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<table><tr><td>102.50</td><td>-3.3</td><td>50.00</td><td>166.24</td><td>236.03</td></tr><tr><td>102.50</td><td>-3.3</td><td>50.00</td><td>166.24</td><td>236.03</td></tr><tr><td>102.45</td><td>-3.3</td><td>50.00</td><td>163.07</td><td>239.48</td></tr><tr><td>102.45</td><td>-3.3</td><td>50.00</td><td>163.07</td><td>239.48</td></tr><tr><td>102.40</td><td>-3.2</td><td>50.00</td><td>159.93</td><td>242.94</td></tr><tr><td>101.90</td><td>-2.6</td><td>50.00</td><td>130.42</td><td>277.48</td></tr><tr><td>101.85</td><td>-2.6</td><td>50.00</td><td>127.66</td><td>280.93</td></tr><tr><td>101.85</td><td>-2.6</td><td>50.00</td><td>127.66</td><td>280.93</td></tr><tr><td>101.80</td><td>-2.5</td><td>50.00</td><td>124.93</td><td>284.39</td></tr><tr><td>101.50</td><td>-2.2</td><td>50.00</td><td>109.33</td><td>305.11</td></tr><tr><td>101.45</td><td>-2.1</td><td>50.00</td><td>106.85</td><td>308.57</td></tr><tr><td>101.45</td><td>-2.1</td><td>50.00</td><td>106.85</td><td>308.57</td></tr><tr><td>101.40</td><td>-2.1</td><td>50.00</td><td>104.41</td><td>312.02</td></tr><tr><td>100.50</td><td>-1.3</td><td>50.00</td><td>65.82</td><td>374.20</td></tr><tr><td>100.45</td><td>-1.3</td><td>50.00</td><td>63.94</td><td>377.65</td></tr><tr><td>100.45</td><td>-1.3</td><td>50.00</td><td>63.94</td><td>377.65</td></tr><tr><td>100.40</td><td>-1.2</td><td>50.00</td><td>62.08</td><td>381.11</td></tr><tr><td>99.50</td><td>-0.6</td><td>50.00</td><td>31.99</td><td>443.28</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.46</td><td>446.74</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.46</td><td>446.74</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>28.93</td><td>450.19</td></tr><tr><td>98.50</td><td>-0.1</td><td>50.00</td><td>2.57</td><td>512.37</td></tr><tr><td>98.45</td><td>0.0</td><td>50.00</td><td>1.14</td><td>515.82</td></tr><tr><td>98.45</td><td>0.0</td><td>50.00</td><td>1.14</td><td>515.82</td></tr><tr><td>98.40</td><td>0.0</td><td>50.00</td><td>-0.30</td><td>519.28</td></tr><tr><td>98.15</td><td>0.1</td><td>50.00</td><td>-7.46</td><td>536.55</td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-8.89</td><td>540.00</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03281724 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G'',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 61.63 kN/m (Eah,k = 352.02 kN/m) Bv,k = 143.61 Summe V,k = 94.95 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.55</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.55</td><td>102.55</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p> <p>Einwirkungen Vd = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 71.00 + 0.00 = 283.32 kN/m ==> µ = Vd / Rd = 283.32 / 1039.87 = 0.27</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.50	-3.3	50.00	166.24	236.03	102.50	-3.3	50.00	166.24	236.03	102.45	-3.3	50.00	163.07	239.48	102.45	-3.3	50.00	163.07	239.48	102.40	-3.2	50.00	159.93	242.94	101.90	-2.6	50.00	130.42	277.48	101.85	-2.6	50.00	127.66	280.93	101.85	-2.6	50.00	127.66	280.93	101.80	-2.5	50.00	124.93	284.39	101.50	-2.2	50.00	109.33	305.11	101.45	-2.1	50.00	106.85	308.57	101.45	-2.1	50.00	106.85	308.57	101.40	-2.1	50.00	104.41	312.02	100.50	-1.3	50.00	65.82	374.20	100.45	-1.3	50.00	63.94	377.65	100.45	-1.3	50.00	63.94	377.65	100.40	-1.2	50.00	62.08	381.11	99.50	-0.6	50.00	31.99	443.28	99.45	-0.6	50.00	30.46	446.74	99.45	-0.6	50.00	30.46	446.74	99.40	-0.6	50.00	28.93	450.19	98.50	-0.1	50.00	2.57	512.37	98.45	0.0	50.00	1.14	515.82	98.45	0.0	50.00	1.14	515.82	98.40	0.0	50.00	-0.30	519.28	98.15	0.1	50.00	-7.46	536.55	98.10	0.2	50.00	-8.89	540.00	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.55	0.00	S1: Auffüllungen	105.55	102.55	0.00	S2: Auelehm	102.55	98.10	55.00	s3: Flussskies, -sand
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Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																							

Statisch geprüft für Standsicherheit

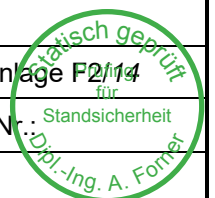
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 12_BS 6_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.60 1.10 0.29 0.28 0.61 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Blocklasten Aktiver Erddruck für Blocklasten verwendet Nr. sig(v) sig(h) x(links) x(rechts) Tiefe [-] [kN/m²] [kN/m²] [m] [m] [mNHN] 1 37.80 0.00 6.00 6.80 106.35 Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ [-] [mNHN] [mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²] 1 103.64 97.73 96.48 4.15 0.73 0.00 2 Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Blocklasten nicht umgelagert</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p>		
Schnitt:	Anlage F2 Schnitt 6R	Seite Anlage F2/13
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



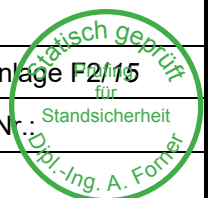
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																								
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<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>1 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 301.892 / 384.011 = 0.786$</div> <div>Bettungslager $B_{h,d} = 301.892 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 384.011 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>$N_{d'}$</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-98.01</td><td>-84.88</td><td>-84.88</td><td>-8.04</td><td>6.900E+4</td><td>2.100E+7</td><td>-108.22 Steife</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>$N_{d'}$</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.9</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.3</td><td>0.0</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.5</td><td>0.1</td><td>-98.14</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 6\Rechtes Ufer\10_BS 6_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0079</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.55</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.55</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table></div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div><table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.55</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-98.01	-84.88	-84.88	-8.04	6.900E+4	2.100E+7	-108.22 Steife	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-9.0	0.0	-98.14	0.00	0.00	-0.90	106.95	-9.2	0.0	-98.14	0.00	0.00	-0.90	106.95	-9.2	0.0	-98.14	0.00	0.00	-0.80	106.95	-9.3	0.0	-98.14	0.00	0.00	-0.70	106.95	-9.5	0.0	-98.14	0.00	0.00	-0.60	106.95	-9.6	0.0	-98.14	0.00	0.00	-0.50	106.95	-9.7	0.0	-98.14	0.00	0.00	-0.40	106.95	-9.9	0.0	-98.14	0.00	0.00	-0.30	106.95	-10.0	0.0	-98.14	0.00	0.00	-0.20	106.95	-10.2	0.0	-98.14	0.00	0.00	-0.10	106.95	-10.3	0.0	-98.14	0.00	0.00	0.00	106.95	-10.5	0.1	-98.14	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0079	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.55	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.55	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.55	0.390	0.461	30.000	10.00	57.80	0.179	2	102.55	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179
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<div>Aktive Erddruckkoordinaten ([g+q],k)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>106.950</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.280</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>106.280</td><td>105.550</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>27.199</td><td>27.199</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.400</td><td>27.199</td><td>27.199</td><td>0.00</td><td>1.00</td></tr><tr><td>105.400</td><td>105.000</td><td>27.199</td><td>27.199</td><td>1.00</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>22.666</td><td>22.666</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.639</td><td>22.666</td><td>22.666</td><td>5.00</td><td>5.00</td></tr><tr><td>103.639</td><td>103.400</td><td>22.666</td><td>26.681</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.550</td><td>26.681</td><td>26.188</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>33.098</td><td>33.450</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>33.450</td><td>35.564</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>35.564</td><td>36.973</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>36.973</td><td>40.496</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>40.496</td><td>44.018</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>44.018</td><td>47.541</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>47.541</td><td>48.774</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>97.731</td><td>48.774</td><td>50.070</td><td>5.00</td><td>5.00</td></tr><tr><td>97.731</td><td>96.477</td><td>50.070</td><td>54.486</td><td>5.00</td><td>5.00</td></tr><tr><td>96.477</td><td>80.000</td><td>54.486</td><td>122.067</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kph</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckkoordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>97.73</td><td>-189.19</td><td>-204.83</td></tr><tr><td>97.73</td><td>96.48</td><td>-204.83</td><td>-258.13</td></tr><tr><td>96.48</td><td>80.00</td><td>-258.13</td><td>-958.43</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.6</td><td>-15.6</td><td>-3.9</td><td>-98.1</td></tr><tr><td>106.95</td><td>-16.6</td><td>82.5</td><td>-3.9</td><td></td></tr><tr><td>106.89</td><td>-18.7</td><td>80.5</td><td>1.3</td><td></td></tr><tr><td>106.45</td><td>-33.2</td><td>66.9</td><td>33.4</td><td></td></tr><tr><td>106.28</td><td>-38.8</td><td>61.6</td><td>44.3</td><td></td></tr><tr><td>105.55</td><td>-63.0</td><td>38.7</td><td>80.9</td><td></td></tr><tr><td>105.50</td><td>-64.5</td><td>37.1</td><td>82.8</td><td></td></tr><tr><td>105.40</td><td>-67.5</td><td>34.0</td><td>86.4</td><td></td></tr><tr><td>105.00</td><td>-79.6</td><td>20.0</td><td>97.2</td><td></td></tr><tr><td>104.40</td><td>-96.8</td><td>0.8</td><td>103.5</td><td></td></tr><tr><td>103.64</td><td>-118.7</td><td>-23.6</td><td>94.8</td><td></td></tr><tr><td>103.40</td><td>-125.9</td><td>-32.4</td><td>88.1</td><td></td></tr></tbody></table>						von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	27.199	27.199	0.00	0.00	106.950	106.886	27.199	27.199	0.00	0.00	106.886	106.450	27.199	27.199	0.00	0.00	106.450	106.280	27.199	27.199	0.00	0.00	106.280	105.550	27.199	27.199	0.00	0.00	105.550	105.500	27.199	27.199	0.00	0.00	105.500	105.400	27.199	27.199	0.00	1.00	105.400	105.000	27.199	27.199	1.00	5.00	105.000	104.400	22.666	22.666	5.00	5.00	104.400	103.639	22.666	22.666	5.00	5.00	103.639	103.400	22.666	26.681	5.00	5.00	103.400	102.550	26.681	26.188	5.00	5.00	102.550	102.450	33.098	33.450	5.00	5.00	102.450	101.850	33.450	35.564	5.00	5.00	101.850	101.450	35.564	36.973	5.00	5.00	101.450	100.449	36.973	40.496	5.00	5.00	100.449	99.449	40.496	44.018	5.00	5.00	99.449	98.449	44.018	47.541	5.00	5.00	98.449	98.099	47.541	48.774	5.00	5.00	98.099	97.731	48.774	50.070	5.00	5.00	97.731	96.477	50.070	54.486	5.00	5.00	96.477	80.000	54.486	122.067	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kph	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	97.73	-189.19	-204.83	97.73	96.48	-204.83	-258.13	96.48	80.00	-258.13	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.6	-15.6	-3.9	-98.1	106.95	-16.6	82.5	-3.9		106.89	-18.7	80.5	1.3		106.45	-33.2	66.9	33.4		106.28	-38.8	61.6	44.3		105.55	-63.0	38.7	80.9		105.50	-64.5	37.1	82.8		105.40	-67.5	34.0	86.4		105.00	-79.6	20.0	97.2		104.40	-96.8	0.8	103.5		103.64	-118.7	-23.6	94.8		103.40	-125.9	-32.4	88.1	
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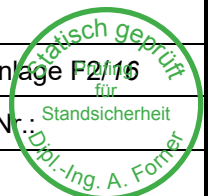
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Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.55 -151.3 -63.5 47.3</div><div>102.45 -154.1 -67.7 40.8</div><div>101.85 -160.1 -77.4 -4.1</div><div>101.45 -157.9 -68.8 -33.8</div><div>100.45 -131.8 1.2 -72.2</div><div>99.45 -114.6 44.9 -43.4</div><div>98.45 -121.9 22.8 -4.2</div><div>98.10 -128.7 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div><div>107.45 0.0 0.0 0.0</div><div>106.95 -14.4 -13.6 -3.4 -84.9</div><div>106.95 -14.4 71.3 -3.4</div><div>106.89 -16.3 69.5 1.1</div><div>106.45 -28.8 57.7 28.8</div><div>106.28 -33.7 53.1 38.2</div><div>105.55 -54.8 33.2 69.7</div><div>105.50 -56.1 31.8 71.4</div><div>105.40 -58.7 29.1 74.4</div><div>105.00 -69.2 17.0 83.7</div><div>104.40 -84.2 0.4 88.9</div><div>103.64 -103.2 -20.7 81.2</div><div>103.40 -109.4 -28.2 75.3</div><div>102.55 -131.5 -54.9 40.0</div><div>102.45 -134.0 -58.5 34.4</div><div>101.85 -139.2 -66.8 -4.4</div><div>101.45 -137.3 -59.3 -30.0</div><div>100.45 -114.7 1.4 -63.0</div><div>99.45 -99.8 39.1 -37.8</div><div>98.45 -106.2 19.8 -3.7</div><div>98.10 -112.1 0.0 0.0</div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div><div>107.45 0.0 0.0 0.0</div><div>106.95 -14.4 -13.6 -3.4 -84.9</div><div>106.95 -14.4 71.3 -3.4</div><div>106.89 -16.3 69.5 1.1</div><div>106.45 -28.8 57.7 28.8</div><div>106.28 -33.7 53.1 38.2</div><div>105.55 -54.8 33.2 69.7</div><div>105.50 -56.1 31.8 71.4</div><div>105.40 -58.7 29.1 74.4</div><div>105.00 -69.2 17.0 83.7</div><div>104.40 -84.2 0.4 88.9</div><div>103.64 -103.2 -20.7 81.2</div><div>103.40 -109.4 -28.2 75.3</div><div>102.55 -131.5 -54.9 40.0</div><div>102.45 -134.0 -58.5 34.4</div><div>101.85 -139.2 -66.8 -4.4</div><div>101.45 -137.3 -59.3 -30.0</div><div>100.45 -114.7 1.4 -63.0</div><div>99.45 -99.8 39.1 -37.8</div><div>98.45 -106.2 19.8 -3.7</div><div>98.10 -112.1 0.0 0.0</div></div></div></div><div><div>Schnittgrößen (q,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div><div>107.45 0.0 0.0 0.0</div><div>106.95 0.0 0.0 0.0 0.0</div><div>106.89 0.0 0.0 0.0</div><div>106.45 0.0 0.0 0.0</div><div>106.28 0.0 0.0 0.0</div><div>105.55 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.40 0.0 0.0 0.0</div><div>105.00 0.0 0.0 0.0</div></div></div></div></div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>104.400.00.00.0.0</div><div>103.640.00.00.0.0</div><div>103.400.00.00.0.0</div><div>102.550.00.00.0.0</div><div>102.450.00.00.0.0</div><div>101.850.00.00.0.0</div><div>101.450.00.00.0.0</div><div>100.450.00.00.0.0</div><div>99.450.00.00.0.0</div><div>98.450.00.00.0.0</div><div>98.100.00.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>107.45-9.5-- 107.40-9.4-- 107.00-9.1-- 106.95-9.1-- 106.95-9.1-- 106.89-9.0-- 106.89-9.0-- 106.84-9.0-- 106.50-8.7-- 106.45-8.7-- 106.45-8.7-- 106.39-8.7-- 106.34-8.6-- 106.28-8.6-- 106.28-8.6-- 106.23-8.5-- 105.60-8.0-- 105.55-8.0-- 105.55-8.0-- 105.50-7.9-- 105.50-7.9-- 105.45-7.9-- 105.45-7.9-- 105.40-7.9-- 105.40-7.9-- 105.35-7.8-- 105.05-7.6-- 105.00-7.5-- 105.00-7.5-- 104.95-7.5-- 104.45-7.0-- 104.40-6.9-- 104.40-6.9-- 104.35-6.9-- 103.69-6.2-- 103.64-6.1-- 103.64-6.1-- 103.59-6.1-- 103.45-5.9-- 103.40-5.9-- 103.40-5.9-- 103.35-5.8-- 102.60-4.9-- 102.55-4.80.000.000.00</div><div>102.55-4.80.000.000.00</div><div>102.50-4.80.000.003.45</div><div>102.50-4.80.723.453.45</div><div>102.45-4.70.723.416.91</div><div>102.45-4.71.476.916.91</div><div>102.40-4.71.476.8210.36</div><div>101.90-4.011.1544.9144.91</div><div>101.85-4.011.1544.2148.36</div><div>101.85-4.012.2048.3648.36</div><div>101.80-3.912.2047.6051.81</div><div>101.50-3.520.5772.5472.54</div></div></div></div>					
Schnitt:		Anlage F2 Schnitt 6R		Seite Anlage F2/17	
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 210117	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	


Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																													
Auftraggeber: Stadtverwaltung Leipzig																																																																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																													
<table><tr><td>101.45</td><td>-3.5</td><td>20.57</td><td>71.26</td><td>75.99</td></tr><tr><td>101.45</td><td>-3.5</td><td>21.94</td><td>76.00</td><td>75.99</td></tr><tr><td>101.40</td><td>-3.4</td><td>21.94</td><td>74.63</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.3</td><td>50.00</td><td>115.92</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.3</td><td>50.00</td><td>113.02</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.3</td><td>50.00</td><td>113.02</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.2</td><td>50.00</td><td>110.14</td><td>148.53</td></tr><tr><td>99.50</td><td>-1.2</td><td>50.00</td><td>60.37</td><td>210.71</td></tr><tr><td>99.45</td><td>-1.2</td><td>50.00</td><td>57.71</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.2</td><td>50.00</td><td>57.71</td><td>214.17</td></tr><tr><td>99.40</td><td>-1.1</td><td>50.00</td><td>55.05</td><td>217.62</td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>8.12</td><td>279.80</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>5.54</td><td>283.25</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>5.54</td><td>283.25</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>2.96</td><td>286.71</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-9.93</td><td>303.98</td></tr><tr><td>98.10</td><td>0.3</td><td>50.00</td><td>-12.51</td><td>307.43</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05907146 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 54.18 kN/m (Eah,k = 308.47 kN/m) Bv,k = 103.69 Summe V,k = 127.42 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m Rd = Rb,d + Rs1,d = 1039.87 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 62.44 + 0.00 = 274.75 kN/m ==> µ = V,d / Rd = 274.75 / 1039.87 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			101.45	-3.5	20.57	71.26	75.99	101.45	-3.5	21.94	76.00	75.99	101.40	-3.4	21.94	74.63	79.45	100.50	-2.3	50.00	115.92	141.63	100.45	-2.3	50.00	113.02	145.08	100.45	-2.3	50.00	113.02	145.08	100.40	-2.2	50.00	110.14	148.53	99.50	-1.2	50.00	60.37	210.71	99.45	-1.2	50.00	57.71	214.17	99.45	-1.2	50.00	57.71	214.17	99.40	-1.1	50.00	55.05	217.62	98.50	-0.2	50.00	8.12	279.80	98.45	-0.1	50.00	5.54	283.25	98.45	-0.1	50.00	5.54	283.25	98.40	-0.1	50.00	2.96	286.71	98.15	0.2	50.00	-9.93	303.98	98.10	0.3	50.00	-12.51	307.43	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
101.45	-3.5	20.57	71.26	75.99																																																																																											
101.45	-3.5	21.94	76.00	75.99																																																																																											
101.40	-3.4	21.94	74.63	79.45																																																																																											
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99.45	-1.2	50.00	57.71	214.17																																																																																											
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99.40	-1.1	50.00	55.05	217.62																																																																																											
98.50	-0.2	50.00	8.12	279.80																																																																																											
98.45	-0.1	50.00	5.54	283.25																																																																																											
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98.40	-0.1	50.00	2.96	286.71																																																																																											
98.15	0.2	50.00	-9.93	303.98																																																																																											
98.10	0.3	50.00	-12.51	307.43																																																																																											
von	bis	qs,k [kN/m²]	Bezeichnung																																																																																												
102.55	98.10	55.00	s3: Flussskies, -sand																																																																																												
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/16																																																																																													
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 																																																																																													
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																													

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 13_BS 6_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.60 1.10 0.29 0.28 0.61 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Blocklasten Aktiver Erddruck für Blocklasten verwendet Nr. sig(v) sig(h) x(links) x(rechts) Tiefe [-] [kN/m²] [kN/m²] [m] [m] [mNHN] 1 37.80 0.00 6.00 6.80 106.35 Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ [-] [mNHN] [mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²] 1 103.64 97.73 96.48 4.15 0.73 0.00 2 Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.60 107.45 107.45 107.45 105.84 105.15 nein Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b Blocklasten nicht umgelagert Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/19
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 326.312 / 393.101 = 0.830$
Bettungslager $B_{h,d} = 326.312 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 393.101 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	106.95	0.00	1.00	-123.26	-106.83	-106.83	-8.19	6.900E+4	2.100E+7	-136.21

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	106.95	-9.0	0.0	-123.39	0.00	0.00
-0.90	106.95	-9.2	0.0	-123.39	0.00	0.00
-0.90	106.95	-9.2	0.0	-123.39	0.00	0.00
-0.80	106.95	-9.4	0.0	-123.39	0.00	0.00
-0.70	106.95	-9.6	0.0	-123.39	0.00	0.00
-0.60	106.95	-9.7	0.0	-123.39	0.00	0.00
-0.50	106.95	-9.9	0.0	-123.39	0.00	0.00
-0.40	106.95	-10.1	0.0	-123.39	0.00	0.00
-0.30	106.95	-10.3	0.0	-123.39	0.00	0.00
-0.20	106.95	-10.5	0.0	-123.39	0.00	0.00
-0.10	106.95	-10.6	0.1	-123.39	0.00	0.00
0.00	106.95	-10.8	0.1	-123.39	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_6\Rechtes_Ufer\10_BS_6_LF1.1 (ohne Lasten).vrb
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	106.95	-0.0079

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.55	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.55	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
(Erddruckbeiwerte für horizontales Gelände)
Wandreibung angepasst.

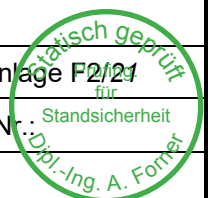
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.55	0.390	0.461	30.000	10.00	57.80	0.179
2	102.55	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Schnitt: Anlage F2	Schnitt 6R	Seite Anlage F2/20
Kapitel: 4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

statisch geprüft
 für
 Standsicherheit
 Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																								
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																								
<div>Aktive Erddruckkoordinaten ([g+q],k)</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.450</td><td>107.448</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.280</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>106.280</td><td>105.841</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>105.841</td><td>105.550</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>33.363</td><td>33.363</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.151</td><td>33.363</td><td>33.363</td><td>0.50</td><td>3.49</td></tr><tr><td>105.151</td><td>105.000</td><td>33.363</td><td>33.363</td><td>3.49</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>27.802</td><td>27.802</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.250</td><td>27.802</td><td>27.802</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</td><td>103.639</td><td>27.802</td><td>27.802</td><td>5.00</td><td>5.00</td></tr><tr><td>103.639</td><td>103.400</td><td>27.802</td><td>31.817</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.550</td><td>31.817</td><td>31.324</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>36.665</td><td>37.017</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>37.017</td><td>39.131</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>39.131</td><td>40.540</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>40.540</td><td>44.062</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>44.062</td><td>47.585</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>47.585</td><td>51.107</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>51.107</td><td>52.340</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>97.731</td><td>52.340</td><td>53.636</td><td>5.00</td><td>5.00</td></tr><tr><td>97.731</td><td>96.477</td><td>53.636</td><td>58.052</td><td>5.00</td><td>5.00</td></tr><tr><td>96.477</td><td>80.000</td><td>58.052</td><td>125.633</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckkoordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.79</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.79</td><td>-174.31</td></tr><tr><td>98.45</td><td>98.10</td><td>-174.31</td><td>-189.19</td></tr><tr><td>98.10</td><td>97.73</td><td>-189.19</td><td>-204.83</td></tr><tr><td>97.73</td><td>96.48</td><td>-204.83</td><td>-258.13</td></tr><tr><td>96.48</td><td>80.00</td><td>-258.13</td><td>-958.43</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-17.9</td><td>-19.2</td><td>-4.8</td><td>-123.4</td></tr><tr><td>106.95</td><td>-17.9</td><td>104.2</td><td>-4.8</td><td></td></tr><tr><td>106.89</td><td>-20.2</td><td>101.8</td><td>1.8</td><td></td></tr><tr><td>106.45</td><td>-35.7</td><td>85.0</td><td>42.5</td><td></td></tr><tr><td>106.28</td><td>-41.8</td><td>78.5</td><td>56.4</td><td></td></tr><tr><td>105.84</td><td>-57.5</td><td>61.7</td><td>87.2</td><td></td></tr><tr><td>105.55</td><td>-67.9</td><td>50.5</td><td>103.5</td><td></td></tr></tbody></table>			von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	33.363	33.363	0.00	0.00	107.448	106.950	33.363	33.363	0.00	0.00	106.950	106.886	33.363	33.363	0.00	0.00	106.886	106.450	33.363	33.363	0.00	0.00	106.450	106.280	33.363	33.363	0.00	0.00	106.280	105.841	33.363	33.363	0.00	0.00	105.841	105.550	33.363	33.363	0.00	0.00	105.550	105.500	33.363	33.363	0.00	0.00	105.500	105.450	33.363	33.363	0.00	0.50	105.450	105.151	33.363	33.363	0.50	3.49	105.151	105.000	33.363	33.363	3.49	5.00	105.000	104.400	27.802	27.802	5.00	5.00	104.400	104.250	27.802	27.802	5.00	5.00	104.250	103.639	27.802	27.802	5.00	5.00	103.639	103.400	27.802	31.817	5.00	5.00	103.400	102.550	31.817	31.324	5.00	5.00	102.550	102.450	36.665	37.017	5.00	5.00	102.450	101.850	37.017	39.131	5.00	5.00	101.850	101.450	39.131	40.540	5.00	5.00	101.450	100.449	40.540	44.062	5.00	5.00	100.449	99.449	44.062	47.585	5.00	5.00	99.449	98.449	47.585	51.107	5.00	5.00	98.449	98.099	51.107	52.340	5.00	5.00	98.099	97.731	52.340	53.636	5.00	5.00	97.731	96.477	53.636	58.052	5.00	5.00	96.477	80.000	58.052	125.633	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.79	99.45	98.45	-131.79	-174.31	98.45	98.10	-174.31	-189.19	98.10	97.73	-189.19	-204.83	97.73	96.48	-204.83	-258.13	96.48	80.00	-258.13	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-17.9	-19.2	-4.8	-123.4	106.95	-17.9	104.2	-4.8		106.89	-20.2	101.8	1.8		106.45	-35.7	85.0	42.5		106.28	-41.8	78.5	56.4		105.84	-57.5	61.7	87.2		105.55	-67.9	50.5	103.5		Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/21	
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106.45	-35.7	85.0	42.5																																																																																																																																																																																																																																																																																																																							
106.28	-41.8	78.5	56.4																																																																																																																																																																																																																																																																																																																							
105.84	-57.5	61.7	87.2																																																																																																																																																																																																																																																																																																																							
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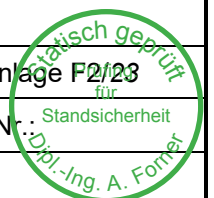
Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>105.50</div><div>-69.5</div><div>48.6</div><div>106.0</div></div><div><div>105.45</div><div>-71.1</div><div>46.6</div><div>108.4</div></div><div><div>105.15</div><div>-80.7</div><div>34.4</div><div>120.5</div></div><div><div>105.00</div><div>-85.5</div><div>27.9</div><div>125.2</div></div><div><div>104.40</div><div>-103.7</div><div>5.1</div><div>135.1</div></div><div><div>104.25</div><div>-108.3</div><div>-0.6</div><div>135.5</div></div><div><div>103.64</div><div>-126.8</div><div>-23.8</div><div>128.0</div></div><div><div>103.40</div><div>-134.3</div><div>-33.9</div><div>121.1</div></div><div><div>102.55</div><div>-161.1</div><div>-70.0</div><div>76.9</div></div><div><div>102.45</div><div>-164.0</div><div>-74.7</div><div>69.7</div></div><div><div>101.85</div><div>-170.0</div><div>-86.8</div><div>19.9</div></div><div><div>101.45</div><div>-167.8</div><div>-79.9</div><div>-13.9</div></div><div><div>100.45</div><div>-140.5</div><div>-11.1</div><div>-65.2</div></div><div><div>99.45</div><div>-117.8</div><div>42.5</div><div>-43.3</div></div><div><div>98.45</div><div>-122.3</div><div>23.4</div><div>-4.4</div></div><div><div>98.10</div><div>-129.1</div><div>0.0</div><div>0.0</div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.5</div><div>-16.7</div><div>-4.2</div><div>-106.8</div></div><div><div>106.95</div><div>-15.5</div><div>90.1</div><div>-4.2</div><div></div></div><div><div>106.89</div><div>-17.5</div><div>88.0</div><div>1.5</div><div></div></div><div><div>106.45</div><div>-31.1</div><div>73.5</div><div>36.7</div><div></div></div><div><div>106.28</div><div>-36.3</div><div>67.8</div><div>48.7</div><div></div></div><div><div>105.84</div><div>-50.0</div><div>53.1</div><div>75.3</div><div></div></div><div><div>105.55</div><div>-59.0</div><div>43.4</div><div>89.3</div><div></div></div><div><div>105.50</div><div>-60.4</div><div>41.8</div><div>91.5</div><div></div></div><div><div>105.45</div><div>-61.8</div><div>40.1</div><div>93.5</div><div></div></div><div><div>105.15</div><div>-70.2</div><div>29.5</div><div>104.0</div><div></div></div><div><div>105.00</div><div>-74.4</div><div>23.8</div><div>108.0</div><div></div></div><div><div>104.40</div><div>-90.2</div><div>4.2</div><div>116.4</div><div></div></div><div><div>104.25</div><div>-94.1</div><div>-0.8</div><div>116.6</div><div></div></div><div><div>103.64</div><div>-110.3</div><div>-20.8</div><div>110.0</div><div></div></div><div><div>103.40</div><div>-116.8</div><div>-29.5</div><div>104.0</div><div></div></div><div><div>102.55</div><div>-140.1</div><div>-60.6</div><div>65.7</div><div></div></div><div><div>102.45</div><div>-142.6</div><div>-64.6</div><div>59.4</div><div></div></div><div><div>101.85</div><div>-147.8</div><div>-75.0</div><div>16.4</div><div></div></div><div><div>101.45</div><div>-145.9</div><div>-69.0</div><div>-12.8</div><div></div></div><div><div>100.45</div><div>-122.2</div><div>-9.3</div><div>-56.9</div><div></div></div><div><div>99.45</div><div>-102.6</div><div>37.1</div><div>-37.6</div><div></div></div><div><div>98.45</div><div>-106.5</div><div>20.4</div><div>-3.8</div><div></div></div><div><div>98.10</div><div>-112.4</div><div>0.0</div><div>0.0</div><div></div></div></div></div> <div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.5</div><div>-16.7</div><div>-4.2</div><div>-106.8</div></div><div><div>106.95</div><div>-15.5</div><div>90.1</div><div>-4.2</div><div></div></div><div><div>106.89</div><div>-17.5</div><div>88.0</div><div>1.5</div><div></div></div><div><div>106.45</div><div>-31.1</div><div>73.5</div><div>36.7</div><div></div></div><div><div>106.28</div><div>-36.3</div><div>67.8</div><div>48.7</div><div></div></div><div><div>105.84</div><div>-50.0</div><div>53.1</div><div>75.3</div><div></div></div><div><div>105.55</div><div>-59.0</div><div>43.4</div><div>89.3</div><div></div></div><div><div>105.50</div><div>-60.4</div><div>41.8</div><div>91.5</div><div></div></div><div><div>105.45</div><div>-61.8</div><div>40.1</div><div>93.5</div><div></div></div><div><div>105.15</div><div>-70.2</div><div>29.5</div><div>104.0</div><div></div></div><div><div>105.00</div><div>-74.4</div><div>23.8</div><div>108.0</div><div></div></div><div><div>104.40</div><div>-90.2</div><div>4.2</div><div>116.4</div><div></div></div><div><div>104.25</div><div>-94.1</div><div>-0.8</div><div>116.6</div><div></div></div><div><div>103.64</div><div>-110.3</div><div>-20.8</div><div>110.0</div><div></div></div><div><div>103.40</div><div>-116.8</div><div>-29.5</div><div>104.0</div><div></div></div><div><div>102.55</div><div>-140.1</div><div>-60.6</div><div>65.7</div><div></div></div><div><div>102.45</div><div>-142.6</div><div>-64.6</div><div>59.4</div><div></div></div><div><div>101.85</div><div>-147.8</div><div>-75.0</div><div>16.4</div><div></div></div><div><div>101.45</div><div>-145.9</div><div>-69.0</div><div>-12.8</div><div></div></div><div><div>100.45</div><div>-122.2</div><div>-9.3</div><div>-56.9</div><div></div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage F2 Schnitt 6R</td><td colspan="2">Seite Anlage F2/22</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">4 LF 2.2 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage F2 Schnitt 6R		Seite Anlage F2/22		Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage F2 Schnitt 6R		Seite Anlage F2/22																			
Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:																			
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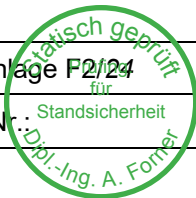


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
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Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/23
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																								
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<table><tr><td>105.00</td><td>-8.0</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.00</td><td>-8.0</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.95</td><td>-8.0</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.45</td><td>-7.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.35</td><td>-7.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.30</td><td>-7.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.25</td><td>-7.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.25</td><td>-7.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.20</td><td>-7.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.69</td><td>-6.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.64</td><td>-6.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.64</td><td>-6.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.59</td><td>-6.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.45</td><td>-6.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.40</td><td>-6.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.40</td><td>-6.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.35</td><td>-6.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.60</td><td>-5.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.55</td><td>-5.3</td><td>0.00</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>102.55</td><td>-5.3</td><td>0.00</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>102.50</td><td>-5.3</td><td>0.00</td><td>0.00</td><td>3.45</td><td></td><td></td></tr><tr><td>102.50</td><td>-5.3</td><td>0.66</td><td>3.45</td><td>3.45</td><td></td><td></td></tr><tr><td>102.45</td><td>-5.2</td><td>0.66</td><td>3.41</td><td>6.91</td><td></td><td></td></tr><tr><td>102.45</td><td>-5.2</td><td>1.33</td><td>6.91</td><td>6.91</td><td></td><td></td></tr><tr><td>102.40</td><td>-5.1</td><td>1.33</td><td>6.82</td><td>10.36</td><td></td><td></td></tr><tr><td>101.90</td><td>-4.5</td><td>10.03</td><td>44.91</td><td>44.91</td><td></td><td></td></tr><tr><td>101.85</td><td>-4.4</td><td>10.03</td><td>44.24</td><td>48.36</td><td></td><td></td></tr><tr><td>101.85</td><td>-4.4</td><td>10.96</td><td>48.36</td><td>48.36</td><td></td><td></td></tr><tr><td>101.80</td><td>-4.3</td><td>10.96</td><td>47.63</td><td>51.81</td><td></td><td></td></tr><tr><td>101.50</td><td>-3.9</td><td>18.40</td><td>72.54</td><td>72.54</td><td></td><td></td></tr><tr><td>101.45</td><td>-3.9</td><td>18.40</td><td>71.31</td><td>75.99</td><td></td><td></td></tr><tr><td>101.45</td><td>-3.9</td><td>19.61</td><td>76.00</td><td>75.99</td><td></td><td></td></tr><tr><td>101.40</td><td>-3.8</td><td>19.61</td><td>74.69</td><td>79.45</td><td></td><td></td></tr><tr><td>100.50</td><td>-2.6</td><td>50.00</td><td>131.34</td><td>141.63</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.6</td><td>50.00</td><td>128.15</td><td>145.08</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.6</td><td>50.00</td><td>128.15</td><td>145.08</td><td></td><td></td></tr><tr><td>100.40</td><td>-2.5</td><td>50.00</td><td>124.98</td><td>148.53</td><td></td><td></td></tr><tr><td>99.50</td><td>-1.4</td><td>50.00</td><td>69.83</td><td>210.71</td><td></td><td></td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>66.87</td><td>214.17</td><td></td><td></td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>66.87</td><td>214.17</td><td></td><td></td></tr><tr><td>99.40</td><td>-1.3</td><td>50.00</td><td>63.91</td><td>217.62</td><td></td><td></td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>11.56</td><td>279.80</td><td></td><td></td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.68</td><td>283.25</td><td></td><td></td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.68</td><td>283.25</td><td></td><td></td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>5.80</td><td>286.71</td><td></td><td></td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-8.60</td><td>303.98</td><td></td><td></td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-11.48</td><td>307.43</td><td></td><td></td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06596100 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p>							105.00	-8.0	-	-	-			105.00	-8.0	-	-	-			104.95	-8.0	-	-	-			104.45	-7.5	-	-	-			104.40	-7.4	-	-	-			104.40	-7.4	-	-	-			104.35	-7.4	-	-	-			104.30	-7.4	-	-	-			104.25	-7.3	-	-	-			104.25	-7.3	-	-	-			104.20	-7.3	-	-	-			103.69	-6.7	-	-	-			103.64	-6.7	-	-	-			103.64	-6.7	-	-	-			103.59	-6.6	-	-	-			103.45	-6.4	-	-	-			103.40	-6.4	-	-	-			103.40	-6.4	-	-	-			103.35	-6.3	-	-	-			102.60	-5.4	-	-	-			102.55	-5.3	0.00	0.00	0.00			102.55	-5.3	0.00	0.00	0.00			102.50	-5.3	0.00	0.00	3.45			102.50	-5.3	0.66	3.45	3.45			102.45	-5.2	0.66	3.41	6.91			102.45	-5.2	1.33	6.91	6.91			102.40	-5.1	1.33	6.82	10.36			101.90	-4.5	10.03	44.91	44.91			101.85	-4.4	10.03	44.24	48.36			101.85	-4.4	10.96	48.36	48.36			101.80	-4.3	10.96	47.63	51.81			101.50	-3.9	18.40	72.54	72.54			101.45	-3.9	18.40	71.31	75.99			101.45	-3.9	19.61	76.00	75.99			101.40	-3.8	19.61	74.69	79.45			100.50	-2.6	50.00	131.34	141.63			100.45	-2.6	50.00	128.15	145.08			100.45	-2.6	50.00	128.15	145.08			100.40	-2.5	50.00	124.98	148.53			99.50	-1.4	50.00	69.83	210.71			99.45	-1.3	50.00	66.87	214.17			99.45	-1.3	50.00	66.87	214.17			99.40	-1.3	50.00	63.91	217.62			98.50	-0.2	50.00	11.56	279.80			98.45	-0.2	50.00	8.68	283.25			98.45	-0.2	50.00	8.68	283.25			98.40	-0.1	50.00	5.80	286.71			98.15	0.2	50.00	-8.60	303.98			98.10	0.2	50.00	-11.48	307.43		
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Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_{,k} = 176.93 \text{ kN/m}$</p> <p>$G'_{,k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 61.63 \text{ kN/m}$ ($E_{ah,k} = 352.03 \text{ kN/m}$)</p> <p>$B_{v,k} = 112.13$</p> <p>Summe $V_{,k} = 126.43 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$</p> <p>$R_{,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 71.00 + 0.00 = 283.32 \text{ kN/m}$</p> <p>$\implies \mu = V_{,d} / R_{,d} = 283.32 / 1039.87 = 0.27$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/25								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

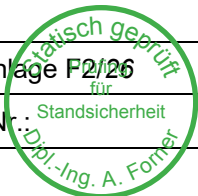
Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 14_BS 6_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.55 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Blocklasten Aktiver Erddruck für Blocklasten verwendet Nr. sig(v) sig(h) x(links) x(rechts) Tiefe [-] [kN/m²] [kN/m²] [m] [m] [mNHN] 1 37.80 0.00 6.00 6.80 106.35 Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ [-] [mNHN] [mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²] 1 103.64 97.73 96.48 4.15 0.73 0.00 2 Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.55 108.55 108.54 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.55 108.55 108.55 106.49 105.59 ja Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/26
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Kraftränder

Momente (im Uhrzeigersinn positiv)

Horizontalkräfte (nach rechts positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-28.20	0.00	0.00	0.00	44.00	0.00

Blocklasten nicht umgelagert

Art des Fußlagers:

Profillänge automatisch und Fuß gebettet

Profillänge = 10.45 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 181.280 / 275.516 = 0.658$

Bettungslager $B_{h,d} = 181.280 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 275.516 \text{ kN/m}$

Anker und Steifen

$N_{,d}' = \text{Bemessungswert (Steifen) mit BS-P (1.275/1.50)}$

$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{,d}'$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-355.73	-297.22	-218.06	-49.24	3.900E+7	2.100E+7	-396.76

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00

max $M_{,d}$ [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	N,d	$Q_{,d}$	$M_{,d}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.1	0.0	-356.42	0.00	0.00
-7.47	103.72	-7.1	0.0	-356.42	0.00	0.00
-7.47	103.72	-7.1	0.0	-356.42	0.00	0.00
-6.64	103.72	-7.1	0.0	-356.42	0.00	0.00
-5.81	103.72	-7.2	0.0	-356.42	0.00	0.00
-4.98	103.72	-7.2	0.0	-356.42	0.00	0.00
-4.15	103.72	-7.2	0.0	-356.42	0.00	0.00
-3.32	103.72	-7.2	0.0	-356.42	0.00	0.00
-2.49	103.72	-7.2	0.1	-356.42	0.00	0.00
-1.66	103.72	-7.2	0.1	-356.42	0.00	0.00
-0.83	103.72	-7.2	0.1	-356.42	0.00	0.00
0.00	103.72	-7.2	0.1	-356.42	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0062

Bodenkennwerte

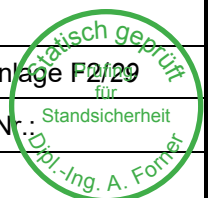
Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.55	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.55	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Schnitt: Anlage F2	Schnitt 6R	Seite Anlage F2/27
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																														
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>phi,k</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.55</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.550</td><td>108.548</td><td>0.000</td><td>14.416</td><td>0.00</td><td>0.00</td></tr><tr><td>108.548</td><td>108.544</td><td>14.416</td><td>19.528</td><td>0.00</td><td>0.00</td></tr><tr><td>108.544</td><td>107.550</td><td>19.528</td><td>26.888</td><td>0.00</td><td>0.00</td></tr><tr><td>107.550</td><td>107.450</td><td>26.888</td><td>27.628</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>106.494</td><td>27.628</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.494</td><td>105.587</td><td>34.710</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>105.587</td><td>105.550</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>31.876</td><td>32.301</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.500</td><td>32.301</td><td>36.556</td><td>0.00</td><td>10.00</td></tr><tr><td>104.500</td><td>103.720</td><td>36.556</td><td>39.875</td><td>10.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.639</td><td>39.875</td><td>40.221</td><td>17.80</td><td>18.61</td></tr><tr><td>103.639</td><td>103.500</td><td>40.221</td><td>44.885</td><td>18.61</td><td>20.00</td></tr><tr><td>103.500</td><td>102.550</td><td>44.885</td><td>48.376</td><td>20.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.500</td><td>36.665</td><td>36.841</td><td>0.00</td><td>0.00</td></tr><tr><td>102.500</td><td>101.550</td><td>36.841</td><td>40.187</td><td>0.00</td><td>0.00</td></tr><tr><td>101.550</td><td>100.549</td><td>40.187</td><td>43.710</td><td>0.00</td><td>0.00</td></tr><tr><td>100.549</td><td>99.549</td><td>43.710</td><td>47.233</td><td>0.00</td><td>0.00</td></tr><tr><td>99.549</td><td>98.549</td><td>47.233</td><td>50.755</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>98.099</td><td>50.755</td><td>52.340</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>97.731</td><td>52.340</td><td>53.636</td><td>0.00</td><td>0.00</td></tr><tr><td>97.731</td><td>96.477</td><td>53.636</td><td>58.052</td><td>0.00</td><td>0.00</td></tr><tr><td>96.477</td><td>80.000</td><td>58.052</td><td>125.633</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.55</td><td>102.55</td></tr></table></div> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div><table><tr><td>Schicht</td><td>UK</td><td>k_{pgh}</td><td>k_{pch}</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table></div> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.50</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.50</td><td>0.00</td><td>-2.13</td></tr><tr><td>102.50</td><td>101.55</td><td>-2.13</td><td>-42.51</td></tr><tr><td>101.55</td><td>100.55</td><td>-42.51</td><td>-85.03</td></tr><tr><td>100.55</td><td>99.55</td><td>-85.03</td><td>-127.54</td></tr><tr><td>99.55</td><td>98.55</td><td>-127.54</td><td>-170.06</td></tr><tr><td>98.55</td><td>98.10</td><td>-170.06</td><td>-189.19</td></tr><tr><td>98.10</td><td>97.73</td><td>-189.19</td><td>-204.83</td></tr><tr><td>97.73</td><td>96.48</td><td>-204.83</td><td>-258.13</td></tr><tr><td>96.48</td><td>80.00</td><td>-258.13</td><td>-958.43</td></tr></table></div>						Schicht	UK	k _{agh}	k _{ach}	phi,k	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.55	0.390	0.461	30.000	10.00	57.80	0.179	2	102.55	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	108.550	108.548	0.000	14.416	0.00	0.00	108.548	108.544	14.416	19.528	0.00	0.00	108.544	107.550	19.528	26.888	0.00	0.00	107.550	107.450	26.888	27.628	0.00	0.00	107.450	106.494	27.628	34.710	0.00	0.00	106.494	105.587	34.710	25.836	0.00	0.00	105.587	105.550	25.836	26.109	0.00	0.00	105.550	105.500	31.876	32.301	0.00	0.00	105.500	104.500	32.301	36.556	0.00	10.00	104.500	103.720	36.556	39.875	10.00	17.80	103.720	103.639	39.875	40.221	17.80	18.61	103.639	103.500	40.221	44.885	18.61	20.00	103.500	102.550	44.885	48.376	20.00	29.50	102.550	102.500	36.665	36.841	0.00	0.00	102.500	101.550	36.841	40.187	0.00	0.00	101.550	100.549	40.187	43.710	0.00	0.00	100.549	99.549	43.710	47.233	0.00	0.00	99.549	98.549	47.233	50.755	0.00	0.00	98.549	98.099	50.755	52.340	0.00	0.00	98.099	97.731	52.340	53.636	0.00	0.00	97.731	96.477	53.636	58.052	0.00	0.00	96.477	80.000	58.052	125.633	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.55	102.55	Schicht	UK	k _{pgh}	k _{pch}	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.50	102.55	0.00	0.00	102.55	102.50	0.00	-2.13	102.50	101.55	-2.13	-42.51	101.55	100.55	-42.51	-85.03	100.55	99.55	-85.03	-127.54	99.55	98.55	-127.54	-170.06	98.55	98.10	-170.06	-189.19	98.10	97.73	-189.19	-204.83	97.73	96.48	-204.83	-258.13	96.48	80.00	-258.13	-958.43	Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/28	
Schicht	UK	k _{agh}	k _{ach}	phi,k	delta	theta	k _{agh} (40°)																																																																																																																																																																																																																																																																											
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103.500	102.550	44.885	48.376	20.00	29.50																																																																																																																																																																																																																																																																													
102.550	102.500	36.665	36.841	0.00	0.00																																																																																																																																																																																																																																																																													
102.500	101.550	36.841	40.187	0.00	0.00																																																																																																																																																																																																																																																																													
101.550	100.549	40.187	43.710	0.00	0.00																																																																																																																																																																																																																																																																													
100.549	99.549	43.710	47.233	0.00	0.00																																																																																																																																																																																																																																																																													
99.549	98.549	47.233	50.755	0.00	0.00																																																																																																																																																																																																																																																																													
98.549	98.099	50.755	52.340	0.00	0.00																																																																																																																																																																																																																																																																													
98.099	97.731	52.340	53.636	0.00	0.00																																																																																																																																																																																																																																																																													
97.731	96.477	53.636	58.052	0.00	0.00																																																																																																																																																																																																																																																																													
96.477	80.000	58.052	125.633	0.00	0.00																																																																																																																																																																																																																																																																													
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0.00	0.00	108.55	102.55																																																																																																																																																																																																																																																																															
Schicht	UK	k _{pgh}	k _{pch}	phi,k	delta	theta																																																																																																																																																																																																																																																																												
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																												
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																												
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																															
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102.55	102.50	0.00	-2.13																																																																																																																																																																																																																																																																															
102.50	101.55	-2.13	-42.51																																																																																																																																																																																																																																																																															
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100.55	99.55	-85.03	-127.54																																																																																																																																																																																																																																																																															
99.55	98.55	-127.54	-170.06																																																																																																																																																																																																																																																																															
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97.73	96.48	-204.83	-258.13																																																																																																																																																																																																																																																																															
96.48	80.00	-258.13	-958.43																																																																																																																																																																																																																																																																															
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																										
<div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.55</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.54</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.55</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-35.7</td><td>-32.3</td><td>-16.8</td><td></td></tr><tr><td>107.45</td><td>-88.5</td><td>-32.3</td><td>-50.6</td><td></td></tr><tr><td>106.49</td><td>-122.6</td><td>-68.8</td><td>-98.4</td><td></td></tr><tr><td>105.59</td><td>-154.2</td><td>-101.5</td><td>-176.5</td><td></td></tr><tr><td>105.55</td><td>-155.4</td><td>-102.6</td><td>-180.2</td><td></td></tr><tr><td>105.50</td><td>-157.0</td><td>-104.4</td><td>-185.4</td><td></td></tr><tr><td>104.50</td><td>-189.4</td><td>-150.0</td><td>-311.2</td><td></td></tr><tr><td>103.72</td><td>-215.6</td><td>-197.3</td><td>-446.0</td><td>-356.4</td></tr><tr><td>103.72</td><td>-215.6</td><td>159.1</td><td>-446.0</td><td></td></tr><tr><td>103.64</td><td>-218.3</td><td>153.6</td><td>-433.3</td><td></td></tr><tr><td>103.50</td><td>-223.2</td><td>143.4</td><td>-412.7</td><td></td></tr><tr><td>102.55</td><td>-257.6</td><td>64.0</td><td>-313.0</td><td></td></tr><tr><td>102.50</td><td>-259.5</td><td>61.9</td><td>-309.9</td><td></td></tr><tr><td>101.55</td><td>-265.5</td><td>56.4</td><td>-258.9</td><td></td></tr><tr><td>100.55</td><td>-251.2</td><td>98.7</td><td>-180.3</td><td></td></tr><tr><td>99.55</td><td>-254.0</td><td>93.7</td><td>-79.7</td><td></td></tr><tr><td>98.55</td><td>-271.5</td><td>39.4</td><td>-9.2</td><td></td></tr><tr><td>98.10</td><td>-276.2</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> <div>Schnittgrößen ([g+q+w],k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.54</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.55</td><td>-27.4</td><td>-23.1</td><td>-10.9</td><td></td></tr><tr><td>107.45</td><td>-30.2</td><td>-25.9</td><td>-13.4</td><td></td></tr><tr><td>107.45</td><td>-74.2</td><td>-25.9</td><td>-41.6</td><td></td></tr><tr><td>106.49</td><td>-103.2</td><td>-55.7</td><td>-80.1</td><td></td></tr><tr><td>105.59</td><td>-130.3</td><td>-83.1</td><td>-143.6</td><td></td></tr><tr><td>105.55</td><td>-131.4</td><td>-84.1</td><td>-146.7</td><td></td></tr><tr><td>105.50</td><td>-132.8</td><td>-85.7</td><td>-150.9</td><td></td></tr><tr><td>104.50</td><td>-160.9</td><td>-125.1</td><td>-255.1</td><td></td></tr><tr><td>103.72</td><td>-183.7</td><td>-165.8</td><td>-368.0</td><td>-297.2</td></tr><tr><td>103.72</td><td>-183.7</td><td>131.4</td><td>-368.0</td><td></td></tr><tr><td>103.64</td><td>-186.1</td><td>126.7</td><td>-357.5</td><td></td></tr><tr><td>103.50</td><td>-190.3</td><td>117.9</td><td>-340.6</td><td></td></tr><tr><td>102.55</td><td>-220.2</td><td>50.1</td><td>-259.8</td><td></td></tr><tr><td>102.50</td><td>-221.9</td><td>48.3</td><td>-257.3</td><td></td></tr><tr><td>101.55</td><td>-226.9</td><td>44.1</td><td>-218.0</td><td></td></tr><tr><td>100.55</td><td>-213.8</td><td>82.7</td><td>-153.8</td><td></td></tr><tr><td>99.55</td><td>-215.7</td><td>80.1</td><td>-68.4</td><td></td></tr><tr><td>98.55</td><td>-230.8</td><td>34.0</td><td>-7.9</td><td></td></tr><tr><td>98.10</td><td>-235.1</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> 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105.55	-131.4	-84.1	-146.7																																																																																																																																																																																																																																																																																																																																									
105.50	-132.8	-85.7	-150.9																																																																																																																																																																																																																																																																																																																																									
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103.72	-183.7	-165.8	-368.0	-297.2																																																																																																																																																																																																																																																																																																																																								
103.72	-183.7	131.4	-368.0																																																																																																																																																																																																																																																																																																																																									
103.64	-186.1	126.7	-357.5																																																																																																																																																																																																																																																																																																																																									
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102.50	-221.9	48.3	-257.3																																																																																																																																																																																																																																																																																																																																									
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100.55	-213.8	82.7	-153.8																																																																																																																																																																																																																																																																																																																																									
99.55	-215.7	80.1	-68.4																																																																																																																																																																																																																																																																																																																																									
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105.50	-118.5	-46.6	-81.3																																																																																																																																																																																																																																																																																																																																									
104.50	-146.7	-86.0	-146.4																																																																																																																																																																																																																																																																																																																																									
103.72	-169.4	-126.7	-228.8	-218.1																																																																																																																																																																																																																																																																																																																																								
103.72	-169.4	91.4	-228.8																																																																																																																																																																																																																																																																																																																																									
103.64	-171.8	86.6	-221.6																																																																																																																																																																																																																																																																																																																																									
103.50	-176.1	77.9	-210.2																																																																																																																																																																																																																																																																																																																																									
102.55	-206.0	10.1	-167.4																																																																																																																																																																																																																																																																																																																																									
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Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										

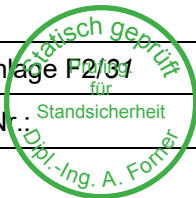


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.50 -207.6 8.2 -167.0</div><div>101.55 -211.3 7.5 -164.7</div><div>100.55 -192.8 59.7 -130.7</div><div>99.55 -189.8 69.5 -61.8</div><div>98.55 -203.4 31.7 -7.5</div><div>98.10 -208.5 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>108.55 0.0 0.0 0.0</div><div>108.55 0.0 0.0 0.0</div><div>108.54 0.0 -0.1 0.0</div><div>107.55 -5.7 -15.6 -7.8</div><div>107.45 -6.2 -17.1 -9.4</div><div>106.49 -11.7 -32.0 -32.9</div><div>105.59 -14.2 -39.1 -66.2</div><div>105.55 -14.2 -39.1 -67.7</div><div>105.50 -14.2 -39.1 -69.6</div><div>104.50 -14.2 -39.1 -108.7</div><div>103.72 -14.2 -39.1 -139.2 -87.3</div><div>103.72 -14.2 40.1 -139.2</div><div>103.64 -14.2 40.1 -136.0</div><div>103.50 -14.2 40.1 -130.4</div><div>102.55 -14.2 40.1 -92.4</div><div>102.50 -14.2 40.1 -90.3</div><div>101.55 -15.6 36.6 -53.3</div><div>100.55 -21.0 23.0 -23.1</div><div>99.55 -25.9 10.6 -6.6</div><div>98.55 -27.5 2.3 -0.5</div><div>98.10 -26.6 0.0 0.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe w ks sig,Bh,k eph,k</div><div>[m] [mm] [kN/m³] [kN/m²] [kN/m²]</div></div><div><div>108.55 -21.1 - - -</div><div>108.55 -21.1 - - -</div><div>108.55 -21.1 - - -</div><div>108.54 -21.1 - - -</div><div>108.54 -21.1 - - -</div><div>108.49 -21.0 - - -</div><div>107.60 -18.0 - - -</div><div>107.55 -17.8 - - -</div><div>107.55 -17.8 - - -</div><div>107.50 -17.6 - - -</div><div>107.50 -17.6 - - -</div><div>107.45 -17.4 - - -</div><div>107.45 -17.4 - - -</div><div>107.40 -17.3 - - -</div><div>106.55 -14.5 - - -</div><div>106.49 -14.3 - - -</div><div>106.49 -14.3 - - -</div><div>106.44 -14.1 - - -</div><div>105.64 -11.6 - - -</div><div>105.59 -11.4 - - -</div><div>105.59 -11.4 - - -</div><div>105.55 -11.3 - - -</div><div>105.55 -11.3 - - -</div><div>105.50 -11.1 - - -</div><div>105.50 -11.1 - - -</div><div>105.45 -11.0 - - -</div><div>104.55 -8.4 - - -</div><div>104.50 -8.2 - - -</div><div>104.50 -8.2 - - -</div><div>104.45 -8.1 - - -</div><div>103.77 -6.4 - - -</div><div>103.72 -6.3 - - -</div><div>103.72 -6.3 - - -</div><div>103.68 -6.2 - - -</div><div>103.68 -6.2 - - -</div></div></div></div></div></div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/30
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

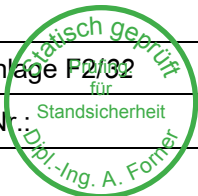


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																											
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																											
<table><tr><td>103.64</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.64</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.59</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-3.8</td><td>0.90</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-3.8</td><td>0.90</td><td>3.38</td><td>6.91</td></tr><tr><td>101.60</td><td>-2.5</td><td>26.21</td><td>65.63</td><td>65.63</td></tr><tr><td>101.55</td><td>-2.4</td><td>26.21</td><td>63.92</td><td>69.09</td></tr><tr><td>101.55</td><td>-2.4</td><td>28.33</td><td>69.09</td><td>69.09</td></tr><tr><td>101.50</td><td>-2.4</td><td>28.33</td><td>67.26</td><td>72.54</td></tr><tr><td>100.60</td><td>-1.4</td><td>50.00</td><td>67.90</td><td>134.72</td></tr><tr><td>100.55</td><td>-1.3</td><td>50.00</td><td>65.44</td><td>138.17</td></tr><tr><td>100.55</td><td>-1.3</td><td>50.00</td><td>65.44</td><td>138.17</td></tr><tr><td>100.50</td><td>-1.3</td><td>50.00</td><td>63.01</td><td>141.63</td></tr><tr><td>99.60</td><td>-0.5</td><td>50.00</td><td>23.85</td><td>203.80</td></tr><tr><td>99.55</td><td>-0.4</td><td>50.00</td><td>21.87</td><td>207.26</td></tr><tr><td>99.55</td><td>-0.4</td><td>50.00</td><td>21.87</td><td>207.26</td></tr><tr><td>99.50</td><td>-0.4</td><td>50.00</td><td>19.91</td><td>210.71</td></tr><tr><td>98.60</td><td>0.3</td><td>50.00</td><td>-13.87</td><td>272.89</td></tr><tr><td>98.55</td><td>0.3</td><td>50.00</td><td>-15.70</td><td>276.34</td></tr><tr><td>98.55</td><td>0.3</td><td>50.00</td><td>-15.70</td><td>276.34</td></tr><tr><td>98.50</td><td>0.4</td><td>50.00</td><td>-17.53</td><td>279.80</td></tr><tr><td>98.15</td><td>0.6</td><td>50.00</td><td>-30.29</td><td>303.98</td></tr><tr><td>98.10</td><td>0.6</td><td>50.00</td><td>-32.11</td><td>307.43</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04174819 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 10.45 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G',k + Eav,k >= Bv,k G,k = 197.74 kN/m G',k = 0.00 kN/m Pv,k = 44.00 kN/m Eav,k = 70.70 kN/m (Eah,k = 401.68 kN/m) Bv,k = 64.43 Summe V,k = 248.01 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 244.75 / 1.40 = 174.82 kN/m R,d = Rb,d + R,s1,d = 1039.87 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 237.29 - 0.00 + 82.50 + 52.80 = 372.59 kN/m ==> µ = V,d / R,d = 372.59 / 1039.87 = 0.36</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.64	-6.1	-	-	-	103.64	-6.1	-	-	-	103.59	-6.0	-	-	-	103.55	-5.9	-	-	-	103.50	-5.8	-	-	-	103.50	-5.8	-	-	-	103.45	-5.7	-	-	-	102.60	-4.0	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	0.00	102.50	-3.8	0.00	0.00	3.45	102.50	-3.8	0.90	3.45	3.45	102.45	-3.8	0.90	3.38	6.91	101.60	-2.5	26.21	65.63	65.63	101.55	-2.4	26.21	63.92	69.09	101.55	-2.4	28.33	69.09	69.09	101.50	-2.4	28.33	67.26	72.54	100.60	-1.4	50.00	67.90	134.72	100.55	-1.3	50.00	65.44	138.17	100.55	-1.3	50.00	65.44	138.17	100.50	-1.3	50.00	63.01	141.63	99.60	-0.5	50.00	23.85	203.80	99.55	-0.4	50.00	21.87	207.26	99.55	-0.4	50.00	21.87	207.26	99.50	-0.4	50.00	19.91	210.71	98.60	0.3	50.00	-13.87	272.89	98.55	0.3	50.00	-15.70	276.34	98.55	0.3	50.00	-15.70	276.34	98.50	0.4	50.00	-17.53	279.80	98.15	0.6	50.00	-30.29	303.98	98.10	0.6	50.00	-32.11	307.43
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																											

statisch geprüft
für
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 15_BS 6_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.55 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Blocklasten Aktiver Erddruck für Blocklasten verwendet Nr. sig(v) sig(h) x(links) x(rechts) Tiefe [-] [kN/m²] [kN/m²] [m] [m] [mNHN] 1 37.80 0.00 6.00 6.80 106.35 Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ [-] [mNHN] [mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²] 1 103.64 97.73 96.48 4.15 0.73 0.00 2 Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.55 108.55 108.54 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt:	Anlage F2 Schnitt 6R	Seite Anlage F2/32
Kapitel:	6 LF 4 (BS-P, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):		
Auftraggeber: Stadtverwaltung Leipzig				
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024		
<div>Kraftränder</div> <div>Momente (im Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach rechts positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div><div><div>Nr.</div><div>Tiefe</div><div>M,g,k</div><div>M,q,k</div><div>H,g,k</div><div>H,q,k</div><div>V,g,k</div><div>V,q,k</div></div><div><div>[-]</div><div>[mNHN]</div><div>[kN·m/m]</div><div>[kN·m/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div></div><div><div>1</div><div>107.45</div><div>-28.20</div><div>0.00</div><div>0.00</div><div>0.00</div><div>44.00</div><div>0.00</div></div></div> <div>Blocklasten nicht umgelagert</div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 10.45 m</div> <div>Bettungsmodule</div> <div><div><div>von</div><div>bis</div><div>ks(oben)</div><div>ks(unten)</div></div><div><div>[mNHN]</div><div>[mNHN]</div><div>[MN/m³]</div><div>[MN/m³]</div></div><div><div>102.55</div><div>80.00</div><div>50.000</div><div>50.000</div></div></div> <div>Ausnutzungsgrad $\mu_e = 266.854 / 311.598 = 0.856$</div> <div>Bettungslager $B_{h,d} = 266.854 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 311.598 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{,d}'$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>Nw,k kann Anteil aus Einzelkräften beinhalten.</div> <div><div><div>Nr.</div><div>y</div><div>Neigung</div><div>Länge</div><div>N,d</div><div>N(g+q+w),k</div><div>N(g+w),k</div><div>Nw,k</div><div>EA</div><div>EI</div><div>N,d'</div></div><div><div>[-]</div><div>[mNHN]</div><div>[°]</div><div>[m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m²/m]</div><div>[kN/m]</div></div><div><div>1</div><div>103.72</div><div>0.00</div><div>8.30</div><div>-242.08</div><div>-187.46</div><div>-187.46</div><div>-49.36</div><div>3.900E+7</div><div>2.100E+7</div><div>-239.01</div><div>Steife</div></div></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><div><div>x</div><div>y</div><div>wx,d</div><div>wy,d</div><div>N,d</div><div>Q,d</div><div>M,d</div></div><div><div>[m]</div><div>[m]</div><div>[mm]</div><div>[mm]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>-8.30</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-7.47</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-7.47</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-6.64</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-5.81</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-4.98</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-4.15</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-3.32</div><div>103.72</div><div>-7.9</div><div>0.0</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-2.49</div><div>103.72</div><div>-7.9</div><div>0.1</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-1.66</div><div>103.72</div><div>-7.9</div><div>0.1</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>-0.83</div><div>103.72</div><div>-8.0</div><div>0.1</div><div>-243.13</div><div>0.00</div><div>0.00</div></div><div><div>0.00</div><div>103.72</div><div>-8.0</div><div>0.1</div><div>-243.13</div><div>0.00</div><div>0.00</div></div></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><div><div>[-]</div><div>[m]</div><div>[m]</div></div><div><div>1</div><div>103.72</div><div>-0.0062</div></div></div> <div>Bodenkennwerte</div> <div><div><div>Schicht</div><div>UK</div><div>gam,k</div><div>gam',k</div><div>phi,k</div><div>c(pas),k</div><div>c(akt),k</div><div>d(p)/phi</div><div>d(a)/phi</div><div>qc</div><div>cu,k</div></div><div><div>[-]</div><div>[mNHN]</div><div>[kN/m³]</div><div>[kN/m³]</div><div>[°]</div><div>[kN/m²]</div><div>[kN/m²]</div><div>[-]</div><div>[-]</div><div>[MN/m²]</div><div>[kN/m²]</div></div><div><div>1</div><div>105.55</div><div>19.00</div><div>10.00</div><div>30.00</div><div>0.00</div><div>0.00</div><div>-0.667</div><div>0.667</div><div>0.00</div><div>0.00</div></div><div><div>2</div><div>102.55</div><div>17.00</div><div>8.50</div><div>22.50</div><div>3.00</div><div>3.00</div><div>-0.667</div><div>0.667</div><div>0.00</div><div>40.00</div></div><div><div>3</div><div>80.00</div><div>21.00</div><div>11.50</div><div>32.50</div><div>0.00</div><div>0.00</div><div>-0.667</div><div>0.667</div><div>7.50</div><div>0.00</div></div></div>			<div>Schnitt: Anlage F2 Schnitt 6R</div> <div>Kapitel: 6 LF 4 (BS-P, mit Lasten)</div> <div>Vorgang: Genehmigungstatik</div>	<div>Seite Anlage F2/33</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																									
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.55</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>108.550</td><td>108.544</td><td>0.000</td><td>1.992</td><td>0.00</td><td>0.00</td></tr><tr><td>108.544</td><td>107.550</td><td>1.992</td><td>9.352</td><td>0.00</td><td>0.00</td></tr><tr><td>107.550</td><td>107.450</td><td>9.352</td><td>10.093</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>106.500</td><td>10.093</td><td>17.126</td><td>0.00</td><td>0.00</td></tr><tr><td>106.500</td><td>105.550</td><td>17.126</td><td>24.160</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>29.373</td><td>29.798</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.500</td><td>29.798</td><td>34.053</td><td>0.00</td><td>10.00</td></tr><tr><td>104.500</td><td>103.720</td><td>34.053</td><td>37.372</td><td>10.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.639</td><td>37.372</td><td>37.718</td><td>17.80</td><td>18.61</td></tr><tr><td>103.639</td><td>103.500</td><td>37.718</td><td>42.382</td><td>18.61</td><td>20.00</td></tr><tr><td>103.500</td><td>102.550</td><td>42.382</td><td>45.873</td><td>20.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.500</td><td>34.881</td><td>35.057</td><td>0.00</td><td>0.00</td></tr><tr><td>102.500</td><td>102.100</td><td>35.057</td><td>36.467</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.550</td><td>36.467</td><td>38.404</td><td>0.00</td><td>0.00</td></tr><tr><td>101.550</td><td>100.549</td><td>38.404</td><td>41.927</td><td>0.00</td><td>0.00</td></tr><tr><td>100.549</td><td>99.549</td><td>41.927</td><td>45.449</td><td>0.00</td><td>0.00</td></tr><tr><td>99.549</td><td>98.549</td><td>45.449</td><td>48.972</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>98.099</td><td>48.972</td><td>50.557</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>97.731</td><td>50.557</td><td>51.853</td><td>0.00</td><td>0.00</td></tr><tr><td>97.731</td><td>96.477</td><td>51.853</td><td>56.269</td><td>0.00</td><td>0.00</td></tr><tr><td>96.477</td><td>80.000</td><td>56.269</td><td>123.850</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.55</td><td>102.55</td></tr></table></div> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table></div> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.40</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.50</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.50</td><td>-11.33</td><td>-13.30</td></tr><tr><td>102.50</td><td>102.10</td><td>-13.30</td><td>-29.09</td></tr><tr><td>102.10</td><td>101.55</td><td>-29.09</td><td>-50.80</td></tr><tr><td>101.55</td><td>100.55</td><td>-50.80</td><td>-90.28</td></tr><tr><td>100.55</td><td>99.55</td><td>-90.28</td><td>-129.76</td></tr><tr><td>99.55</td><td>98.55</td><td>-129.76</td><td>-169.23</td></tr><tr><td>98.55</td><td>98.10</td><td>-169.23</td><td>-187.00</td></tr><tr><td>98.10</td><td>97.73</td><td>-187.00</td><td>-201.52</td></tr><tr><td>97.73</td><td>96.48</td><td>-201.52</td><td>-251.01</td></tr><tr><td>96.48</td><td>80.00</td><td>-251.01</td><td>-901.29</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.55	0.390	0.461	30.000	10.00	57.80	0.179	2	102.55	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	108.550	108.544	0.000	1.992	0.00	0.00	108.544	107.550	1.992	9.352	0.00	0.00	107.550	107.450	9.352	10.093	0.00	0.00	107.450	106.500	10.093	17.126	0.00	0.00	106.500	105.550	17.126	24.160	0.00	0.00	105.550	105.500	29.373	29.798	0.00	0.00	105.500	104.500	29.798	34.053	0.00	10.00	104.500	103.720	34.053	37.372	10.00	17.80	103.720	103.639	37.372	37.718	17.80	18.61	103.639	103.500	37.718	42.382	18.61	20.00	103.500	102.550	42.382	45.873	20.00	29.50	102.550	102.500	34.881	35.057	0.00	0.00	102.500	102.100	35.057	36.467	0.00	0.00	102.100	101.550	36.467	38.404	0.00	0.00	101.550	100.549	38.404	41.927	0.00	0.00	100.549	99.549	41.927	45.449	0.00	0.00	99.549	98.549	45.449	48.972	0.00	0.00	98.549	98.099	48.972	50.557	0.00	0.00	98.099	97.731	50.557	51.853	0.00	0.00	97.731	96.477	51.853	56.269	0.00	0.00	96.477	80.000	56.269	123.850	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.55	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.50	102.55	0.00	0.00	102.55	102.50	-11.33	-13.30	102.50	102.10	-13.30	-29.09	102.10	101.55	-29.09	-50.80	101.55	100.55	-50.80	-90.28	100.55	99.55	-90.28	-129.76	99.55	98.55	-129.76	-169.23	98.55	98.10	-169.23	-187.00	98.10	97.73	-187.00	-201.52	97.73	96.48	-201.52	-251.01	96.48	80.00	-251.01	-901.29	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Schnitt: Anlage F2 Schnitt 6R
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																				
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3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																				
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108.550	108.544	0.000	1.992	0.00	0.00																																																																																																																																																																																																																																																																						
108.544	107.550	1.992	9.352	0.00	0.00																																																																																																																																																																																																																																																																						
107.550	107.450	9.352	10.093	0.00	0.00																																																																																																																																																																																																																																																																						
107.450	106.500	10.093	17.126	0.00	0.00																																																																																																																																																																																																																																																																						
106.500	105.550	17.126	24.160	0.00	0.00																																																																																																																																																																																																																																																																						
105.550	105.500	29.373	29.798	0.00	0.00																																																																																																																																																																																																																																																																						
105.500	104.500	29.798	34.053	0.00	10.00																																																																																																																																																																																																																																																																						
104.500	103.720	34.053	37.372	10.00	17.80																																																																																																																																																																																																																																																																						
103.720	103.639	37.372	37.718	17.80	18.61																																																																																																																																																																																																																																																																						
103.639	103.500	37.718	42.382	18.61	20.00																																																																																																																																																																																																																																																																						
103.500	102.550	42.382	45.873	20.00	29.50																																																																																																																																																																																																																																																																						
102.550	102.500	34.881	35.057	0.00	0.00																																																																																																																																																																																																																																																																						
102.500	102.100	35.057	36.467	0.00	0.00																																																																																																																																																																																																																																																																						
102.100	101.550	36.467	38.404	0.00	0.00																																																																																																																																																																																																																																																																						
101.550	100.549	38.404	41.927	0.00	0.00																																																																																																																																																																																																																																																																						
100.549	99.549	41.927	45.449	0.00	0.00																																																																																																																																																																																																																																																																						
99.549	98.549	45.449	48.972	0.00	0.00																																																																																																																																																																																																																																																																						
98.549	98.099	48.972	50.557	0.00	0.00																																																																																																																																																																																																																																																																						
98.099	97.731	50.557	51.853	0.00	0.00																																																																																																																																																																																																																																																																						
97.731	96.477	51.853	56.269	0.00	0.00																																																																																																																																																																																																																																																																						
96.477	80.000	56.269	123.850	0.00	0.00																																																																																																																																																																																																																																																																						
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0.00	0.00	108.55	102.55																																																																																																																																																																																																																																																																								
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[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																					
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																					
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102.50	102.10	-13.30	-29.09																																																																																																																																																																																																																																																																								
102.10	101.55	-29.09	-50.80																																																																																																																																																																																																																																																																								
101.55	100.55	-50.80	-90.28																																																																																																																																																																																																																																																																								
100.55	99.55	-90.28	-129.76																																																																																																																																																																																																																																																																								
99.55	98.55	-129.76	-169.23																																																																																																																																																																																																																																																																								
98.55	98.10	-169.23	-187.00																																																																																																																																																																																																																																																																								
98.10	97.73	-187.00	-201.52																																																																																																																																																																																																																																																																								
97.73	96.48	-201.52	-251.01																																																																																																																																																																																																																																																																								
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																										
<div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.54</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.55</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-29.6</td><td>-8.4</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-89.0</td><td>-8.4</td><td>-41.7</td><td></td></tr><tr><td>106.50</td><td>-117.9</td><td>-24.9</td><td>-56.8</td><td></td></tr><tr><td>105.55</td><td>-150.0</td><td>-49.9</td><td>-91.7</td><td></td></tr><tr><td>105.50</td><td>-151.7</td><td>-51.8</td><td>-94.2</td><td></td></tr><tr><td>104.50</td><td>-186.7</td><td>-99.3</td><td>-168.2</td><td></td></tr><tr><td>103.72</td><td>-215.1</td><td>-149.4</td><td>-264.4</td><td>-243.1</td></tr><tr><td>103.72</td><td>-215.1</td><td>93.7</td><td>-264.4</td><td></td></tr><tr><td>103.64</td><td>-218.1</td><td>87.8</td><td>-257.1</td><td></td></tr><tr><td>103.50</td><td>-223.4</td><td>76.8</td><td>-245.6</td><td></td></tr><tr><td>102.55</td><td>-260.7</td><td>-8.6</td><td>-211.9</td><td></td></tr><tr><td>102.50</td><td>-262.1</td><td>-10.9</td><td>-212.4</td><td></td></tr><tr><td>102.10</td><td>-264.7</td><td>-11.4</td><td>-217.3</td><td></td></tr><tr><td>101.55</td><td>-259.1</td><td>9.5</td><td>-218.9</td><td></td></tr><tr><td>100.55</td><td>-234.5</td><td>80.3</td><td>-171.8</td><td></td></tr><tr><td>99.55</td><td>-232.0</td><td>91.1</td><td>-80.7</td><td></td></tr><tr><td>98.55</td><td>-250.0</td><td>41.1</td><td>-9.7</td><td></td></tr><tr><td>98.10</td><td>-255.8</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> <div>Schnittgrößen ([g+q+w],k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.54</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.55</td><td>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr><tr><td>107.45</td><td>-23.2</td><td>-6.6</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-67.2</td><td>-6.6</td><td>-31.0</td><td></td></tr><tr><td>106.50</td><td>-89.9</td><td>-19.5</td><td>-42.9</td><td></td></tr><tr><td>105.55</td><td>-115.0</td><td>-39.2</td><td>-70.3</td><td></td></tr><tr><td>105.50</td><td>-116.4</td><td>-40.6</td><td>-72.3</td><td></td></tr><tr><td>104.50</td><td>-143.9</td><td>-77.6</td><td>-130.2</td><td></td></tr><tr><td>103.72</td><td>-166.1</td><td>-116.3</td><td>-205.2</td><td>-187.5</td></tr><tr><td>103.72</td><td>-166.1</td><td>71.2</td><td>-205.2</td><td></td></tr><tr><td>103.64</td><td>-168.4</td><td>66.7</td><td>-199.6</td><td></td></tr><tr><td>103.50</td><td>-172.6</td><td>58.2</td><td>-190.9</td><td></td></tr><tr><td>102.55</td><td>-201.8</td><td>-7.2</td><td>-165.7</td><td></td></tr><tr><td>102.50</td><td>-203.2</td><td>-8.9</td><td>-166.1</td><td></td></tr><tr><td>102.10</td><td>-205.2</td><td>-9.2</td><td>-170.1</td><td></td></tr><tr><td>101.55</td><td>-200.9</td><td>7.2</td><td>-171.5</td><td></td></tr><tr><td>100.55</td><td>-181.7</td><td>62.9</td><td>-134.7</td><td></td></tr><tr><td>99.55</td><td>-179.9</td><td>71.5</td><td>-63.3</td><td></td></tr><tr><td>98.55</td><td>-194.0</td><td>32.3</td><td>-7.6</td><td></td></tr><tr><td>98.10</td><td>-198.6</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> <div>Schnittgrößen (g+w,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.54</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.55</td><td>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr><tr><td>107.45</td><td>-23.2</td><td>-6.6</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-67.2</td><td>-6.6</td><td>-31.0</td><td></td></tr><tr><td>106.50</td><td>-89.9</td><td>-19.5</td><td>-42.9</td><td></td></tr><tr><td>105.55</td><td>-115.0</td><td>-39.2</td><td>-70.3</td><td></td></tr><tr><td>105.50</td><td>-116.4</td><td>-40.6</td><td>-72.3</td><td></td></tr><tr><td>104.50</td><td>-143.9</td><td>-77.6</td><td>-130.2</td><td></td></tr><tr><td>103.72</td><td>-166.1</td><td>-116.3</td><td>-205.2</td><td>-187.5</td></tr><tr><td>103.72</td><td>-166.1</td><td>71.2</td><td>-205.2</td><td></td></tr><tr><td>103.64</td><td>-168.4</td><td>66.7</td><td>-199.6</td><td></td></tr><tr><td>103.50</td><td>-172.6</td><td>58.2</td><td>-190.9</td><td></td></tr><tr><td>102.55</td><td>-201.8</td><td>-7.2</td><td>-165.7</td><td></td></tr><tr><td>102.50</td><td>-203.2</td><td>-8.9</td><td>-166.1</td><td></td></tr><tr><td>102.10</td><td>-205.2</td><td>-9.2</td><td>-170.1</td><td></td></tr><tr><td>101.55</td><td>-200.9</td><td>7.2</td><td>-171.5</td><td></td></tr><tr><td>100.55</td><td>-181.7</td><td>62.9</td><td>-134.7</td><td></td></tr></tbody></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-26.7	-7.2	-2.8		107.45	-29.6	-8.4	-3.6		107.45	-89.0	-8.4	-41.7		106.50	-117.9	-24.9	-56.8		105.55	-150.0	-49.9	-91.7		105.50	-151.7	-51.8	-94.2		104.50	-186.7	-99.3	-168.2		103.72	-215.1	-149.4	-264.4	-243.1	103.72	-215.1	93.7	-264.4		103.64	-218.1	87.8	-257.1		103.50	-223.4	76.8	-245.6		102.55	-260.7	-8.6	-211.9		102.50	-262.1	-10.9	-212.4		102.10	-264.7	-11.4	-217.3		101.55	-259.1	9.5	-218.9		100.55	-234.5	80.3	-171.8		99.55	-232.0	91.1	-80.7		98.55	-250.0	41.1	-9.7		98.10	-255.8	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-21.0	-5.6	-2.2		107.45	-23.2	-6.6	-2.8		107.45	-67.2	-6.6	-31.0		106.50	-89.9	-19.5	-42.9		105.55	-115.0	-39.2	-70.3		105.50	-116.4	-40.6	-72.3		104.50	-143.9	-77.6	-130.2		103.72	-166.1	-116.3	-205.2	-187.5	103.72	-166.1	71.2	-205.2		103.64	-168.4	66.7	-199.6		103.50	-172.6	58.2	-190.9		102.55	-201.8	-7.2	-165.7		102.50	-203.2	-8.9	-166.1		102.10	-205.2	-9.2	-170.1		101.55	-200.9	7.2	-171.5		100.55	-181.7	62.9	-134.7		99.55	-179.9	71.5	-63.3		98.55	-194.0	32.3	-7.6		98.10	-198.6	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-21.0	-5.6	-2.2		107.45	-23.2	-6.6	-2.8		107.45	-67.2	-6.6	-31.0		106.50	-89.9	-19.5	-42.9		105.55	-115.0	-39.2	-70.3		105.50	-116.4	-40.6	-72.3		104.50	-143.9	-77.6	-130.2		103.72	-166.1	-116.3	-205.2	-187.5	103.72	-166.1	71.2	-205.2		103.64	-168.4	66.7	-199.6		103.50	-172.6	58.2	-190.9		102.55	-201.8	-7.2	-165.7		102.50	-203.2	-8.9	-166.1		102.10	-205.2	-9.2	-170.1		101.55	-200.9	7.2	-171.5		100.55	-181.7	62.9	-134.7	
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101.55	-259.1	9.5	-218.9																																																																																																																																																																																																																																																																																																																																									
100.55	-234.5	80.3	-171.8																																																																																																																																																																																																																																																																																																																																									
99.55	-232.0	91.1	-80.7																																																																																																																																																																																																																																																																																																																																									
98.55	-250.0	41.1	-9.7																																																																																																																																																																																																																																																																																																																																									
98.10	-255.8	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																																								
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																																								
108.55	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
108.54	-0.1	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
107.55	-21.0	-5.6	-2.2																																																																																																																																																																																																																																																																																																																																									
107.45	-23.2	-6.6	-2.8																																																																																																																																																																																																																																																																																																																																									
107.45	-67.2	-6.6	-31.0																																																																																																																																																																																																																																																																																																																																									
106.50	-89.9	-19.5	-42.9																																																																																																																																																																																																																																																																																																																																									
105.55	-115.0	-39.2	-70.3																																																																																																																																																																																																																																																																																																																																									
105.50	-116.4	-40.6	-72.3																																																																																																																																																																																																																																																																																																																																									
104.50	-143.9	-77.6	-130.2																																																																																																																																																																																																																																																																																																																																									
103.72	-166.1	-116.3	-205.2	-187.5																																																																																																																																																																																																																																																																																																																																								
103.72	-166.1	71.2	-205.2																																																																																																																																																																																																																																																																																																																																									
103.64	-168.4	66.7	-199.6																																																																																																																																																																																																																																																																																																																																									
103.50	-172.6	58.2	-190.9																																																																																																																																																																																																																																																																																																																																									
102.55	-201.8	-7.2	-165.7																																																																																																																																																																																																																																																																																																																																									
102.50	-203.2	-8.9	-166.1																																																																																																																																																																																																																																																																																																																																									
102.10	-205.2	-9.2	-170.1																																																																																																																																																																																																																																																																																																																																									
101.55	-200.9	7.2	-171.5																																																																																																																																																																																																																																																																																																																																									
100.55	-181.7	62.9	-134.7																																																																																																																																																																																																																																																																																																																																									
99.55	-179.9	71.5	-63.3																																																																																																																																																																																																																																																																																																																																									
98.55	-194.0	32.3	-7.6																																																																																																																																																																																																																																																																																																																																									
98.10	-198.6	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																																								
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																																								
108.55	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
108.54	-0.1	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
107.55	-21.0	-5.6	-2.2																																																																																																																																																																																																																																																																																																																																									
107.45	-23.2	-6.6	-2.8																																																																																																																																																																																																																																																																																																																																									
107.45	-67.2	-6.6	-31.0																																																																																																																																																																																																																																																																																																																																									
106.50	-89.9	-19.5	-42.9																																																																																																																																																																																																																																																																																																																																									
105.55	-115.0	-39.2	-70.3																																																																																																																																																																																																																																																																																																																																									
105.50	-116.4	-40.6	-72.3																																																																																																																																																																																																																																																																																																																																									
104.50	-143.9	-77.6	-130.2																																																																																																																																																																																																																																																																																																																																									
103.72	-166.1	-116.3	-205.2	-187.5																																																																																																																																																																																																																																																																																																																																								
103.72	-166.1	71.2	-205.2																																																																																																																																																																																																																																																																																																																																									
103.64	-168.4	66.7	-199.6																																																																																																																																																																																																																																																																																																																																									
103.50	-172.6	58.2	-190.9																																																																																																																																																																																																																																																																																																																																									
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102.10	-205.2	-9.2	-170.1																																																																																																																																																																																																																																																																																																																																									
101.55	-200.9	7.2	-171.5																																																																																																																																																																																																																																																																																																																																									
100.55	-181.7	62.9	-134.7																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/35																																																																																																																																																																																																																																																																																																																																										
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.55 -179.9 71.5 -63.3</div><div>98.55 -194.0 32.3 -7.6</div><div>98.10 -198.6 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div>108.55 0.0 0.0 0.0</div><div>108.54 0.0 0.0 0.0</div><div>107.55 0.0 0.0 0.0</div><div>107.45 0.0 0.0 0.0</div><div>106.50 0.0 0.0 0.0</div><div>105.55 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>104.50 0.0 0.0 0.0</div><div>103.72 0.0 0.0 0.0 -8.3</div><div>103.64 0.0 0.0 0.0</div><div>103.50 0.0 0.0 0.0</div><div>102.55 0.0 0.0 0.0</div><div>102.50 0.0 0.0 0.0</div><div>102.10 0.0 0.0 0.0</div><div>101.55 0.0 0.0 0.0</div><div>100.55 0.0 0.0 0.0</div><div>99.55 0.0 0.0 0.0</div><div>98.55 0.0 0.0 0.0</div><div>98.10 0.0 0.0 0.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe w ks sig,Bh,k eph,k</div><div>[m] [mm] [kN/m³] [kN/m²] [kN/m²]</div><div>108.55 -17.6 - - -</div><div>108.55 -17.6 - - -</div><div>108.55 -17.6 - - -</div><div>108.54 -17.6 - - -</div><div>108.54 -17.6 - - -</div><div>108.49 -17.5 - - -</div><div>107.60 -15.2 - - -</div><div>107.55 -15.1 - - -</div><div>107.55 -15.1 - - -</div><div>107.50 -15.0 - - -</div><div>107.50 -15.0 - - -</div><div>107.45 -14.9 - - -</div><div>107.45 -14.9 - - -</div><div>107.40 -14.7 - - -</div><div>106.55 -12.6 - - -</div><div>106.50 -12.5 - - -</div><div>106.50 -12.5 - - -</div><div>106.45 -12.4 - - -</div><div>105.60 -10.4 - - -</div><div>105.55 -10.2 - - -</div><div>105.55 -10.2 - - -</div><div>105.50 -10.1 - - -</div><div>105.50 -10.1 - - -</div><div>105.45 -10.0 - - -</div><div>104.55 -8.0 - - -</div><div>104.50 -7.9 - - -</div><div>104.50 -7.9 - - -</div><div>104.45 -7.7 - - -</div><div>103.77 -6.3 - - -</div><div>103.72 -6.2 - - -</div><div>103.72 -6.2 - - -</div><div>103.68 -6.2 - - -</div><div>103.68 -6.2 - - -</div><div>103.64 -6.1 - - -</div><div>103.64 -6.1 - - -</div><div>103.59 -6.0 - - -</div><div>103.55 -5.9 - - -</div><div>103.50 -5.8 - - -</div><div>103.50 -5.8 - - -</div><div>103.45 -5.7 - - -</div></div></div></div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/36
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2106
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

102.60	-4.2	-	-	-
102.55	-4.2	0.00	0.00	0.00
102.55	-4.2	0.00	0.00	19.82
102.50	-4.1	0.00	0.00	23.27
102.50	-4.1	5.69	23.27	23.27
102.45	-4.0	5.69	22.82	26.73
102.15	-3.5	13.37	47.45	47.45
102.10	-3.5	13.37	46.46	50.91
102.10	-3.5	14.65	50.91	50.91
102.05	-3.4	14.65	49.83	54.36
101.60	-2.8	30.80	85.45	85.45
101.55	-2.7	30.80	83.42	88.90
101.55	-2.7	32.82	88.91	88.90
101.50	-2.6	32.82	86.76	92.36
100.60	-1.6	50.00	79.37	154.54
100.55	-1.5	50.00	76.74	157.99
100.55	-1.5	50.00	76.74	157.99
100.50	-1.5	50.00	74.15	161.44
99.60	-0.6	50.00	31.45	223.62
99.55	-0.6	50.00	29.26	227.08
99.55	-0.6	50.00	29.26	227.08
99.50	-0.5	50.00	27.07	230.53
98.60	0.2	50.00	-10.69	292.71
98.55	0.3	50.00	-12.74	296.16
98.55	0.3	50.00	-12.74	296.16
98.50	0.3	50.00	-14.79	299.62
98.15	0.6	50.00	-29.12	323.80
98.10	0.6	50.00	-31.17	327.25

Verdrehung (Theoretischer Fußpunkt) [°]
phi,[g+q],k: -0.04688867
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe tg = 4.45 m
Profillänge = 10.45 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$
 $G_{,k} = 197.74 \text{ kN/m}$
 $G'_{,k} = 0.00 \text{ kN/m}$
 $P_{v,k} = 44.00 \text{ kN/m}$
 $E_{av,k} = 59.93 \text{ kN/m}$ ($E_{ah,k} = 341.29 \text{ kN/m}$)
 $B_{v,k} = 83.16$
Summe $V_{,k} = 218.52 \text{ kN/m}$ (Druck)

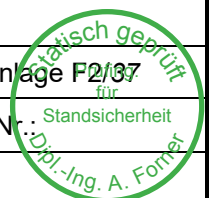
Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88 \text{ m}$
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$

Mantelreibung
von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung
102.55 98.10 55.00 s3: Flussskies, -sand
Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82 \text{ kN/m}$
 $R_{,d} = R_{b,d} + R_{s1,d} = 1039.87 \text{ kN/m}$

Einwirkungen
 $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 266.96 - 0.00 + 76.60 + 59.40 = 402.96 \text{ kN/m}$
 $\Rightarrow \mu = V_{,d} / R_{,d} = 402.96 / 1039.87 = 0.39$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/37
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 16_BS 6_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.55 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Blocklasten Aktiver Erddruck für Blocklasten verwendet Nr. sig(v) sig(h) x(links) x(rechts) Tiefe [-] [kN/m²] [kN/m²] [m] [m] [mNHN] 1 37.80 0.00 6.00 6.80 106.35 Nr. y(oben) y(mitte) y(unten) p(oben) p(mitte) p(unten) Typ [-] [mNHN] [mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²] 1 103.64 97.73 96.48 4.15 0.73 0.00 2 Typ = 2 ==> dreieckförmig verteilt (Maximum oben)</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.55 108.55 108.54 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/38
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):		
Auftraggeber: Stadtverwaltung Leipzig				
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024		
<div>Kraftränder</div> <div>Momente (im Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach rechts positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div><div><div>Nr.</div><div>Tiefe</div><div>M,g,k</div><div>M,q,k</div><div>H,g,k</div><div>H,q,k</div><div>V,g,k</div><div>V,q,k</div></div><div><div>[-]</div><div>[mNHN]</div><div>[kN·m/m]</div><div>[kN·m/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div></div><div><div>1</div><div>107.45</div><div>-28.20</div><div>0.00</div><div>0.00</div><div>0.00</div><div>44.00</div><div>0.00</div></div></div> <div>Blocklasten nicht umgelagert</div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 10.45 m</div> <div>Bettungsmodule</div> <div><div><div>von</div><div>bis</div><div>ks(oben)</div><div>ks(unten)</div></div><div><div>[mNHN]</div><div>[mNHN]</div><div>[MN/m³]</div><div>[MN/m³]</div></div><div><div>102.55</div><div>80.00</div><div>50.000</div><div>50.000</div></div></div> <div>Ausnutzungsgrad $\mu_e = 240.345 / 344.098 = 0.698$</div> <div>Bettungslager $B_{h,d} = 240.345 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 344.098 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{,d}' =$ Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div><div><div>Nr.</div><div>y</div><div>Neigung</div><div>Länge</div><div>N,d</div><div>N(g+q+w),k</div><div>N(g+w),k</div><div>Nw,k</div><div>EA</div><div>EI</div><div>N,d'</div></div><div><div>[-]</div><div>[mNHN]</div><div>[°]</div><div>[m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m²/m]</div><div>[kN/m]</div></div><div><div>1</div><div>103.72</div><div>0.00</div><div>8.30</div><div>-241.30</div><div>-208.05</div><div>-208.05</div><div>-49.37</div><div>3.900E+7</div><div>2.100E+7</div><div>-265.26 Steife</div></div></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{,d}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><div><div>x</div><div>y</div><div>wx,d</div><div>wy,d</div><div>N,d</div><div>Q,d</div><div>M,d</div></div><div><div>[m]</div><div>[m]</div><div>[mm]</div><div>[mm]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>-8.30</div><div>103.72</div><div>-7.1</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-7.47</div><div>103.72</div><div>-7.1</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-7.47</div><div>103.72</div><div>-7.1</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-6.64</div><div>103.72</div><div>-7.1</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-5.81</div><div>103.72</div><div>-7.1</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-4.98</div><div>103.72</div><div>-7.2</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-4.15</div><div>103.72</div><div>-7.2</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-3.32</div><div>103.72</div><div>-7.2</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-2.49</div><div>103.72</div><div>-7.2</div><div>0.0</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-1.66</div><div>103.72</div><div>-7.2</div><div>0.1</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>-0.83</div><div>103.72</div><div>-7.2</div><div>0.1</div><div>-242.00</div><div>0.00</div><div>0.00</div></div><div><div>0.00</div><div>103.72</div><div>-7.2</div><div>0.1</div><div>-242.00</div><div>0.00</div><div>0.00</div></div></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><div><div>[-]</div><div>[m]</div><div>[m]</div></div><div><div>1</div><div>103.72</div><div>-0.0062</div></div></div> <div>Bodenkennwerte</div> <div><div><div>Schicht</div><div>UK</div><div>gam,k</div><div>gam',k</div><div>phi,k</div><div>c(pas),k</div><div>c(akt),k</div><div>d(p)/phi</div><div>d(a)/phi</div><div>qc</div><div>cu,k</div></div><div><div>[-]</div><div>[mNHN]</div><div>[kN/m³]</div><div>[kN/m³]</div><div>[°]</div><div>[kN/m²]</div><div>[kN/m²]</div><div>[-]</div><div>[-]</div><div>[MN/m²]</div><div>[kN/m²]</div></div><div><div>1</div><div>105.55</div><div>19.00</div><div>10.00</div><div>30.00</div><div>0.00</div><div>0.00</div><div>-0.667</div><div>0.667</div><div>0.00</div><div>0.00</div></div><div><div>2</div><div>102.55</div><div>17.00</div><div>8.50</div><div>22.50</div><div>3.00</div><div>3.00</div><div>-0.667</div><div>0.667</div><div>0.00</div><div>40.00</div></div><div><div>3</div><div>80.00</div><div>21.00</div><div>11.50</div><div>32.50</div><div>0.00</div><div>0.00</div><div>-0.667</div><div>0.667</div><div>7.50</div><div>0.00</div></div></div>			<div>Schnitt: Anlage F2 Schnitt 6R</div> <div>Kapitel: 7 LF 5 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungstatik</div>	<div>Seite Anlage F2/39</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$

Faktor [-] = 0.50

Ersatzerddruck-Beiwert mit $\phi = 40^\circ$

Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .

Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.

bestimmt nach:

Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.55	0.390	0.461	30.000	10.00	57.80	0.179
2	102.55	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)

mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck	
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]
108.550	108.544	0.000	3.941	0.00	0.00
108.544	107.550	3.941	11.301	0.00	0.00
107.550	107.450	11.301	12.041	0.00	0.00
107.450	106.500	12.041	19.075	0.00	0.00
106.500	105.550	19.075	26.109	0.00	0.00
105.550	105.500	31.876	32.301	0.00	0.00
105.500	104.500	32.301	36.556	0.00	10.00
104.500	103.720	36.556	39.875	10.00	17.80
103.720	103.639	39.875	40.221	17.80	18.61
103.639	103.500	40.221	44.885	18.61	20.00
103.500	102.550	44.885	48.376	20.00	29.50
102.550	102.500	36.665	36.841	0.00	0.00
102.500	102.100	36.841	38.250	0.00	0.00
102.100	101.550	38.250	40.187	0.00	0.00
101.550	100.549	40.187	43.710	0.00	0.00
100.549	99.549	43.710	47.233	0.00	0.00
99.549	98.549	47.233	50.755	0.00	0.00
98.549	98.099	50.755	52.340	0.00	0.00
98.099	97.731	52.340	53.636	0.00	0.00
97.731	96.477	53.636	58.052	0.00	0.00
96.477	80.000	58.052	125.633	0.00	0.00

Hydrodynamische Wasserdruckspannung

(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)

w(oben)	w(unten)	z(oben)	z(unten)
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]
0.00	0.00	108.55	102.55

Passive Erddruckbeiwerte

bestimmt nach: DIN 4085:2017

Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]
3	80.00	6.006	6.054	32.500	-21.68	16.35

Passive Erddruckordinaten (Bemessungswerte)

Teilsicherheit Erdwiderstand = 1.30

Anpassungsfaktor Erdwiderstand = 0.80

von	bis	oben	unten
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]
103.50	102.55	0.00	0.00
102.55	102.50	-12.20	-14.32
102.50	102.10	-14.32	-31.33
102.10	101.55	-31.33	-54.71
101.55	100.55	-54.71	-97.22
100.55	99.55	-97.22	-139.74
99.55	98.55	-139.74	-182.25
98.55	98.10	-182.25	-201.38
98.10	97.73	-201.38	-217.03
97.73	96.48	-217.03	-270.32
96.48	80.00	-270.32	-970.62

Schnitt: Anlage F2 Schnitt 6R	Seite Anlage F2/40
Kapitel: 7 LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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<tr><td>103.72</td><td>-197.0</td><td>95.5</td><td>-265.0</td><td></td></tr> <tr><td>103.64</td><td>-199.8</td><td>90.0</td><td>-257.5</td><td></td></tr> <tr><td>103.50</td><td>-204.7</td><td>79.8</td><td>-245.7</td><td></td></tr> <tr><td>102.55</td><td>-239.1</td><td>0.4</td><td>-206.4</td><td></td></tr> <tr><td>102.50</td><td>-240.4</td><td>-1.7</td><td>-206.5</td><td></td></tr> <tr><td>102.10</td><td>-242.7</td><td>-2.9</td><td>-207.8</td><td></td></tr> <tr><td>101.55</td><td>-237.7</td><td>14.8</td><td>-205.5</td><td></td></tr> <tr><td>100.55</td><td>-215.8</td><td>76.0</td><td>-158.0</td><td></td></tr> <tr><td>99.55</td><td>-213.6</td><td>83.6</td><td>-73.5</td><td></td></tr> <tr><td>98.55</td><td>-229.8</td><td>37.3</td><td>-8.8</td><td></td></tr> <tr><td>98.10</td><td>-235.3</td><td>0.0</td><td>0.0</td><td></td></tr> </table> <p>Schnittgrößen ([g+q+w],k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr> <tr> 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<tr><td>108.54</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr> <tr><td>107.55</td><td>-21.7</td><td>-7.6</td><td>-3.2</td><td></td></tr> <tr><td>107.45</td><td>-24.0</td><td>-8.7</td><td>-4.0</td><td></td></tr> <tr><td>107.45</td><td>-68.0</td><td>-8.7</td><td>-32.2</td><td></td></tr> <tr><td>106.50</td><td>-91.4</td><td>-23.5</td><td>-47.0</td><td></td></tr> <tr><td>105.55</td><td>-117.2</td><td>-45.0</td><td>-79.0</td><td></td></tr> <tr><td>105.50</td><td>-118.5</td><td>-46.6</td><td>-81.3</td><td></td></tr> <tr><td>104.50</td><td>-146.7</td><td>-86.0</td><td>-146.4</td><td></td></tr> <tr><td>103.72</td><td>-169.4</td><td>-126.7</td><td>-228.8</td><td>-208.0</td></tr> <tr><td>103.72</td><td>-169.4</td><td>81.4</td><td>-228.8</td><td></td></tr> <tr><td>103.64</td><td>-171.8</td><td>76.6</td><td>-222.4</td><td></td></tr> <tr><td>103.50</td><td>-176.1</td><td>67.9</td><td>-212.4</td><td></td></tr> <tr><td>102.55</td><td>-206.0</td><td>0.0</td><td>-179.1</td><td></td></tr> <tr><td>102.50</td><td>-207.4</td><td>-1.8</td><td>-179.2</td><td></td></tr> <tr><td>102.10</td><td>-209.4</td><td>-2.8</td><td>-180.4</td><td></td></tr> <tr><td>101.55</td><td>-205.0</td><td>12.7</td><td>-178.6</td><td></td></tr> <tr><td>100.55</td><td>-186.1</td><td>66.0</td><td>-137.4</td><td></td></tr> </table>					Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-24.9	-8.7	-3.6		107.45	-27.6	-10.1	-4.6		107.45	-80.4	-10.1	-38.4		106.50	-107.3	-27.1	-55.4		105.55	-136.9	-51.7	-92.3		105.50	-138.5	-53.6	-94.9		104.50	-170.9	-99.2	-169.9		103.72	-197.0	-146.5	-265.0	-242.0	103.72	-197.0	95.5	-265.0		103.64	-199.8	90.0	-257.5		103.50	-204.7	79.8	-245.7		102.55	-239.1	0.4	-206.4		102.50	-240.4	-1.7	-206.5		102.10	-242.7	-2.9	-207.8		101.55	-237.7	14.8	-205.5		100.55	-215.8	76.0	-158.0		99.55	-213.6	83.6	-73.5		98.55	-229.8	37.3	-8.8		98.10	-235.3	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-21.7	-7.6	-3.2		107.45	-24.0	-8.7	-4.0		107.45	-68.0	-8.7	-32.2		106.50	-91.4	-23.5	-47.0		105.55	-117.2	-45.0	-79.0		105.50	-118.5	-46.6	-81.3		104.50	-146.7	-86.0	-146.4		103.72	-169.4	-126.7	-228.8	-208.0	103.72	-169.4	81.4	-228.8		103.64	-171.8	76.6	-222.4		103.50	-176.1	67.9	-212.4		102.55	-206.0	0.0	-179.1		102.50	-207.4	-1.8	-179.2		102.10	-209.4	-2.8	-180.4		101.55	-205.0	12.7	-178.6		100.55	-186.1	66.0	-137.4		99.55	-184.3	72.7	-63.9		98.55	-198.4	32.4	-7.6		98.10	-203.3	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.55	0.0	0.0	0.0		108.54	-0.1	0.0	0.0		107.55	-21.7	-7.6	-3.2		107.45	-24.0	-8.7	-4.0		107.45	-68.0	-8.7	-32.2		106.50	-91.4	-23.5	-47.0		105.55	-117.2	-45.0	-79.0		105.50	-118.5	-46.6	-81.3		104.50	-146.7	-86.0	-146.4		103.72	-169.4	-126.7	-228.8	-208.0	103.72	-169.4	81.4	-228.8		103.64	-171.8	76.6	-222.4		103.50	-176.1	67.9	-212.4		102.55	-206.0	0.0	-179.1		102.50	-207.4	-1.8	-179.2		102.10	-209.4	-2.8	-180.4		101.55	-205.0	12.7	-178.6		100.55	-186.1	66.0	-137.4	
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>99.55</div><div>-184.3</div><div>72.7</div><div>-63.9</div></div><div><div>98.55</div><div>-198.4</div><div>32.4</div><div>-7.6</div></div><div><div>98.10</div><div>-203.3</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>108.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.54</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-8.3</div></div><div><div>103.64</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div></div><div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div></div><div><div>108.55</div><div>-18.1</div><div>-</div><div>-</div><div>-</div></div><div><div>108.55</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>108.55</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>108.54</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>108.54</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>108.49</div><div>-17.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.60</div><div>-15.6</div><div>-</div><div>-</div><div>-</div></div><div><div>107.55</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.55</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-15.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-15.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-15.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-15.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-15.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.55</div><div>-12.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-12.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-12.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-12.6</div><div>-</div><div>-</div><div>-</div></div><div><div>105.60</div><div>-10.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-10.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-10.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-10.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-10.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>104.55</div><div>-8.0</div><div>-</div><div>-</div><div>-</div></div><div><div>104.50</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>104.50</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>104.45</div><div>-7.8</div><div>-</div><div>-</div><div>-</div></div><div><div>103.77</div><div>-6.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.68</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.68</div><div>-6.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.64</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.64</div><div>-6.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.59</div><div>-6.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.55</div><div>-5.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.50</div><div>-5.8</div><div>-</div><div>-</div><div>-</div></div><div><div>103.50</div><div>-5.8</div><div>-</div><div>-</div><div>-</div></div><div><div>103.45</div><div>-5.7</div><div>-</div><div>-</div><div>-</div></div></div></div>					
Schnitt:		Anlage F2 Schnitt 6R		Seite Anlage F2/42	
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

102.60	-4.2	-	-	-
102.55	-4.1	0.00	0.00	0.00
102.55	-4.1	0.00	0.00	19.82
102.50	-4.1	0.00	0.00	23.27
102.50	-4.1	5.73	23.27	23.27
102.45	-4.0	5.73	22.82	26.73
102.15	-3.5	13.47	47.45	47.45
102.10	-3.4	13.47	46.46	50.91
102.10	-3.4	14.77	50.91	50.91
102.05	-3.4	14.77	49.83	54.36
101.60	-2.7	31.08	85.45	85.45
101.55	-2.7	31.08	83.41	88.90
101.55	-2.7	33.13	88.91	88.90
101.50	-2.6	33.13	86.76	92.36
100.60	-1.6	50.00	78.73	154.54
100.55	-1.5	50.00	76.14	157.99
100.55	-1.5	50.00	76.14	157.99
100.50	-1.5	50.00	73.58	161.44
99.60	-0.6	50.00	31.69	223.62
99.55	-0.6	50.00	29.54	227.08
99.55	-0.6	50.00	29.54	227.08
99.50	-0.5	50.00	27.40	230.53
98.60	0.2	50.00	-9.50	292.71
98.55	0.2	50.00	-11.51	296.16
98.55	0.2	50.00	-11.51	296.16
98.50	0.3	50.00	-13.51	299.62
98.15	0.6	50.00	-27.51	323.80
98.10	0.6	50.00	-29.51	327.25

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.04579506$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 10.45 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$
 $G_{i,k} = 197.74$ kN/m
 $G'_{i,k} = 0.00$ kN/m
 $P_{v,k} = 44.00$ kN/m
 $E_{av,k} = 63.58$ kN/m ($E_{ah,k} = 362.58$ kN/m)
 $B_{v,k} = 83.05$
Summe $V_{i,k} = 222.27$ kN/m (Druck)

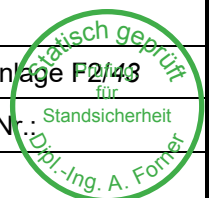
Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung
von bis $q_{s,k}$ [kN/m²] Bezeichnung
102.55 98.10 55.00 s3: Flussskies, -sand
Mantelfläche bis 98.10 m = 1.000 m²/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 244.75 / 1.40 = 174.82$ kN/m
 $R_{i,d} = R_{b,d} + R_{s1,d} = 1039.87$ kN/m

Einwirkungen
 $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 237.29 - 0.00 + 73.24 + 52.80 = 363.34$ kN/m
 $\Rightarrow \mu = V_{i,d} / R_{i,d} = 363.34 / 1039.87 = 0.35$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage F2 Schnitt 6R		Seite Anlage F2/43
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage G2 Schnitt 7R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 10_BS 7_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.50</td><td>1.00</td><td>0.29</td><td>0.28</td><td>0.55</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.45</td><td>10.000</td><td>10.000</td></tr><tr><td>105.45</td><td>102.52</td><td>5.000</td><td>5.000</td></tr><tr><td>102.52</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 374.417 / 1230.137 = 0.304 Bettungslager Bh,d = 374.417 kN/m Erdwiderstand Eph,d = 1230.137 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.50	1.00	0.29	0.28	0.55	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.45	10.000	10.000	105.45	102.52	5.000	5.000	102.52	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.50	1.50	1.00	0.29	0.28	0.55	0.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.45	10.000	10.000																																														
105.45	102.52	5.000	5.000																																														
102.52	80.00	50.000	50.000																																														
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/1																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 19. für Standsicherheit																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.45</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.52</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <p>Beziehung: (1 - Faktor) · kah + Faktor · k0</p> <p>Faktor [-] = 0.50</p> <p>Ersatzerddruck-Beiwert mit phi = 40 °</p> <p>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</p> <p>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</p> <p>bestimmt nach:</p> <p>(Erddruckbeiwerte für horizontales Gelände)</p> <p>Wandreibung angepasst.</p> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.45</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.335</td><td>13.268</td><td>15.656</td><td>0.00</td><td>0.00</td></tr><tr><td>106.335</td><td>106.000</td><td>15.656</td><td>18.140</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>18.140</td><td>21.842</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>21.842</td><td>22.036</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>26.645</td><td>28.559</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.405</td><td>28.559</td><td>31.092</td><td>5.00</td><td>5.00</td></tr><tr><td>104.405</td><td>103.413</td><td>31.092</td><td>35.313</td><td>5.00</td><td>5.00</td></tr><tr><td>103.413</td><td>102.520</td><td>35.313</td><td>39.112</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.420</td><td>29.052</td><td>29.464</td><td>5.00</td><td>5.00</td></tr><tr><td>102.420</td><td>101.716</td><td>29.464</td><td>32.349</td><td>5.00</td><td>5.00</td></tr><tr><td>101.716</td><td>101.415</td><td>32.349</td><td>33.585</td><td>5.00</td><td>5.00</td></tr><tr><td>101.415</td><td>100.410</td><td>33.585</td><td>37.707</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>37.707</td><td>41.828</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>41.828</td><td>45.949</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>45.949</td><td>47.186</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>47.186</td><td>121.419</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <p>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <p>bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.45</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <p>Teilsicherheit Erdwiderstand = 1.30</p> <p>Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.34</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.00</td><td>-26.73</td><td>-41.01</td></tr><tr><td>105.00</td><td>104.40</td><td>-41.01</td><td>-50.45</td></tr><tr><td>104.40</td><td>103.41</td><td>-50.45</td><td>-66.20</td></tr><tr><td>103.41</td><td>102.52</td><td>-66.20</td><td>-80.36</td></tr><tr><td>102.52</td><td>102.42</td><td>-144.80</td><td>-149.07</td></tr></table>						Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	0.390	0.461	30.000	10.00	57.80	0.179	2	102.52	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.335	13.268	15.656	0.00	0.00	106.335	106.000	15.656	18.140	0.00	0.00	106.000	105.500	18.140	21.842	0.00	0.00	105.500	105.450	21.842	22.036	0.00	0.50	105.450	105.000	26.645	28.559	0.50	5.00	105.000	104.405	28.559	31.092	5.00	5.00	104.405	103.413	31.092	35.313	5.00	5.00	103.413	102.520	35.313	39.112	5.00	5.00	102.520	102.420	29.052	29.464	5.00	5.00	102.420	101.716	29.464	32.349	5.00	5.00	101.716	101.415	32.349	33.585	5.00	5.00	101.415	100.410	33.585	37.707	5.00	5.00	100.410	99.405	37.707	41.828	5.00	5.00	99.405	98.400	41.828	45.949	5.00	5.00	98.400	98.099	45.949	47.186	5.00	5.00	98.099	80.000	47.186	121.419	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.45	5.005	5.388	30.000	-20.01	18.10	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.34	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.00	-26.73	-41.01	105.00	104.40	-41.01	-50.45	104.40	103.41	-50.45	-66.20	103.41	102.52	-66.20	-80.36	102.52	102.42	-144.80	-149.07	<div>Schnitt: Anlage G2 Schnitt 7R</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage G2/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																												
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.42101.72-149.07-178.97</div><div>101.72101.41-178.97-191.78</div><div>101.41100.41-191.78-234.49</div><div>100.4199.41-234.49-277.20</div><div>99.4198.40-277.20-319.90</div><div>98.4098.10-319.90-332.72</div><div>98.1080.00-332.72-1101.95</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-12.8-1.4-0.3</div><div>106.45-23.8-5.7-1.6</div><div>106.34-27.0-7.6-2.4</div><div>106.00-36.7-14.2-6.0</div><div>105.50-43.4-13.4-13.9</div><div>105.45-43.5-11.9-14.6</div><div>105.00-49.6-13.6-20.1</div><div>104.40-58.1-20.9-30.2</div><div>103.41-73.6-41.9-60.5</div><div>102.52-88.8-69.9-109.8</div><div>102.42-85.2-59.1-116.3</div><div>101.72-65.01.4-135.0</div><div>101.41-59.019.8-131.7</div><div>100.41-49.252.8-91.9</div><div>99.41-51.849.6-37.7</div><div>98.40-64.615.8-2.4</div><div>98.10-70.30.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.34-23.5-6.6-2.1</div><div>106.00-31.9-12.3-5.2</div><div>105.50-37.8-11.7-12.1</div><div>105.45-37.9-10.4-12.7</div><div>105.00-43.1-11.9-17.5</div><div>104.40-50.5-18.2-26.3</div><div>103.41-64.0-36.3-52.6</div><div>102.52-77.3-60.5-95.2</div><div>102.42-74.1-51.1-100.8</div><div>101.72-56.51.3-117.0</div><div>101.41-51.417.2-114.2</div><div>100.41-42.845.7-79.6</div><div>99.41-45.043.0-32.7</div><div>98.40-56.213.7-2.1</div><div>98.10-61.10.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.34-23.5-6.6-2.1</div><div>106.00-31.9-12.3-5.2</div><div>105.50-37.8-11.7-12.1</div><div>105.45-37.9-10.4-12.7</div><div>105.00-43.1-11.9-17.5</div><div>104.40-50.5-18.2-26.3</div><div>103.41-64.0-36.3-52.6</div><div>102.52-77.3-60.5-95.2</div><div>102.42-74.1-51.1-100.8</div><div>101.72-56.51.3-117.0</div><div>101.41-51.417.2-114.2</div><div>100.41-42.845.7-79.6</div><div>99.41-45.043.0-32.7</div></div></div></div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

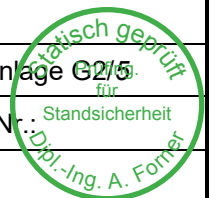
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
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<div><div><div>98.40 -56.2 13.7 -2.1</div><div>98.10 -61.1 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.34</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.52</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.42</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.72</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.29</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-6.2</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-5.8</td><td>7.40</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-5.7</td><td>7.40</td><td>42.38</td><td>47.55</td></tr><tr><td>105.50</td><td>-5.7</td><td>8.31</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-5.7</td><td>8.31</td><td>47.09</td><td>52.30</td></tr><tr><td>105.45</td><td>-5.7</td><td>5.00</td><td>28.34</td><td>43.43</td></tr><tr><td>105.40</td><td>-5.6</td><td>5.00</td><td>28.07</td><td>46.01</td></tr><tr><td>105.05</td><td>-5.2</td><td>5.00</td><td>26.12</td><td>64.06</td></tr><tr><td>105.00</td><td>-5.2</td><td>5.00</td><td>25.84</td><td>66.64</td></tr><tr><td>105.00</td><td>-5.2</td><td>5.00</td><td>25.84</td><td>66.64</td></tr><tr><td>104.95</td><td>-5.1</td><td>5.00</td><td>25.57</td><td>67.92</td></tr><tr><td>104.45</td><td>-4.6</td><td>5.00</td><td>22.85</td><td>80.71</td></tr><tr><td>104.40</td><td>-4.5</td><td>5.00</td><td>22.58</td><td>81.99</td></tr><tr><td>104.40</td><td>-4.5</td><td>5.00</td><td>22.58</td><td>81.99</td></tr><tr><td>104.36</td><td>-4.5</td><td>5.00</td><td>22.31</td><td>83.27</td></tr><tr><td>103.46</td><td>-3.5</td><td>5.00</td><td>17.59</td><td>106.29</td></tr><tr><td>103.41</td><td>-3.5</td><td>5.00</td><td>17.33</td><td>107.57</td></tr><tr><td>103.41</td><td>-3.5</td><td>5.00</td><td>17.33</td><td>107.57</td></tr><tr><td>103.36</td><td>-3.4</td><td>5.00</td><td>17.08</td><td>108.85</td></tr><tr><td>102.57</td><td>-2.6</td><td>5.00</td><td>13.22</td><td>129.31</td></tr><tr><td>102.52</td><td>-2.6</td><td>5.00</td><td>12.99</td><td>130.59</td></tr><tr><td>102.52</td><td>-2.6</td><td>50.00</td><td>129.94</td><td>235.31</td></tr><tr><td>102.47</td><td>-2.6</td><td>50.00</td><td>127.66</td><td>238.78</td></tr><tr><td>102.47</td><td>-2.6</td><td>50.00</td><td>127.66</td><td>238.78</td></tr><tr><td>102.42</td><td>-2.5</td><td>50.00</td><td>125.40</td><td>242.25</td></tr></table></div></div>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.89	0.0	0.0	0.0	106.45	0.0	0.0	0.0	106.34	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	103.41	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.42	0.0	0.0	0.0	101.72	0.0	0.0	0.0	101.41	0.0	0.0	0.0	100.41	0.0	0.0	0.0	99.41	0.0	0.0	0.0	98.40	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-7.9	-	-	-	107.40	-7.9	-	-	-	106.95	-7.4	-	-	-	106.89	-7.3	-	-	-	106.89	-7.3	-	-	-	106.84	-7.2	-	-	-	106.50	-6.8	-	-	-	106.45	-6.8	-	-	-	106.45	-6.8	-	-	-	106.39	-6.7	-	-	-	106.39	-6.7	-	-	-	106.34	-6.7	-	-	-	106.34	-6.7	-	-	-	106.29	-6.6	-	-	-	106.05	-6.3	-	-	-	106.00	-6.3	0.00	0.00	0.00	106.00	-6.3	0.00	0.00	0.00	105.95	-6.2	0.00	0.00	4.75	105.55	-5.8	7.40	42.80	42.79	105.50	-5.7	7.40	42.38	47.55	105.50	-5.7	8.31	47.55	47.55	105.45	-5.7	8.31	47.09	52.30	105.45	-5.7	5.00	28.34	43.43	105.40	-5.6	5.00	28.07	46.01	105.05	-5.2	5.00	26.12	64.06	105.00	-5.2	5.00	25.84	66.64	105.00	-5.2	5.00	25.84	66.64	104.95	-5.1	5.00	25.57	67.92	104.45	-4.6	5.00	22.85	80.71	104.40	-4.5	5.00	22.58	81.99	104.40	-4.5	5.00	22.58	81.99	104.36	-4.5	5.00	22.31	83.27	103.46	-3.5	5.00	17.59	106.29	103.41	-3.5	5.00	17.33	107.57	103.41	-3.5	5.00	17.33	107.57	103.36	-3.4	5.00	17.08	108.85	102.57	-2.6	5.00	13.22	129.31	102.52	-2.6	5.00	12.99	130.59	102.52	-2.6	50.00	129.94	235.31	102.47	-2.6	50.00	127.66	238.78	102.47	-2.6	50.00	127.66	238.78	102.42	-2.5	50.00	125.40	242.25
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105.05	-5.2	5.00	26.12	64.06																																																																																																																																																																																																																																																																																																										
105.00	-5.2	5.00	25.84	66.64																																																																																																																																																																																																																																																																																																										
105.00	-5.2	5.00	25.84	66.64																																																																																																																																																																																																																																																																																																										
104.95	-5.1	5.00	25.57	67.92																																																																																																																																																																																																																																																																																																										
104.45	-4.6	5.00	22.85	80.71																																																																																																																																																																																																																																																																																																										
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103.36	-3.4	5.00	17.08	108.85																																																																																																																																																																																																																																																																																																										
102.57	-2.6	5.00	13.22	129.31																																																																																																																																																																																																																																																																																																										
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102.47	-2.6	50.00	127.66	238.78																																																																																																																																																																																																																																																																																																										
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<table border="1"> <tr><td>102.42</td><td>-2.5</td><td>50.00</td><td>125.40</td><td>242.25</td></tr> <tr><td>102.37</td><td>-2.5</td><td>50.00</td><td>123.16</td><td>245.72</td></tr> <tr><td>101.77</td><td>-2.0</td><td>50.00</td><td>98.14</td><td>287.36</td></tr> <tr><td>101.72</td><td>-1.9</td><td>50.00</td><td>96.21</td><td>290.83</td></tr> <tr><td>101.72</td><td>-1.9</td><td>50.00</td><td>96.21</td><td>290.83</td></tr> <tr><td>101.67</td><td>-1.9</td><td>50.00</td><td>94.31</td><td>294.30</td></tr> <tr><td>101.46</td><td>-1.7</td><td>50.00</td><td>86.96</td><td>308.18</td></tr> <tr><td>101.41</td><td>-1.7</td><td>50.00</td><td>85.18</td><td>311.65</td></tr> <tr><td>101.41</td><td>-1.7</td><td>50.00</td><td>85.18</td><td>311.65</td></tr> <tr><td>101.36</td><td>-1.7</td><td>50.00</td><td>83.43</td><td>315.12</td></tr> <tr><td>100.46</td><td>-1.1</td><td>50.00</td><td>55.76</td><td>377.57</td></tr> <tr><td>100.41</td><td>-1.1</td><td>50.00</td><td>54.42</td><td>381.04</td></tr> <tr><td>100.41</td><td>-1.1</td><td>50.00</td><td>54.42</td><td>381.04</td></tr> <tr><td>100.36</td><td>-1.1</td><td>50.00</td><td>53.09</td><td>384.51</td></tr> <tr><td>99.46</td><td>-0.6</td><td>50.00</td><td>31.50</td><td>446.97</td></tr> <tr><td>99.41</td><td>-0.6</td><td>50.00</td><td>30.39</td><td>450.44</td></tr> <tr><td>99.41</td><td>-0.6</td><td>50.00</td><td>30.39</td><td>450.44</td></tr> <tr><td>99.35</td><td>-0.6</td><td>50.00</td><td>29.30</td><td>453.91</td></tr> <tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>10.33</td><td>516.37</td></tr> <tr><td>98.40</td><td>-0.2</td><td>50.00</td><td>9.29</td><td>519.84</td></tr> <tr><td>98.40</td><td>-0.2</td><td>50.00</td><td>9.29</td><td>519.84</td></tr> <tr><td>98.35</td><td>-0.2</td><td>50.00</td><td>8.26</td><td>523.31</td></tr> <tr><td>98.15</td><td>-0.1</td><td>50.00</td><td>4.12</td><td>537.19</td></tr> <tr><td>98.10</td><td>-0.1</td><td>50.00</td><td>3.09</td><td>540.66</td></tr> </table> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.02356523 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe t_g = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$ $G_{i,k}$ = 176.93 kN/m $G'_{i,k}$ = 0.00 kN/m $P_{v,k}$ = 0.00 kN/m $E_{av,k}$ = 50.67 kN/m ($E_{ah,k}$ = 288.26 kN/m) $B_{v,k}$ = 120.62 Summe $V_{i,k}$ = 106.98 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k}$ = 1.60 MN/m² $R_{b,d}$ = $A \cdot q_{b,k} / \gamma(q_{b,k})$ = $0.7569 \cdot 1.60 \cdot 1000 / 1.40$ = 865.05 kN/m</p> <p>Mantelreibung <table border="1"> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k}$ [kN/m²]</th> <th>Bezeichnung</th> </tr> <tr> <td>106.00</td> <td>105.45</td> <td>0.00</td> <td>S1: Auffüllungen</td> </tr> <tr> <td>105.45</td> <td>102.52</td> <td>0.00</td> <td>S2: Auelehm</td> </tr> <tr> <td>102.52</td> <td>98.10</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d}$ = $\eta(s) \cdot R_{s1,k} / \gamma(q_{s,k})$ = $1.000 \cdot 243.10 / 1.40$ = 173.64 kN/m $R_{i,d}$ = $R_{b,d} + R_{s1,d}$ = 1038.69 kN/m</p> <p>Einwirkungen $V_{i,d}$ = $G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d}$ = 212.32 - 0.00 + 58.27 + 0.00 = 270.58 kN/m $\Rightarrow \mu = V_{i,d} / R_{i,d}$ = 270.58 / 1038.69 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>					102.42	-2.5	50.00	125.40	242.25	102.37	-2.5	50.00	123.16	245.72	101.77	-2.0	50.00	98.14	287.36	101.72	-1.9	50.00	96.21	290.83	101.72	-1.9	50.00	96.21	290.83	101.67	-1.9	50.00	94.31	294.30	101.46	-1.7	50.00	86.96	308.18	101.41	-1.7	50.00	85.18	311.65	101.41	-1.7	50.00	85.18	311.65	101.36	-1.7	50.00	83.43	315.12	100.46	-1.1	50.00	55.76	377.57	100.41	-1.1	50.00	54.42	381.04	100.41	-1.1	50.00	54.42	381.04	100.36	-1.1	50.00	53.09	384.51	99.46	-0.6	50.00	31.50	446.97	99.41	-0.6	50.00	30.39	450.44	99.41	-0.6	50.00	30.39	450.44	99.35	-0.6	50.00	29.30	453.91	98.45	-0.2	50.00	10.33	516.37	98.40	-0.2	50.00	9.29	519.84	98.40	-0.2	50.00	9.29	519.84	98.35	-0.2	50.00	8.26	523.31	98.15	-0.1	50.00	4.12	537.19	98.10	-0.1	50.00	3.09	540.66	von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	106.00	105.45	0.00	S1: Auffüllungen	105.45	102.52	0.00	S2: Auelehm	102.52	98.10	55.00	s3: Flussskies, -sand
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 11_BS 7_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.50 1.00 0.29 0.28 0.55 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.50 107.45 107.45 107.45 105.93 105.26 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.45 10.000 10.000 105.45 102.52 5.000 5.000 102.52 80.00 50.000 50.000</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																															
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<div>Ausnutzungsgrad $\mu_e = 425.421 / 1131.680 = 0.376$ Bettungslager $B_{h,d} = 425.421 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1131.680 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{a,k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.45</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.52</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.45</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.870</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.871</td><td>20.352</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.335</td><td>20.352</td><td>23.106</td><td>0.00</td><td>0.00</td></tr><tr><td>106.335</td><td>106.000</td><td>23.106</td><td>25.933</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.925</td><td>25.933</td><td>26.488</td><td>0.00</td><td>0.00</td></tr><tr><td>105.925</td><td>105.500</td><td>26.488</td><td>27.140</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>27.140</td><td>27.041</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.403</td><td>33.074</td><td>32.919</td><td>0.50</td><td>0.97</td></tr><tr><td>105.403</td><td>105.261</td><td>32.919</td><td>32.454</td><td>0.97</td><td>2.39</td></tr><tr><td>105.261</td><td>105.000</td><td>32.454</td><td>33.565</td><td>2.39</td><td>5.00</td></tr><tr><td>105.000</td><td>104.405</td><td>33.565</td><td>36.098</td><td>5.00</td><td>5.00</td></tr><tr><td>104.405</td><td>103.413</td><td>36.098</td><td>40.319</td><td>5.00</td><td>5.00</td></tr><tr><td>103.413</td><td>102.520</td><td>40.319</td><td>44.118</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.420</td><td>32.618</td><td>33.030</td><td>5.00</td><td>5.00</td></tr><tr><td>102.420</td><td>101.817</td><td>33.030</td><td>35.503</td><td>5.00</td><td>5.00</td></tr><tr><td>101.817</td><td>101.415</td><td>35.503</td><td>37.152</td><td>5.00</td><td>5.00</td></tr><tr><td>101.415</td><td>100.410</td><td>37.152</td><td>41.273</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>41.273</td><td>45.395</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>45.395</td><td>49.516</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>49.516</td><td>50.752</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.752</td><td>124.986</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><th>$w(\text{oben})$</th><th>$w(\text{unten})$</th><th>$z(\text{oben})$</th><th>$z(\text{unten})$</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{pgh}</th><th>k_{pch}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>1</td><td>105.45</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table>			Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	0.390	0.461	30.000	10.00	57.80	0.179	2	102.52	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	0.000	3.923	0.00	0.00	107.448	106.886	3.923	9.870	0.00	0.00	106.886	106.450	9.871	20.352	0.00	0.00	106.450	106.335	20.352	23.106	0.00	0.00	106.335	106.000	23.106	25.933	0.00	0.00	106.000	105.925	25.933	26.488	0.00	0.00	105.925	105.500	26.488	27.140	0.00	0.00	105.500	105.450	27.140	27.041	0.00	0.50	105.450	105.403	33.074	32.919	0.50	0.97	105.403	105.261	32.919	32.454	0.97	2.39	105.261	105.000	32.454	33.565	2.39	5.00	105.000	104.405	33.565	36.098	5.00	5.00	104.405	103.413	36.098	40.319	5.00	5.00	103.413	102.520	40.319	44.118	5.00	5.00	102.520	102.420	32.618	33.030	5.00	5.00	102.420	101.817	33.030	35.503	5.00	5.00	101.817	101.415	35.503	37.152	5.00	5.00	101.415	100.410	37.152	41.273	5.00	5.00	100.410	99.405	41.273	45.395	5.00	5.00	99.405	98.400	45.395	49.516	5.00	5.00	98.400	98.099	49.516	50.752	5.00	5.00	98.099	80.000	50.752	124.986	5.00	5.00	$w(\text{oben})$	$w(\text{unten})$	$z(\text{oben})$	$z(\text{unten})$	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.45	5.005	5.388	30.000	-20.01	18.10	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	
Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																							
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<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.34</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.93</td><td>0.00</td><td>-4.38</td></tr><tr><td>105.93</td><td>105.50</td><td>-4.38</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.40</td><td>-26.73</td><td>-28.23</td></tr><tr><td>105.40</td><td>105.26</td><td>-28.23</td><td>-32.72</td></tr><tr><td>105.26</td><td>105.00</td><td>-32.72</td><td>-41.01</td></tr><tr><td>105.00</td><td>104.40</td><td>-41.01</td><td>-50.45</td></tr><tr><td>104.40</td><td>103.41</td><td>-50.45</td><td>-66.20</td></tr><tr><td>103.41</td><td>102.52</td><td>-66.20</td><td>-80.36</td></tr><tr><td>102.52</td><td>102.42</td><td>-144.80</td><td>-149.07</td></tr><tr><td>102.42</td><td>101.82</td><td>-149.07</td><td>-174.70</td></tr><tr><td>101.82</td><td>101.41</td><td>-174.70</td><td>-191.78</td></tr><tr><td>101.41</td><td>100.41</td><td>-191.78</td><td>-234.49</td></tr><tr><td>100.41</td><td>99.41</td><td>-234.49</td><td>-277.20</td></tr><tr><td>99.41</td><td>98.40</td><td>-277.20</td><td>-319.90</td></tr><tr><td>98.40</td><td>98.10</td><td>-319.90</td><td>-332.72</td></tr><tr><td>98.10</td><td>80.00</td><td>-332.72</td><td>-1101.95</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>-0.1</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-13.9</td><td>-4.5</td><td>-1.1</td></tr><tr><td>106.45</td><td>-26.1</td><td>-12.0</td><td>-4.5</td></tr><tr><td>106.34</td><td>-29.7</td><td>-14.9</td><td>-6.0</td></tr><tr><td>106.00</td><td>-40.4</td><td>-24.4</td><td>-12.6</td></tr><tr><td>105.93</td><td>-42.7</td><td>-26.7</td><td>-14.5</td></tr><tr><td>105.50</td><td>-47.5</td><td>-27.5</td><td>-26.7</td></tr><tr><td>105.45</td><td>-47.6</td><td>-26.4</td><td>-28.0</td></tr><tr><td>105.40</td><td>-48.0</td><td>-25.8</td><td>-29.3</td></tr><tr><td>105.26</td><td>-49.6</td><td>-25.6</td><td>-32.9</td></tr><tr><td>105.00</td><td>-52.5</td><td>-26.2</td><td>-39.6</td></tr><tr><td>104.40</td><td>-59.7</td><td>-32.2</td><td>-56.8</td></tr><tr><td>103.41</td><td>-73.5</td><td>-52.7</td><td>-97.8</td></tr><tr><td>102.52</td><td>-87.8</td><td>-82.0</td><td>-157.2</td></tr><tr><td>102.42</td><td>-82.7</td><td>-68.2</td><td>-164.7</td></tr><tr><td>101.82</td><td>-58.3</td><td>-0.6</td><td>-184.2</td></tr><tr><td>101.41</td><td>-46.8</td><td>31.2</td><td>-177.7</td></tr><tr><td>100.41</td><td>-32.4</td><td>71.5</td><td>-121.8</td></tr><tr><td>99.41</td><td>-34.5</td><td>65.5</td><td>-49.5</td></tr><tr><td>98.40</td><td>-50.0</td><td>20.6</td><td>-3.2</td></tr><tr><td>98.10</td><td>-56.0</td><td>0.0</td><td>0.0</td></tr></tbody></table>			von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.34	106.00	0.00	0.00	106.00	105.93	0.00	-4.38	105.93	105.50	-4.38	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.40	-26.73	-28.23	105.40	105.26	-28.23	-32.72	105.26	105.00	-32.72	-41.01	105.00	104.40	-41.01	-50.45	104.40	103.41	-50.45	-66.20	103.41	102.52	-66.20	-80.36	102.52	102.42	-144.80	-149.07	102.42	101.82	-149.07	-174.70	101.82	101.41	-174.70	-191.78	101.41	100.41	-191.78	-234.49	100.41	99.41	-234.49	-277.20	99.41	98.40	-277.20	-319.90	98.40	98.10	-319.90	-332.72	98.10	80.00	-332.72	-1101.95	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	0.0	0.0	106.89	-13.9	-4.5	-1.1	106.45	-26.1	-12.0	-4.5	106.34	-29.7	-14.9	-6.0	106.00	-40.4	-24.4	-12.6	105.93	-42.7	-26.7	-14.5	105.50	-47.5	-27.5	-26.7	105.45	-47.6	-26.4	-28.0	105.40	-48.0	-25.8	-29.3	105.26	-49.6	-25.6	-32.9	105.00	-52.5	-26.2	-39.6	104.40	-59.7	-32.2	-56.8	103.41	-73.5	-52.7	-97.8	102.52	-87.8	-82.0	-157.2	102.42	-82.7	-68.2	-164.7	101.82	-58.3	-0.6	-184.2	101.41	-46.8	31.2	-177.7	100.41	-32.4	71.5	-121.8	99.41	-34.5	65.5	-49.5	98.40	-50.0	20.6	-3.2	98.10	-56.0	0.0	0.0
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<table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.34</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.93</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.26</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.52</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.42</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	-12.1	-3.9	-0.9	106.45	-22.7	-10.5	-3.9	106.34	-25.8	-13.0	-5.2	106.00	-35.2	-21.2	-10.9	105.93	-37.2	-23.2	-12.6	105.50	-41.4	-24.0	-23.2	105.45	-41.5	-23.0	-24.4	105.40	-41.8	-22.5	-25.5	105.26	-43.2	-22.3	-28.6	105.00	-45.7	-22.8	-34.5	104.40	-52.0	-28.0	-49.4	103.41	-64.0	-45.7	-85.0	102.52	-76.4	-71.0	-136.4	102.42	-72.0	-59.1	-143.0	101.82	-50.7	-0.5	-159.8	101.41	-40.8	27.1	-154.2	100.41	-28.3	62.0	-105.6	99.41	-30.0	56.8	-43.0	98.40	-43.6	17.9	-2.8	98.10	-48.8	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	-12.1	-3.9	-0.9	106.45	-22.7	-10.5	-3.9	106.34	-25.8	-13.0	-5.2	106.00	-35.2	-21.2	-10.9	105.93	-37.2	-23.2	-12.6	105.50	-41.4	-24.0	-23.2	105.45	-41.5	-23.0	-24.4	105.40	-41.8	-22.5	-25.5	105.26	-43.2	-22.3	-28.6	105.00	-45.7	-22.8	-34.5	104.40	-52.0	-28.0	-49.4	103.41	-64.0	-45.7	-85.0	102.52	-76.4	-71.0	-136.4	102.42	-72.0	-59.1	-143.0	101.82	-50.7	-0.5	-159.8	101.41	-40.8	27.1	-154.2	100.41	-28.3	62.0	-105.6	99.41	-30.0	56.8	-43.0	98.40	-43.6	17.9	-2.8	98.10	-48.8	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	0.0	0.0	0.0	106.45	0.0	0.0	0.0	106.34	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.93	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.40	0.0	0.0	0.0	105.26	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	103.41	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.42	0.0	0.0	0.0
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<div><div><div>101.820.00.00.0.0</div><div>101.410.00.0.0.0.0</div><div>100.410.00.0.0.0.0</div><div>99.410.00.0.0.0.0</div><div>98.400.00.0.0.0.0</div><div>98.100.00.0.0.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.45</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.93</td><td>-8.1</td><td>0.00</td><td>0.00</td><td>7.12</td></tr><tr><td>105.93</td><td>-8.1</td><td>0.87</td><td>7.12</td><td>7.12</td></tr><tr><td>105.88</td><td>-8.1</td><td>0.87</td><td>7.06</td><td>11.61</td></tr><tr><td>105.55</td><td>-7.6</td><td>5.70</td><td>43.06</td><td>43.06</td></tr><tr><td>105.50</td><td>-7.5</td><td>5.70</td><td>42.64</td><td>47.55</td></tr><tr><td>105.50</td><td>-7.5</td><td>6.36</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-7.4</td><td>6.36</td><td>47.05</td><td>52.30</td></tr><tr><td>105.45</td><td>-7.4</td><td>5.87</td><td>43.44</td><td>43.43</td></tr><tr><td>105.40</td><td>-7.3</td><td>5.87</td><td>43.00</td><td>45.87</td></tr><tr><td>105.40</td><td>-7.3</td><td>5.00</td><td>36.63</td><td>45.87</td></tr><tr><td>105.36</td><td>-7.3</td><td>5.00</td><td>36.26</td><td>48.30</td></tr><tr><td>105.31</td><td>-7.2</td><td>5.00</td><td>35.89</td><td>50.73</td></tr><tr><td>105.26</td><td>-7.1</td><td>5.00</td><td>35.53</td><td>53.17</td></tr><tr><td>105.26</td><td>-7.1</td><td>5.00</td><td>35.53</td><td>53.17</td></tr><tr><td>105.21</td><td>-7.0</td><td>5.00</td><td>35.12</td><td>55.86</td></tr><tr><td>105.05</td><td>-6.8</td><td>5.00</td><td>33.91</td><td>63.95</td></tr><tr><td>105.00</td><td>-6.7</td><td>5.00</td><td>33.51</td><td>66.64</td></tr><tr><td>105.00</td><td>-6.7</td><td>5.00</td><td>33.51</td><td>66.64</td></tr><tr><td>104.95</td><td>-6.6</td><td>5.00</td><td>33.13</td><td>67.92</td></tr><tr><td>104.45</td><td>-5.9</td><td>5.00</td><td>29.36</td><td>80.71</td></tr><tr><td>104.40</td><td>-5.8</td><td>5.00</td><td>28.99</td><td>81.99</td></tr><tr><td>104.40</td><td>-5.8</td><td>5.00</td><td>28.99</td><td>81.99</td></tr><tr><td>104.36</td><td>-5.7</td><td>5.00</td><td>28.62</td><td>83.27</td></tr><tr><td>103.46</td><td>-4.4</td><td>5.00</td><td>22.17</td><td>106.29</td></tr><tr><td>103.41</td><td>-4.4</td><td>5.00</td><td>21.82</td><td>107.57</td></tr><tr><td>103.41</td><td>-4.4</td><td>5.00</td><td>21.82</td><td>107.57</td></tr><tr><td>103.36</td><td>-4.3</td><td>5.00</td><td>21.48</td><td>108.85</td></tr><tr><td>102.57</td><td>-3.3</td><td>5.00</td><td>16.28</td><td>129.31</td></tr><tr><td>102.52</td><td>-3.2</td><td>5.00</td><td>15.98</td><td>130.59</td></tr><tr><td>102.52</td><td>-3.2</td><td>50.00</td><td>159.78</td><td>235.31</td></tr><tr><td>102.47</td><td>-3.1</td><td>50.00</td><td>156.73</td><td>238.78</td></tr><tr><td>102.47</td><td>-3.1</td><td>50.00</td><td>156.73</td><td>238.78</td></tr><tr><td>102.42</td><td>-3.1</td><td>50.00</td><td>153.71</td><td>242.25</td></tr><tr><td>102.42</td><td>-3.1</td><td>50.00</td><td>153.71</td><td>242.25</td></tr><tr><td>102.37</td><td>-3.0</td><td>50.00</td><td>150.72</td><td>245.72</td></tr><tr><td>101.87</td><td>-2.5</td><td>50.00</td><td>122.62</td><td>280.42</td></tr><tr><td>101.82</td><td>-2.4</td><td>50.00</td><td>120.00</td><td>283.89</td></tr><tr><td>101.82</td><td>-2.4</td><td>50.00</td><td>120.00</td><td>283.89</td></tr><tr><td>101.77</td><td>-2.3</td><td>50.00</td><td>117.41</td><td>287.36</td></tr><tr><td>101.46</td><td>-2.1</td><td>50.00</td><td>102.58</td><td>308.18</td></tr><tr><td>101.41</td><td>-2.0</td><td>50.00</td><td>100.23</td><td>311.65</td></tr></table></div></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-10.6	-	-	-	107.45	-10.6	-	-	-	107.45	-10.6	-	-	-	107.40	-10.5	-	-	-	106.95	-9.8	-	-	-	106.89	-9.7	-	-	-	106.89	-9.7	-	-	-	106.84	-9.6	-	-	-	106.50	-9.0	-	-	-	106.45	-9.0	-	-	-	106.45	-9.0	-	-	-	106.39	-8.9	-	-	-	106.39	-8.9	-	-	-	106.34	-8.8	-	-	-	106.34	-8.8	-	-	-	106.28	-8.7	-	-	-	106.05	-8.3	-	-	-	106.00	-8.3	0.00	0.00	0.00	106.00	-8.3	0.00	0.00	0.00	105.93	-8.1	0.00	0.00	7.12	105.93	-8.1	0.87	7.12	7.12	105.88	-8.1	0.87	7.06	11.61	105.55	-7.6	5.70	43.06	43.06	105.50	-7.5	5.70	42.64	47.55	105.50	-7.5	6.36	47.55	47.55	105.45	-7.4	6.36	47.05	52.30	105.45	-7.4	5.87	43.44	43.43	105.40	-7.3	5.87	43.00	45.87	105.40	-7.3	5.00	36.63	45.87	105.36	-7.3	5.00	36.26	48.30	105.31	-7.2	5.00	35.89	50.73	105.26	-7.1	5.00	35.53	53.17	105.26	-7.1	5.00	35.53	53.17	105.21	-7.0	5.00	35.12	55.86	105.05	-6.8	5.00	33.91	63.95	105.00	-6.7	5.00	33.51	66.64	105.00	-6.7	5.00	33.51	66.64	104.95	-6.6	5.00	33.13	67.92	104.45	-5.9	5.00	29.36	80.71	104.40	-5.8	5.00	28.99	81.99	104.40	-5.8	5.00	28.99	81.99	104.36	-5.7	5.00	28.62	83.27	103.46	-4.4	5.00	22.17	106.29	103.41	-4.4	5.00	21.82	107.57	103.41	-4.4	5.00	21.82	107.57	103.36	-4.3	5.00	21.48	108.85	102.57	-3.3	5.00	16.28	129.31	102.52	-3.2	5.00	15.98	130.59	102.52	-3.2	50.00	159.78	235.31	102.47	-3.1	50.00	156.73	238.78	102.47	-3.1	50.00	156.73	238.78	102.42	-3.1	50.00	153.71	242.25	102.42	-3.1	50.00	153.71	242.25	102.37	-3.0	50.00	150.72	245.72	101.87	-2.5	50.00	122.62	280.42	101.82	-2.4	50.00	120.00	283.89	101.82	-2.4	50.00	120.00	283.89	101.77	-2.3	50.00	117.41	287.36	101.46	-2.1	50.00	102.58	308.18	101.41	-2.0	50.00	100.23	311.65
Tiefe	w	ks	sig,Bh,k	eph,k																																																																																																																																																																																																																																																																																																																							
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106.84	-9.6	-	-	-																																																																																																																																																																																																																																																																																																																							
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105.93	-8.1	0.00	0.00	7.12																																																																																																																																																																																																																																																																																																																							
105.93	-8.1	0.87	7.12	7.12																																																																																																																																																																																																																																																																																																																							
105.88	-8.1	0.87	7.06	11.61																																																																																																																																																																																																																																																																																																																							
105.55	-7.6	5.70	43.06	43.06																																																																																																																																																																																																																																																																																																																							
105.50	-7.5	5.70	42.64	47.55																																																																																																																																																																																																																																																																																																																							
105.50	-7.5	6.36	47.55	47.55																																																																																																																																																																																																																																																																																																																							
105.45	-7.4	6.36	47.05	52.30																																																																																																																																																																																																																																																																																																																							
105.45	-7.4	5.87	43.44	43.43																																																																																																																																																																																																																																																																																																																							
105.40	-7.3	5.87	43.00	45.87																																																																																																																																																																																																																																																																																																																							
105.40	-7.3	5.00	36.63	45.87																																																																																																																																																																																																																																																																																																																							
105.36	-7.3	5.00	36.26	48.30																																																																																																																																																																																																																																																																																																																							
105.31	-7.2	5.00	35.89	50.73																																																																																																																																																																																																																																																																																																																							
105.26	-7.1	5.00	35.53	53.17																																																																																																																																																																																																																																																																																																																							
105.26	-7.1	5.00	35.53	53.17																																																																																																																																																																																																																																																																																																																							
105.21	-7.0	5.00	35.12	55.86																																																																																																																																																																																																																																																																																																																							
105.05	-6.8	5.00	33.91	63.95																																																																																																																																																																																																																																																																																																																							
105.00	-6.7	5.00	33.51	66.64																																																																																																																																																																																																																																																																																																																							
105.00	-6.7	5.00	33.51	66.64																																																																																																																																																																																																																																																																																																																							
104.95	-6.6	5.00	33.13	67.92																																																																																																																																																																																																																																																																																																																							
104.45	-5.9	5.00	29.36	80.71																																																																																																																																																																																																																																																																																																																							
104.40	-5.8	5.00	28.99	81.99																																																																																																																																																																																																																																																																																																																							
104.40	-5.8	5.00	28.99	81.99																																																																																																																																																																																																																																																																																																																							
104.36	-5.7	5.00	28.62	83.27																																																																																																																																																																																																																																																																																																																							
103.46	-4.4	5.00	22.17	106.29																																																																																																																																																																																																																																																																																																																							
103.41	-4.4	5.00	21.82	107.57																																																																																																																																																																																																																																																																																																																							
103.41	-4.4	5.00	21.82	107.57																																																																																																																																																																																																																																																																																																																							
103.36	-4.3	5.00	21.48	108.85																																																																																																																																																																																																																																																																																																																							
102.57	-3.3	5.00	16.28	129.31																																																																																																																																																																																																																																																																																																																							
102.52	-3.2	5.00	15.98	130.59																																																																																																																																																																																																																																																																																																																							
102.52	-3.2	50.00	159.78	235.31																																																																																																																																																																																																																																																																																																																							
102.47	-3.1	50.00	156.73	238.78																																																																																																																																																																																																																																																																																																																							
102.47	-3.1	50.00	156.73	238.78																																																																																																																																																																																																																																																																																																																							
102.42	-3.1	50.00	153.71	242.25																																																																																																																																																																																																																																																																																																																							
102.42	-3.1	50.00	153.71	242.25																																																																																																																																																																																																																																																																																																																							
102.37	-3.0	50.00	150.72	245.72																																																																																																																																																																																																																																																																																																																							
101.87	-2.5	50.00	122.62	280.42																																																																																																																																																																																																																																																																																																																							
101.82	-2.4	50.00	120.00	283.89																																																																																																																																																																																																																																																																																																																							
101.82	-2.4	50.00	120.00	283.89																																																																																																																																																																																																																																																																																																																							
101.77	-2.3	50.00	117.41	287.36																																																																																																																																																																																																																																																																																																																							
101.46	-2.1	50.00	102.58	308.18																																																																																																																																																																																																																																																																																																																							
101.41	-2.0	50.00	100.23	311.65																																																																																																																																																																																																																																																																																																																							
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Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

101.41	-2.0	50.00	100.23	311.65
101.36	-2.0	50.00	97.91	315.12
100.46	-1.2	50.00	61.32	377.57
100.41	-1.2	50.00	59.54	381.04
100.41	-1.2	50.00	59.54	381.04
100.36	-1.2	50.00	57.78	384.51
99.46	-0.6	50.00	29.27	446.97
99.41	-0.6	50.00	27.81	450.44
99.41	-0.6	50.00	27.81	450.44
99.35	-0.5	50.00	26.37	453.91
98.45	0.0	50.00	1.30	516.37
98.40	0.0	50.00	-0.07	519.84
98.40	0.0	50.00	-0.07	519.84
98.35	0.0	50.00	-1.43	523.31
98.15	0.1	50.00	-6.90	537.19
98.10	0.2	50.00	-8.26	540.66

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.03114072$
 Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 7.90$ m
 Profillänge = 9.35 m

Nachweis Summe V
 Nachweis des mobilisierten Erdwiderstands
 Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$
 $G_{i,k} = 176.93$ kN/m
 $G'_{i,k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 58.07$ kN/m ($E_{ah,k} = 331.37$ kN/m)
 $B_{v,k} = 136.07$
 Summe $V_{i,k} = 98.93$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
 (Erfahrungswerte nach EA Pfähle)
 Verfahren 2: EAU Bild E 4-3 (rechts)
 Bohrpfahlwand $D = 0.88$ m
 Verhältniswert (min, max) = 0.00
 Spitzendruck $q_{c,m} = 7.50$ MN/m²
 (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
106.00	105.45	0.00	S1: Auffüllungen
105.45	102.52	0.00	S2: Auelehm
102.52	98.10	55.00	s3: Flussskies, -sand

 Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 243.10 / 1.40 = 173.64$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1038.69$ kN/m

Einwirkungen
 $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 66.78 + 0.00 = 279.10$ kN/m
 $\Rightarrow \mu = V_{i,d} / R_{d} = 279.10 / 1038.69 = 0.27$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt:	Anlage G2 Schnitt 7R	Seite Anlage G2/11
Kapitel:	2 LF 1.2 (BS-T, mit Lasten)	Archiv Nr.: 2111
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 12_BS 7_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.50 1.00 0.29 0.28 0.55 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 102.52 5.000 5.000 102.52 80.00 50.000 50.000</p> <p>Ausnutzungsgrad mue = 284.076 / 382.477 = 0.743 Bettungslager Bh,d = 284.076 kN/m Erdwiderstand Eph,d = 382.477 kN/m</p>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/12
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																										
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																														
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<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-91.80</td><td>-79.48</td><td>-79.48</td><td>-7.93</td><td>6.900E+4</td><td>2.100E+7</td><td>-101.33</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.5</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-9.8</td><td>0.1</td><td>-91.80</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 7\Rechtes Ufer\10_BS 7_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0074</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ'_{m,k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.45</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.52</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.45</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.335</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.335</td><td>105.500</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>26.395</td><td>26.395</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.400</td><td>26.395</td><td>26.395</td><td>0.50</td><td>1.00</td></tr><tr><td>105.400</td><td>105.000</td><td>26.395</td><td>26.395</td><td>1.00</td><td>5.00</td></tr><tr><td>105.000</td><td>104.500</td><td>21.996</td><td>21.996</td><td>5.00</td><td>5.00</td></tr><tr><td>104.500</td><td>104.400</td><td>21.996</td><td>21.996</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>21.996</td><td>21.996</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-91.80	-79.48	-79.48	-7.93	6.900E+4	2.100E+7	-101.33	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.5	0.0	-91.80	0.00	0.00	-0.90	106.95	-8.6	0.0	-91.80	0.00	0.00	-0.90	106.95	-8.6	0.0	-91.80	0.00	0.00	-0.80	106.95	-8.7	0.0	-91.80	0.00	0.00	-0.70	106.95	-8.9	0.0	-91.80	0.00	0.00	-0.60	106.95	-9.0	0.0	-91.80	0.00	0.00	-0.50	106.95	-9.1	0.0	-91.80	0.00	0.00	-0.40	106.95	-9.3	0.0	-91.80	0.00	0.00	-0.30	106.95	-9.4	0.0	-91.80	0.00	0.00	-0.20	106.95	-9.5	0.0	-91.80	0.00	0.00	-0.10	106.95	-9.7	0.0	-91.80	0.00	0.00	0.00	106.95	-9.8	0.1	-91.80	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0074	Schicht	UK	γ _{m,k}	γ' _{m,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	0.390	0.461	30.000	10.00	57.80	0.179	2	102.52	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	26.395	26.395	0.00	0.00	106.950	106.886	26.395	26.395	0.00	0.00	106.886	106.450	26.395	26.395	0.00	0.00	106.450	106.335	26.395	26.395	0.00	0.00	106.335	105.500	26.395	26.395	0.00	0.00	105.500	105.450	26.395	26.395	0.00	0.50	105.450	105.400	26.395	26.395	0.50	1.00	105.400	105.000	26.395	26.395	1.00	5.00	105.000	104.500	21.996	21.996	5.00	5.00	104.500	104.400	21.996	21.996	5.00	5.00	104.400	103.400	21.996	21.996	5.00	5.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>		Seite Anlage G2/13
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																						
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]																																																																																																																																																																																																																																																																																																																						
1	106.95	0.00	1.00	-91.80	-79.48	-79.48	-7.93	6.900E+4	2.100E+7	-101.33																																																																																																																																																																																																																																																																																																																						
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[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]																																																																																																																																																																																																																																																																																																																										
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-0.50	106.95	-9.1	0.0	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
-0.40	106.95	-9.3	0.0	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
-0.30	106.95	-9.4	0.0	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
-0.20	106.95	-9.5	0.0	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
-0.10	106.95	-9.7	0.0	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
0.00	106.95	-9.8	0.1	-91.80	0.00	0.00																																																																																																																																																																																																																																																																																																																										
[-]	[m]	[m]																																																																																																																																																																																																																																																																																																																														
1	106.95	-0.0074																																																																																																																																																																																																																																																																																																																														
Schicht	UK	γ _{m,k}	γ' _{m,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}																																																																																																																																																																																																																																																																																																																						
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																						
1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																																																						
2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																																																						
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																																						
Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)																																																																																																																																																																																																																																																																																																																									
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																									
1	105.45	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																																																									
2	102.52	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																									
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																									
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																											
107.450	106.950	26.395	26.395	0.00	0.00																																																																																																																																																																																																																																																																																																																											
106.950	106.886	26.395	26.395	0.00	0.00																																																																																																																																																																																																																																																																																																																											
106.886	106.450	26.395	26.395	0.00	0.00																																																																																																																																																																																																																																																																																																																											
106.450	106.335	26.395	26.395	0.00	0.00																																																																																																																																																																																																																																																																																																																											
106.335	105.500	26.395	26.395	0.00	0.00																																																																																																																																																																																																																																																																																																																											
105.500	105.450	26.395	26.395	0.00	0.50																																																																																																																																																																																																																																																																																																																											
105.450	105.400	26.395	26.395	0.50	1.00																																																																																																																																																																																																																																																																																																																											
105.400	105.000	26.395	26.395	1.00	5.00																																																																																																																																																																																																																																																																																																																											
105.000	104.500	21.996	21.996	5.00	5.00																																																																																																																																																																																																																																																																																																																											
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																													
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																													
<table><tr><td>103.400</td><td>102.550</td><td>21.996</td><td>21.996</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.520</td><td>38.984</td><td>39.112</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.420</td><td>29.052</td><td>29.464</td><td>5.00</td><td>5.00</td></tr><tr><td>102.420</td><td>101.817</td><td>29.464</td><td>31.937</td><td>5.00</td><td>5.00</td></tr><tr><td>101.817</td><td>101.415</td><td>31.937</td><td>33.585</td><td>5.00</td><td>5.00</td></tr><tr><td>101.415</td><td>100.410</td><td>33.585</td><td>37.707</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>37.707</td><td>41.828</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>41.828</td><td>45.949</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>45.949</td><td>47.186</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>47.186</td><td>121.419</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-7.22</td><td>-7.70</td></tr><tr><td>102.52</td><td>102.42</td><td>-0.94</td><td>-5.21</td></tr><tr><td>102.42</td><td>101.82</td><td>-5.21</td><td>-30.84</td></tr><tr><td>101.82</td><td>101.41</td><td>-30.84</td><td>-47.92</td></tr><tr><td>101.41</td><td>100.41</td><td>-47.92</td><td>-90.63</td></tr><tr><td>100.41</td><td>99.41</td><td>-90.63</td><td>-133.34</td></tr><tr><td>99.41</td><td>98.40</td><td>-133.34</td><td>-176.04</td></tr><tr><td>98.40</td><td>98.10</td><td>-176.04</td><td>-188.86</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.86</td><td>-958.09</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.4</td><td>-15.2</td><td>-3.8</td><td>-91.8</td></tr><tr><td>106.95</td><td>-16.4</td><td>76.6</td><td>-3.8</td><td></td></tr><tr><td>106.89</td><td>-18.5</td><td>74.7</td><td>1.0</td><td></td></tr><tr><td>106.45</td><td>-32.8</td><td>61.4</td><td>30.7</td><td></td></tr><tr><td>106.34</td><td>-36.6</td><td>58.0</td><td>37.6</td><td></td></tr><tr><td>105.50</td><td>-64.0</td><td>32.6</td><td>75.4</td><td></td></tr><tr><td>105.45</td><td>-65.6</td><td>31.1</td><td>77.0</td><td></td></tr><tr><td>105.40</td><td>-67.1</td><td>29.5</td><td>78.5</td><td></td></tr><tr><td>105.00</td><td>-79.1</td><td>15.9</td><td>87.6</td><td></td></tr><tr><td>104.50</td><td>-93.4</td><td>0.3</td><td>91.7</td><td></td></tr><tr><td>104.40</td><td>-96.2</td><td>-2.9</td><td>91.6</td><td></td></tr><tr><td>103.40</td><td>-124.8</td><td>-34.1</td><td>73.1</td><td></td></tr><tr><td>102.55</td><td>-149.0</td><td>-60.7</td><td>32.7</td><td></td></tr><tr><td>102.52</td><td>-149.9</td><td>-62.3</td><td>30.9</td><td></td></tr><tr><td>102.42</td><td>-151.9</td><td>-65.9</td><td>24.5</td><td></td></tr><tr><td>101.82</td><td>-157.5</td><td>-71.8</td><td>-18.4</td><td></td></tr><tr><td>101.41</td><td>-154.9</td><td>-60.7</td><td>-45.4</td><td></td></tr><tr><td>100.41</td><td>-130.0</td><td>10.3</td><td>-73.5</td><td></td></tr><tr><td>99.41</td><td>-117.5</td><td>45.2</td><td>-40.4</td><td></td></tr><tr><td>98.40</td><td>-127.2</td><td>19.3</td><td>-3.0</td><td></td></tr><tr><td>98.10</td><td>-133.1</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.400	102.550	21.996	21.996	5.00	5.00	102.550	102.520	38.984	39.112	5.00	5.00	102.520	102.420	29.052	29.464	5.00	5.00	102.420	101.817	29.464	31.937	5.00	5.00	101.817	101.415	31.937	33.585	5.00	5.00	101.415	100.410	33.585	37.707	5.00	5.00	100.410	99.405	37.707	41.828	5.00	5.00	99.405	98.400	41.828	45.949	5.00	5.00	98.400	98.099	45.949	47.186	5.00	5.00	98.099	80.000	47.186	121.419	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.52	-7.22	-7.70	102.52	102.42	-0.94	-5.21	102.42	101.82	-5.21	-30.84	101.82	101.41	-30.84	-47.92	101.41	100.41	-47.92	-90.63	100.41	99.41	-90.63	-133.34	99.41	98.40	-133.34	-176.04	98.40	98.10	-176.04	-188.86	98.10	80.00	-188.86	-958.09	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.4	-15.2	-3.8	-91.8	106.95	-16.4	76.6	-3.8		106.89	-18.5	74.7	1.0		106.45	-32.8	61.4	30.7		106.34	-36.6	58.0	37.6		105.50	-64.0	32.6	75.4		105.45	-65.6	31.1	77.0		105.40	-67.1	29.5	78.5		105.00	-79.1	15.9	87.6		104.50	-93.4	0.3	91.7		104.40	-96.2	-2.9	91.6		103.40	-124.8	-34.1	73.1		102.55	-149.0	-60.7	32.7		102.52	-149.9	-62.3	30.9		102.42	-151.9	-65.9	24.5		101.82	-157.5	-71.8	-18.4		101.41	-154.9	-60.7	-45.4		100.41	-130.0	10.3	-73.5		99.41	-117.5	45.2	-40.4		98.40	-127.2	19.3	-3.0		98.10	-133.1	0.0	0.0	
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2	102.52	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																													
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106.45	-32.8	61.4	30.7																																																																																																																																																																																																																																																																																
106.34	-36.6	58.0	37.6																																																																																																																																																																																																																																																																																
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105.40	-67.1	29.5	78.5																																																																																																																																																																																																																																																																																
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101.82	-157.5	-71.8	-18.4																																																																																																																																																																																																																																																																																
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Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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<div>Schnittgrößen ([g+q+w],k)</div> <table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-14.3</td><td>-13.2</td><td>-3.3</td><td>-79.5</td></tr><tr><td>106.95</td><td>-14.3</td><td>66.3</td><td>-3.3</td><td></td></tr><tr><td>106.89</td><td>-16.1</td><td>64.6</td><td>0.9</td><td></td></tr><tr><td>106.45</td><td>-28.5</td><td>53.1</td><td>26.5</td><td></td></tr><tr><td>106.34</td><td>-31.8</td><td>50.1</td><td>32.4</td><td></td></tr><tr><td>105.50</td><td>-55.6</td><td>28.0</td><td>65.1</td><td></td></tr><tr><td>105.45</td><td>-57.1</td><td>26.7</td><td>66.4</td><td></td></tr><tr><td>105.40</td><td>-58.4</td><td>25.3</td><td>67.7</td><td></td></tr><tr><td>105.00</td><td>-68.8</td><td>13.6</td><td>75.6</td><td></td></tr><tr><td>104.50</td><td>-81.2</td><td>0.1</td><td>79.0</td><td></td></tr><tr><td>104.40</td><td>-83.7</td><td>-2.6</td><td>78.8</td><td></td></tr><tr><td>103.40</td><td>-108.5</td><td>-29.6</td><td>62.7</td><td></td></tr><tr><td>102.55</td><td>-129.6</td><td>-52.6</td><td>27.8</td><td></td></tr><tr><td>102.52</td><td>-130.4</td><td>-53.9</td><td>26.2</td><td></td></tr><tr><td>102.42</td><td>-132.2</td><td>-57.0</td><td>20.6</td><td></td></tr><tr><td>101.82</td><td>-137.0</td><td>-62.1</td><td>-16.5</td><td></td></tr><tr><td>101.41</td><td>-134.8</td><td>-52.4</td><td>-39.8</td><td></td></tr><tr><td>100.41</td><td>-113.1</td><td>9.1</td><td>-64.0</td><td></td></tr><tr><td>99.41</td><td>-102.2</td><td>39.3</td><td>-35.1</td><td></td></tr><tr><td>98.40</td><td>-110.7</td><td>16.8</td><td>-2.6</td><td></td></tr><tr><td>98.10</td><td>-115.8</td><td>0.0</td><td>0.0</td><td></td></tr></table> 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<div><div><div>101.410.00.00.0.0</div><div>100.410.000.00.0.0</div><div>99.410.000.00.0.0</div><div>98.400.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div>Weggrößen ([g+q],k) berechnet mit EI= 5.887E+5 kN·m²/m</div><div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.29</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.52</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>12.51</td></tr><tr><td>102.52</td><td>-4.4</td><td>0.35</td><td>1.53</td><td>1.53</td></tr><tr><td>102.47</td><td>-4.3</td><td>0.35</td><td>1.51</td><td>5.00</td></tr><tr><td>102.47</td><td>-4.3</td><td>1.15</td><td>5.00</td><td>5.00</td></tr><tr><td>102.42</td><td>-4.3</td><td>1.15</td><td>4.93</td><td>8.47</td></tr><tr><td>102.42</td><td>-4.3</td><td>1.98</td><td>8.47</td><td>8.47</td></tr><tr><td>102.37</td><td>-4.2</td><td>1.98</td><td>8.36</td><td>11.94</td></tr><tr><td>101.87</td><td>-3.6</td><td>12.84</td><td>46.64</td><td>46.64</td></tr><tr><td>101.82</td><td>-3.6</td><td>12.84</td><td>45.89</td><td>50.11</td></tr><tr><td>101.82</td><td>-3.6</td><td>14.02</td><td>50.11</td><td>50.11</td></tr><tr><td>101.77</td><td>-3.5</td><td>14.02</td><td>49.30</td><td>53.58</td></tr><tr><td>101.46</td><td>-3.2</td><td>23.49</td><td>74.41</td><td>74.40</td></tr><tr><td>101.41</td><td>-3.1</td><td>23.49</td><td>73.05</td><td>77.87</td></tr><tr><td>101.41</td><td>-3.1</td><td>25.04</td><td>77.88</td><td>77.87</td></tr><tr><td>101.36</td><td>-3.1</td><td>25.04</td><td>76.44</td><td>81.34</td></tr><tr><td>100.46</td><td>-2.1</td><td>50.00</td><td>102.93</td><td>143.80</td></tr><tr><td>100.41</td><td>-2.0</td><td>50.00</td><td>100.30</td><td>147.27</td></tr><tr><td>100.41</td><td>-2.0</td><td>50.00</td><td>100.30</td><td>147.27</td></tr></table></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.9	-	-	-	107.40	-8.8	-	-	-	107.00	-8.5	-	-	-	106.95	-8.5	-	-	-	106.95	-8.5	-	-	-	106.89	-8.5	-	-	-	106.89	-8.5	-	-	-	106.84	-8.4	-	-	-	106.50	-8.2	-	-	-	106.45	-8.1	-	-	-	106.45	-8.1	-	-	-	106.39	-8.1	-	-	-	106.39	-8.1	-	-	-	106.34	-8.1	-	-	-	106.34	-8.1	-	-	-	106.29	-8.0	-	-	-	105.55	-7.4	-	-	-	105.50	-7.4	-	-	-	105.50	-7.4	-	-	-	105.45	-7.4	-	-	-	105.45	-7.4	-	-	-	105.40	-7.3	-	-	-	105.40	-7.3	-	-	-	105.35	-7.3	-	-	-	105.05	-7.0	-	-	-	105.00	-7.0	-	-	-	105.00	-7.0	-	-	-	104.95	-6.9	-	-	-	104.55	-6.6	-	-	-	104.50	-6.5	-	-	-	104.50	-6.5	-	-	-	104.45	-6.5	-	-	-	104.45	-6.5	-	-	-	104.40	-6.4	-	-	-	104.40	-6.4	-	-	-	104.35	-6.4	-	-	-	103.45	-5.4	-	-	-	103.40	-5.4	-	-	-	103.40	-5.4	-	-	-	103.35	-5.3	-	-	-	102.60	-4.5	-	-	-	102.55	-4.4	0.00	0.00	0.00	102.55	-4.4	0.00	0.00	11.73	102.52	-4.4	0.00	0.00	12.51	102.52	-4.4	0.35	1.53	1.53	102.47	-4.3	0.35	1.51	5.00	102.47	-4.3	1.15	5.00	5.00	102.42	-4.3	1.15	4.93	8.47	102.42	-4.3	1.98	8.47	8.47	102.37	-4.2	1.98	8.36	11.94	101.87	-3.6	12.84	46.64	46.64	101.82	-3.6	12.84	45.89	50.11	101.82	-3.6	14.02	50.11	50.11	101.77	-3.5	14.02	49.30	53.58	101.46	-3.2	23.49	74.41	74.40	101.41	-3.1	23.49	73.05	77.87	101.41	-3.1	25.04	77.88	77.87	101.36	-3.1	25.04	76.44	81.34	100.46	-2.1	50.00	102.93	143.80	100.41	-2.0	50.00	100.30	147.27	100.41	-2.0	50.00	100.30	147.27
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102.47	-4.3	0.35	1.51	5.00																																																																																																																																																																																																																																																																																																																												
102.47	-4.3	1.15	5.00	5.00																																																																																																																																																																																																																																																																																																																												
102.42	-4.3	1.15	4.93	8.47																																																																																																																																																																																																																																																																																																																												
102.42	-4.3	1.98	8.47	8.47																																																																																																																																																																																																																																																																																																																												
102.37	-4.2	1.98	8.36	11.94																																																																																																																																																																																																																																																																																																																												
101.87	-3.6	12.84	46.64	46.64																																																																																																																																																																																																																																																																																																																												
101.82	-3.6	12.84	45.89	50.11																																																																																																																																																																																																																																																																																																																												
101.82	-3.6	14.02	50.11	50.11																																																																																																																																																																																																																																																																																																																												
101.77	-3.5	14.02	49.30	53.58																																																																																																																																																																																																																																																																																																																												
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101.41	-3.1	23.49	73.05	77.87																																																																																																																																																																																																																																																																																																																												
101.41	-3.1	25.04	77.88	77.87																																																																																																																																																																																																																																																																																																																												
101.36	-3.1	25.04	76.44	81.34																																																																																																																																																																																																																																																																																																																												
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<table><tr><td>100.36</td><td>-2.0</td><td>50.00</td><td>97.67</td><td>150.74</td></tr><tr><td>99.46</td><td>-1.1</td><td>50.00</td><td>52.56</td><td>213.20</td></tr><tr><td>99.41</td><td>-1.0</td><td>50.00</td><td>50.15</td><td>216.67</td></tr><tr><td>99.41</td><td>-1.0</td><td>50.00</td><td>50.15</td><td>216.67</td></tr><tr><td>99.35</td><td>-1.0</td><td>50.00</td><td>47.74</td><td>220.14</td></tr><tr><td>98.45</td><td>-0.1</td><td>50.00</td><td>5.31</td><td>282.60</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>2.98</td><td>286.07</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>2.98</td><td>286.07</td></tr><tr><td>98.35</td><td>0.0</td><td>50.00</td><td>0.65</td><td>289.54</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-8.69</td><td>303.42</td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-11.02</td><td>306.89</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05320251 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 176.93 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 50.67 \text{ kN/m}$ ($E_{ah,k} = 288.26 \text{ kN/m}$) $B_{v,k} = 97.72$ Summe $V_{,k} = 129.87 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.52</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}/\text{m} \Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.10 / 1.40 = 173.64 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1038.69 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 58.27 + 0.00 = 270.58 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 270.58 / 1038.69 = 0.26$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.36	-2.0	50.00	97.67	150.74	99.46	-1.1	50.00	52.56	213.20	99.41	-1.0	50.00	50.15	216.67	99.41	-1.0	50.00	50.15	216.67	99.35	-1.0	50.00	47.74	220.14	98.45	-0.1	50.00	5.31	282.60	98.40	-0.1	50.00	2.98	286.07	98.40	-0.1	50.00	2.98	286.07	98.35	0.0	50.00	0.65	289.54	98.15	0.2	50.00	-8.69	303.42	98.10	0.2	50.00	-11.02	306.89	von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.52	0.00	S2: Auelehm	102.52	98.10	55.00	s3: Flussskies, -sand
100.36	-2.0	50.00	97.67	150.74																																																																	
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102.55	102.52	0.00	S2: Auelehm																																																																		
102.52	98.10	55.00	s3: Flussskies, -sand																																																																		
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Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2117																																																																			
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																				

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 13_BS 7_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.50 1.00 0.29 0.28 0.55 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.50 107.45 107.45 107.45 105.93 105.26 nein Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 102.52 5.000 5.000 102.52 80.00 50.000 50.000</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/18
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																											
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																											
<div>Ausnutzungsgrad $\mu_{ue} = 308.678 / 391.590 = 0.788$ Bettungslager $B_{h,d} = 308.678 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 391.590 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>$N_{d'}$</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-116.41</td><td>-100.87</td><td>-100.87</td><td>-8.08</td><td>6.900E+4</td><td>2.100E+7</td><td>-128.61</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>$N_{d'}$</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-8.5</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.0</td><td>0.1</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.2</td><td>0.1</td><td>-116.41</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 7\Rechtes Ufer\10_BS 7_LF1.1 (ohne Lasten).vrb eingelesen.</div> <table><tr><th>Anker/Steife</th><th>Tiefe</th><th>Vorverformung</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0074</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.45</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.52</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.45</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>106.450</td><td>106.335</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>106.335</td><td>105.925</td><td>32.449</td><td>32.449</td><td>0.00</td></tr><tr><td>105.925</td><td>105.500</td><td>32.449</td><td>32.449</td><td>0.00</td></tr></table>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-116.41	-100.87	-100.87	-8.08	6.900E+4	2.100E+7	-128.61	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.5	0.0	-116.41	0.00	0.00	-0.90	106.95	-8.6	0.0	-116.41	0.00	0.00	-0.90	106.95	-8.6	0.0	-116.41	0.00	0.00	-0.80	106.95	-8.8	0.0	-116.41	0.00	0.00	-0.70	106.95	-9.0	0.0	-116.41	0.00	0.00	-0.60	106.95	-9.1	0.0	-116.41	0.00	0.00	-0.50	106.95	-9.3	0.0	-116.41	0.00	0.00	-0.40	106.95	-9.5	0.0	-116.41	0.00	0.00	-0.30	106.95	-9.6	0.0	-116.41	0.00	0.00	-0.20	106.95	-9.8	0.0	-116.41	0.00	0.00	-0.10	106.95	-10.0	0.1	-116.41	0.00	0.00	0.00	106.95	-10.2	0.1	-116.41	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0074	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	0.390	0.461	30.000	10.00	57.80	0.179	2	102.52	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	32.449	32.449	0.00	107.448	106.950	32.449	32.449	0.00	106.950	106.886	32.449	32.449	0.00	106.886	106.450	32.449	32.449	0.00	106.450	106.335	32.449	32.449	0.00	106.335	105.925	32.449	32.449	0.00	105.925	105.500	32.449	32.449	0.00	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>		Seite Anlage G2/19
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<table><tr><td>105.500</td><td>105.450</td><td>32.449</td><td>32.449</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.403</td><td>32.449</td><td>32.449</td><td>0.50</td><td>0.97</td></tr><tr><td>105.403</td><td>105.261</td><td>32.449</td><td>32.449</td><td>0.97</td><td>2.39</td></tr><tr><td>105.261</td><td>105.000</td><td>32.449</td><td>32.449</td><td>2.39</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>27.041</td><td>27.041</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.350</td><td>27.041</td><td>27.041</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>103.400</td><td>27.041</td><td>27.041</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.550</td><td>27.041</td><td>27.041</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.520</td><td>43.990</td><td>44.118</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.420</td><td>32.618</td><td>33.030</td><td>5.00</td><td>5.00</td></tr><tr><td>102.420</td><td>101.817</td><td>33.030</td><td>35.503</td><td>5.00</td><td>5.00</td></tr><tr><td>101.817</td><td>101.415</td><td>35.503</td><td>37.152</td><td>5.00</td><td>5.00</td></tr><tr><td>101.415</td><td>100.410</td><td>37.152</td><td>41.273</td><td>5.00</td><td>5.00</td></tr><tr><td>100.410</td><td>99.405</td><td>41.273</td><td>45.395</td><td>5.00</td><td>5.00</td></tr><tr><td>99.405</td><td>98.400</td><td>45.395</td><td>49.516</td><td>5.00</td><td>5.00</td></tr><tr><td>98.400</td><td>98.099</td><td>49.516</td><td>50.752</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.752</td><td>124.986</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgH</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-7.22</td><td>-7.70</td></tr><tr><td>102.52</td><td>102.42</td><td>-0.94</td><td>-5.21</td></tr><tr><td>102.42</td><td>101.82</td><td>-5.21</td><td>-30.84</td></tr><tr><td>101.82</td><td>101.41</td><td>-30.84</td><td>-47.92</td></tr><tr><td>101.41</td><td>100.41</td><td>-47.92</td><td>-90.63</td></tr><tr><td>100.41</td><td>99.41</td><td>-90.63</td><td>-133.34</td></tr><tr><td>99.41</td><td>98.40</td><td>-133.34</td><td>-176.04</td></tr><tr><td>98.40</td><td>98.10</td><td>-176.04</td><td>-188.86</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.86</td><td>-958.09</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-17.7</td><td>-18.7</td><td>-4.7</td><td>-116.4</td></tr><tr><td>106.95</td><td>-17.7</td><td>97.8</td><td>-4.7</td><td></td></tr><tr><td>106.89</td><td>-19.9</td><td>95.4</td><td>1.5</td><td></td></tr><tr><td>106.45</td><td>-35.4</td><td>79.1</td><td>39.5</td><td></td></tr><tr><td>106.34</td><td>-39.4</td><td>74.8</td><td>48.4</td><td></td></tr><tr><td>105.93</td><td>-53.9</td><td>59.5</td><td>75.9</td><td></td></tr><tr><td>105.50</td><td>-68.9</td><td>43.6</td><td>97.8</td><td></td></tr><tr><td>105.45</td><td>-70.7</td><td>41.8</td><td>100.0</td><td></td></tr><tr><td>105.40</td><td>-72.2</td><td>40.0</td><td>101.9</td><td></td></tr><tr><td>105.26</td><td>-76.7</td><td>34.4</td><td>107.2</td><td></td></tr><tr><td>105.00</td><td>-85.0</td><td>23.5</td><td>114.8</td><td></td></tr><tr><td>104.40</td><td>-103.1</td><td>1.2</td><td>122.2</td><td></td></tr><tr><td>104.35</td><td>-104.6</td><td>-0.6</td><td>122.2</td><td></td></tr><tr><td>103.40</td><td>-133.2</td><td>-35.9</td><td>104.8</td><td></td></tr><tr><td>102.55</td><td>-158.7</td><td>-67.4</td><td>61.0</td><td></td></tr><tr><td>102.52</td><td>-159.6</td><td>-69.1</td><td>58.9</td><td></td></tr><tr><td>102.42</td><td>-161.7</td><td>-73.1</td><td>51.8</td><td></td></tr><tr><td>101.82</td><td>-167.3</td><td>-81.5</td><td>3.8</td><td></td></tr><tr><td>101.41</td><td>-164.7</td><td>-72.1</td><td>-27.4</td><td></td></tr></table>								105.500	105.450	32.449	32.449	0.00	0.50	105.450	105.403	32.449	32.449	0.50	0.97	105.403	105.261	32.449	32.449	0.97	2.39	105.261	105.000	32.449	32.449	2.39	5.00	105.000	104.400	27.041	27.041	5.00	5.00	104.400	104.350	27.041	27.041	5.00	5.00	104.350	103.400	27.041	27.041	5.00	5.00	103.400	102.550	27.041	27.041	5.00	5.00	102.550	102.520	43.990	44.118	5.00	5.00	102.520	102.420	32.618	33.030	5.00	5.00	102.420	101.817	33.030	35.503	5.00	5.00	101.817	101.415	35.503	37.152	5.00	5.00	101.415	100.410	37.152	41.273	5.00	5.00	100.410	99.405	41.273	45.395	5.00	5.00	99.405	98.400	45.395	49.516	5.00	5.00	98.400	98.099	49.516	50.752	5.00	5.00	98.099	80.000	50.752	124.986	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgH	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.52	-7.22	-7.70	102.52	102.42	-0.94	-5.21	102.42	101.82	-5.21	-30.84	101.82	101.41	-30.84	-47.92	101.41	100.41	-47.92	-90.63	100.41	99.41	-90.63	-133.34	99.41	98.40	-133.34	-176.04	98.40	98.10	-176.04	-188.86	98.10	80.00	-188.86	-958.09	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-17.7	-18.7	-4.7	-116.4	106.95	-17.7	97.8	-4.7		106.89	-19.9	95.4	1.5		106.45	-35.4	79.1	39.5		106.34	-39.4	74.8	48.4		105.93	-53.9	59.5	75.9		105.50	-68.9	43.6	97.8		105.45	-70.7	41.8	100.0		105.40	-72.2	40.0	101.9		105.26	-76.7	34.4	107.2		105.00	-85.0	23.5	114.8		104.40	-103.1	1.2	122.2		104.35	-104.6	-0.6	122.2		103.40	-133.2	-35.9	104.8		102.55	-158.7	-67.4	61.0		102.52	-159.6	-69.1	58.9		102.42	-161.7	-73.1	51.8		101.82	-167.3	-81.5	3.8		101.41	-164.7	-72.1	-27.4	
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig				
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024	
<div><div><div><div>100.41</div><div>-137.7</div><div>-0.2</div><div>-68.3</div><div></div></div><div><div>99.41</div><div>-120.1</div><div>43.6</div><div>-40.6</div><div></div></div><div><div>98.40</div><div>-127.3</div><div>19.9</div><div>-3.2</div><div></div></div><div><div>98.10</div><div>-133.2</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.4</div><div>-16.2</div><div>-4.1</div><div>-100.9</div></div><div><div>106.95</div><div>-15.4</div><div>84.6</div><div>-4.1</div><div></div></div><div><div>106.89</div><div>-17.3</div><div>82.6</div><div>1.3</div><div></div></div><div><div>106.45</div><div>-30.7</div><div>68.4</div><div>34.2</div><div></div></div><div><div>106.34</div><div>-34.3</div><div>64.7</div><div>41.8</div><div></div></div><div><div>105.93</div><div>-46.9</div><div>51.4</div><div>65.7</div><div></div></div><div><div>105.50</div><div>-59.9</div><div>37.6</div><div>84.6</div><div></div></div><div><div>105.45</div><div>-61.5</div><div>36.0</div><div>86.4</div><div></div></div><div><div>105.40</div><div>-62.8</div><div>34.4</div><div>88.1</div><div></div></div><div><div>105.26</div><div>-66.7</div><div>29.6</div><div>92.6</div><div></div></div><div><div>105.00</div><div>-73.9</div><div>20.1</div><div>99.1</div><div></div></div><div><div>104.40</div><div>-89.6</div><div>0.9</div><div>105.4</div><div></div></div><div><div>104.35</div><div>-90.9</div><div>-0.7</div><div>105.4</div><div></div></div><div><div>103.40</div><div>-115.8</div><div>-31.1</div><div>90.3</div><div></div></div><div><div>102.55</div><div>-138.0</div><div>-58.4</div><div>52.2</div><div></div></div><div><div>102.52</div><div>-138.9</div><div>-59.8</div><div>50.5</div><div></div></div><div><div>102.42</div><div>-140.7</div><div>-63.3</div><div>44.3</div><div></div></div><div><div>101.82</div><div>-145.5</div><div>-70.5</div><div>2.8</div><div></div></div><div><div>101.41</div><div>-143.3</div><div>-62.3</div><div>-24.3</div><div></div></div><div><div>100.41</div><div>-119.8</div><div>0.1</div><div>-59.5</div><div></div></div><div><div>99.41</div><div>-104.5</div><div>38.0</div><div>-35.3</div><div></div></div><div><div>98.40</div><div>-110.7</div><div>17.3</div><div>-2.7</div><div></div></div><div><div>98.10</div><div>-115.9</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.4</div><div>-16.2</div><div>-4.1</div><div>-100.9</div></div><div><div>106.95</div><div>-15.4</div><div>84.6</div><div>-4.1</div><div></div></div><div><div>106.89</div><div>-17.3</div><div>82.6</div><div>1.3</div><div></div></div><div><div>106.45</div><div>-30.7</div><div>68.4</div><div>34.2</div><div></div></div><div><div>106.34</div><div>-34.3</div><div>64.7</div><div>41.8</div><div></div></div><div><div>105.93</div><div>-46.9</div><div>51.4</div><div>65.7</div><div></div></div><div><div>105.50</div><div>-59.9</div><div>37.6</div><div>84.6</div><div></div></div><div><div>105.45</div><div>-61.5</div><div>36.0</div><div>86.4</div><div></div></div><div><div>105.40</div><div>-62.8</div><div>34.4</div><div>88.1</div><div></div></div><div><div>105.26</div><div>-66.7</div><div>29.6</div><div>92.6</div><div></div></div><div><div>105.00</div><div>-73.9</div><div>20.1</div><div>99.1</div><div></div></div><div><div>104.40</div><div>-89.6</div><div>0.9</div><div>105.4</div><div></div></div><div><div>104.35</div><div>-90.9</div><div>-0.7</div><div>105.4</div><div></div></div><div><div>103.40</div><div>-115.8</div><div>-31.1</div><div>90.3</div><div></div></div><div><div>102.55</div><div>-138.0</div><div>-58.4</div><div>52.2</div><div></div></div><div><div>102.52</div><div>-138.9</div><div>-59.8</div><div>50.5</div><div></div></div><div><div>102.42</div><div>-140.7</div><div>-63.3</div><div>44.3</div><div></div></div><div><div>101.82</div><div>-145.5</div><div>-70.5</div><div>2.8</div><div></div></div><div><div>101.41</div><div>-143.3</div><div>-62.3</div><div>-24.3</div><div></div></div><div><div>100.41</div><div>-119.8</div><div>0.1</div><div>-59.5</div><div></div></div><div><div>99.41</div><div>-104.5</div><div>38.0</div><div>-35.3</div><div></div></div><div><div>98.40</div><div>-110.7</div><div>17.3</div><div>-2.7</div><div></div></div><div><div>98.10</div><div>-115.9</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div>						
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Kapitel: 4 LF 2.2 (BS-T, mit Lasten)					Archiv Nr.:	
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025			

Statisch geprüft

21.06.2024

für

Standssicherheit

Dipl.-Ing. A. Forner



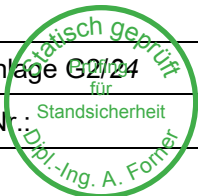
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>e_{ph,k}</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.95</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.93</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.93</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.88</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.31</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.21</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr></table>						106.34	0.0	0.0	0.0	105.93	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.40	0.0	0.0	0.0	105.26	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	104.35	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.42	0.0	0.0	0.0	101.82	0.0	0.0	0.0	101.41	0.0	0.0	0.0	100.41	0.0	0.0	0.0	99.41	0.0	0.0	0.0	98.40	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	e _{ph,k}	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.1	-	-	-	107.45	-9.1	-	-	-	107.45	-9.1	-	-	-	107.40	-9.1	-	-	-	107.00	-8.9	-	-	-	106.95	-8.8	-	-	-	106.95	-8.8	-	-	-	106.89	-8.8	-	-	-	106.89	-8.8	-	-	-	106.84	-8.7	-	-	-	106.50	-8.5	-	-	-	106.45	-8.5	-	-	-	106.45	-8.5	-	-	-	106.39	-8.5	-	-	-	106.39	-8.5	-	-	-	106.34	-8.4	-	-	-	106.34	-8.4	-	-	-	106.28	-8.4	-	-	-	105.95	-8.2	-	-	-	105.93	-8.1	-	-	-	105.93	-8.1	-	-	-	105.88	-8.1	-	-	-	105.55	-7.9	-	-	-	105.50	-7.8	-	-	-	105.50	-7.8	-	-	-	105.45	-7.8	-	-	-	105.45	-7.8	-	-	-	105.40	-7.8	-	-	-	105.40	-7.8	-	-	-	105.36	-7.7	-	-	-	105.31	-7.7	-	-	-	105.26	-7.7	-	-	-	105.26	-7.7	-	-	-	105.21	-7.6	-	-	-	105.05	-7.5	-	-	-	105.00	-7.4	-	-	-	105.00	-7.4	-	-	-	104.95	-7.4	-	-	-	104.45	-7.0	-	-	-	104.40	-6.9	-	-	-	104.40	-6.9	-	-	-	104.35	-6.9	-	-	-	104.35	-6.9	-	-	-	104.30	-6.8	-	-	-	103.45	-5.9	-	-	-	103.40	-5.9	-	-	-	103.40	-5.9	-	-	-
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statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.35 -5.8 - - - 102.60 -5.0 - - - 102.55 -4.9 0.00 0.00 0.00 102.55 -4.9 0.00 0.00 11.73 102.52 -4.9 0.00 0.00 12.51 102.52 -4.9 0.31 1.53 1.53 102.47 -4.8 0.31 1.51 5.00 102.47 -4.8 1.04 5.00 5.00 102.42 -4.7 1.04 4.94 8.47 102.42 -4.7 1.79 8.47 8.47 102.37 -4.7 1.79 8.36 11.94 101.87 -4.1 11.49 46.64 46.64 101.82 -4.0 11.49 45.92 50.11 101.82 -4.0 12.53 50.11 50.11 101.77 -3.9 12.53 49.33 53.58 101.46 -3.6 20.90 74.40 74.40 101.41 -3.5 20.90 73.10 77.87 101.41 -3.5 22.27 77.87 77.87 101.36 -3.4 22.27 76.49 81.34 100.46 -2.3 50.00 117.28 143.80 100.41 -2.3 50.00 114.36 147.27 100.41 -2.3 50.00 114.36 147.27 100.36 -2.2 50.00 111.46 150.74 99.46 -1.2 50.00 61.18 213.20 99.41 -1.2 50.00 58.48 216.67 99.41 -1.2 50.00 58.48 216.67 99.35 -1.1 50.00 55.79 220.14 98.45 -0.2 50.00 8.19 282.60 98.40 -0.1 50.00 5.57 286.07 98.40 -0.1 50.00 5.57 286.07 98.35 -0.1 50.00 2.95 289.54 98.15 0.2 50.00 -7.53 303.42 98.10 0.2 50.00 -10.15 306.89 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.05974321 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe t_g = 4.45 m Profillänge = 9.35 m</p> </div> </div>		
Schnitt:	Anlage G2 Schnitt 7R	Seite Anlage G2/23
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}$ $G_k = 176.93 \text{ kN/m}$ $G'_k = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 58.07 \text{ kN/m}$ ($E_{ah,k} = 331.37 \text{ kN/m}$) $B_{v,k} = 106.23$ Summe $V_k = 128.77 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.52</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m $\implies R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.10 / 1.40 = 173.64 \text{ kN/m}$ $R_d = R_{b,d} + R_{s1,d} = 1038.69 \text{ kN/m}$</p> <p>Einwirkungen $V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 66.78 + 0.00 = 279.10 \text{ kN/m}$ $\implies \mu = V_d / R_d = 279.10 / 1038.69 = 0.27$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.52	0.00	S2: Auelehm	102.52	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm											
102.52	98.10	55.00	s3: Flussskies, -sand											
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/24												
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.52 5.000 5.000</div> <div>102.52 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 170.171 / 273.772 = 0.622$</div> <div>Bettungslager $B_{h,d} = 170.171 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 273.772 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge N,d N(g+q+w),k N(g+w),k Nw,k EA EI N,d'</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -339.89 -283.57 -205.30 -49.07 3.900E+7 2.100E+7 -379.16 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y wx,d wy,d N,d Q,d M,d</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-7.47 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-7.47 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-6.64 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-5.81 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-4.98 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-4.15 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-3.32 103.72 -6.7 0.0 -340.29 0.00 0.00</div> <div>-2.49 103.72 -6.7 0.1 -340.29 0.00 0.00</div> <div>-1.66 103.72 -6.7 0.1 -340.29 0.00 0.00</div> <div>-0.83 103.72 -6.7 0.1 -340.29 0.00 0.00</div> <div>0.00 103.72 -6.7 0.1 -340.29 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0058</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ c(pas),k c(akt),k d(p)/ϕ_i d(a)/ϕ_i q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.45 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.52 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach $\phi_{i,k}$ delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.45 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.52 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.450 108.448 0.000 14.416 0.00 0.00</div> <div>108.448 108.444 14.416 19.528 0.00 0.00</div> <div>108.444 107.450 19.528 26.888 0.00 0.00</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/26
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 26
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																				
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																				
<table><tr><td>107.450</td><td>106.450</td><td>26.888</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.394</td><td>34.292</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.394</td><td>105.500</td><td>34.710</td><td>25.964</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.487</td><td>25.964</td><td>25.790</td><td>0.00</td><td>0.13</td></tr><tr><td>105.487</td><td>105.450</td><td>25.790</td><td>25.933</td><td>0.13</td><td>0.50</td></tr><tr><td>105.450</td><td>105.400</td><td>31.651</td><td>31.863</td><td>0.50</td><td>1.00</td></tr><tr><td>105.400</td><td>104.400</td><td>31.863</td><td>36.118</td><td>1.00</td><td>11.00</td></tr><tr><td>104.400</td><td>103.720</td><td>36.118</td><td>39.012</td><td>11.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.400</td><td>39.012</td><td>40.373</td><td>17.80</td><td>21.00</td></tr><tr><td>103.400</td><td>102.550</td><td>40.373</td><td>43.990</td><td>21.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.520</td><td>43.990</td><td>44.118</td><td>0.00</td><td>0.00</td></tr><tr><td>102.520</td><td>102.420</td><td>32.618</td><td>33.030</td><td>0.00</td><td>0.00</td></tr><tr><td>102.420</td><td>101.415</td><td>33.030</td><td>37.152</td><td>0.00</td><td>0.00</td></tr><tr><td>101.415</td><td>100.410</td><td>37.152</td><td>41.273</td><td>0.00</td><td>0.00</td></tr><tr><td>100.410</td><td>99.405</td><td>41.273</td><td>45.395</td><td>0.00</td><td>0.00</td></tr><tr><td>99.405</td><td>98.400</td><td>45.395</td><td>49.516</td><td>0.00</td><td>0.00</td></tr><tr><td>98.400</td><td>98.099</td><td>49.516</td><td>50.752</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.752</td><td>124.986</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-7.22</td><td>-7.70</td></tr><tr><td>102.52</td><td>102.42</td><td>-0.94</td><td>-5.21</td></tr><tr><td>102.42</td><td>101.41</td><td>-5.21</td><td>-47.92</td></tr><tr><td>101.41</td><td>100.41</td><td>-47.92</td><td>-90.63</td></tr><tr><td>100.41</td><td>99.41</td><td>-90.63</td><td>-133.34</td></tr><tr><td>99.41</td><td>98.40</td><td>-133.34</td><td>-176.04</td></tr><tr><td>98.40</td><td>98.10</td><td>-176.04</td><td>-188.86</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.86</td><td>-958.09</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.45</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.44</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-83.9</td><td>-29.0</td><td>-46.7</td><td></td></tr><tr><td>106.45</td><td>-119.3</td><td>-66.5</td><td>-93.7</td><td></td></tr><tr><td>106.39</td><td>-121.4</td><td>-68.8</td><td>-97.6</td><td></td></tr><tr><td>105.50</td><td>-152.6</td><td>-101.1</td><td>-174.3</td><td></td></tr><tr><td>105.49</td><td>-153.0</td><td>-101.5</td><td>-175.6</td><td></td></tr><tr><td>105.45</td><td>-154.2</td><td>-102.6</td><td>-179.4</td><td></td></tr><tr><td>105.40</td><td>-155.8</td><td>-104.5</td><td>-184.6</td><td></td></tr><tr><td>104.40</td><td>-188.1</td><td>-150.7</td><td>-310.8</td><td></td></tr><tr><td>103.72</td><td>-210.7</td><td>-191.9</td><td>-426.8</td><td>-340.3</td></tr><tr><td>103.72</td><td>-210.7</td><td>148.4</td><td>-426.8</td><td></td></tr><tr><td>103.40</td><td>-221.6</td><td>126.4</td><td>-382.8</td><td></td></tr><tr><td>102.55</td><td>-251.2</td><td>59.4</td><td>-303.0</td><td></td></tr><tr><td>102.52</td><td>-252.1</td><td>57.9</td><td>-301.2</td><td></td></tr><tr><td>102.42</td><td>-254.1</td><td>54.4</td><td>-295.6</td><td></td></tr><tr><td>101.41</td><td>-257.5</td><td>60.4</td><td>-244.0</td><td></td></tr><tr><td>100.41</td><td>-246.0</td><td>98.7</td><td>-160.4</td><td></td></tr><tr><td>99.41</td><td>-253.2</td><td>85.4</td><td>-63.7</td><td></td></tr></table>								107.450	106.450	26.888	34.292	0.00	0.00	106.450	106.394	34.292	34.710	0.00	0.00	106.394	105.500	34.710	25.964	0.00	0.00	105.500	105.487	25.964	25.790	0.00	0.13	105.487	105.450	25.790	25.933	0.13	0.50	105.450	105.400	31.651	31.863	0.50	1.00	105.400	104.400	31.863	36.118	1.00	11.00	104.400	103.720	36.118	39.012	11.00	17.80	103.720	103.400	39.012	40.373	17.80	21.00	103.400	102.550	40.373	43.990	21.00	29.50	102.550	102.520	43.990	44.118	0.00	0.00	102.520	102.420	32.618	33.030	0.00	0.00	102.420	101.415	33.030	37.152	0.00	0.00	101.415	100.410	37.152	41.273	0.00	0.00	100.410	99.405	41.273	45.395	0.00	0.00	99.405	98.400	45.395	49.516	0.00	0.00	98.400	98.099	49.516	50.752	0.00	0.00	98.099	80.000	50.752	124.986	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.52	-7.22	-7.70	102.52	102.42	-0.94	-5.21	102.42	101.41	-5.21	-47.92	101.41	100.41	-47.92	-90.63	100.41	99.41	-90.63	-133.34	99.41	98.40	-133.34	-176.04	98.40	98.10	-176.04	-188.86	98.10	80.00	-188.86	-958.09	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.45	0.0	0.0	0.0		108.45	-0.1	0.0	0.0		108.44	-0.2	-0.1	0.0		107.45	-32.3	-29.0	-13.7		107.45	-83.9	-29.0	-46.7		106.45	-119.3	-66.5	-93.7		106.39	-121.4	-68.8	-97.6		105.50	-152.6	-101.1	-174.3		105.49	-153.0	-101.5	-175.6		105.45	-154.2	-102.6	-179.4		105.40	-155.8	-104.5	-184.6		104.40	-188.1	-150.7	-310.8		103.72	-210.7	-191.9	-426.8	-340.3	103.72	-210.7	148.4	-426.8		103.40	-221.6	126.4	-382.8		102.55	-251.2	59.4	-303.0		102.52	-252.1	57.9	-301.2		102.42	-254.1	54.4	-295.6		101.41	-257.5	60.4	-244.0		100.41	-246.0	98.7	-160.4		99.41	-253.2	85.4	-63.7	
107.450	106.450	26.888	34.292	0.00	0.00																																																																																																																																																																																																																																																																																																																					
106.450	106.394	34.292	34.710	0.00	0.00																																																																																																																																																																																																																																																																																																																					
106.394	105.500	34.710	25.964	0.00	0.00																																																																																																																																																																																																																																																																																																																					
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105.487	105.450	25.790	25.933	0.13	0.50																																																																																																																																																																																																																																																																																																																					
105.450	105.400	31.651	31.863	0.50	1.00																																																																																																																																																																																																																																																																																																																					
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99.405	98.400	45.395	49.516	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.400	98.099	49.516	50.752	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.099	80.000	50.752	124.986	0.00	0.00																																																																																																																																																																																																																																																																																																																					
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Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):					
Auftraggeber:		Stadtverwaltung Leipzig								
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024					
<div><div><div><div>98.40</div><div>-271.0</div><div>26.2</div><div>-4.0</div></div><div>98.10</div><div>-274.1</div><div>0.0</div><div>0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.44</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-27.4</div><div>-23.1</div><div>-10.9</div><div></div></div><div><div>107.45</div><div>-70.4</div><div>-23.1</div><div>-38.4</div><div></div></div><div><div>106.45</div><div>-100.4</div><div>-53.7</div><div>-76.3</div><div></div></div><div><div>106.39</div><div>-102.2</div><div>-55.7</div><div>-79.4</div><div></div></div><div><div>105.50</div><div>-129.0</div><div>-82.8</div><div>-141.8</div><div></div></div><div><div>105.49</div><div>-129.3</div><div>-83.1</div><div>-142.9</div><div></div></div><div><div>105.45</div><div>-130.4</div><div>-84.1</div><div>-146.0</div><div></div></div><div><div>105.40</div><div>-131.8</div><div>-85.7</div><div>-150.2</div><div></div></div><div><div>104.40</div><div>-159.8</div><div>-125.7</div><div>-254.8</div><div></div></div><div><div>103.72</div><div>-179.5</div><div>-161.1</div><div>-351.9</div><div>-283.6</div></div><div><div>103.72</div><div>-179.5</div><div>122.5</div><div>-351.9</div><div></div></div><div><div>103.40</div><div>-189.0</div><div>103.6</div><div>-315.7</div><div></div></div><div><div>102.55</div><div>-214.7</div><div>46.3</div><div>-251.2</div><div></div></div><div><div>102.52</div><div>-215.5</div><div>45.0</div><div>-249.9</div><div></div></div><div><div>102.42</div><div>-217.3</div><div>42.0</div><div>-245.5</div><div></div></div><div><div>101.41</div><div>-220.0</div><div>47.8</div><div>-205.8</div><div></div></div><div><div>100.41</div><div>-209.3</div><div>83.1</div><div>-136.8</div><div></div></div><div><div>99.41</div><div>-215.0</div><div>73.0</div><div>-54.7</div><div></div></div><div><div>98.40</div><div>-230.5</div><div>22.6</div><div>-3.5</div><div></div></div><div><div>98.10</div><div>-233.3</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.44</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-21.7</div><div>-7.6</div><div>-3.2</div><div></div></div><div><div>107.45</div><div>-64.7</div><div>-7.6</div><div>-30.7</div><div></div></div><div><div>106.45</div><div>-89.1</div><div>-22.6</div><div>-45.1</div><div></div></div><div><div>106.39</div><div>-90.5</div><div>-23.7</div><div>-46.4</div><div></div></div><div><div>105.50</div><div>-114.7</div><div>-43.7</div><div>-76.1</div><div></div></div><div><div>105.49</div><div>-115.1</div><div>-44.0</div><div>-76.7</div><div></div></div><div><div>105.45</div><div>-116.2</div><div>-45.0</div><div>-78.3</div><div></div></div><div><div>105.40</div><div>-117.5</div><div>-46.6</div><div>-80.6</div><div></div></div><div><div>104.40</div><div>-145.6</div><div>-86.6</div><div>-146.0</div><div></div></div><div><div>103.72</div><div>-165.3</div><div>-122.0</div><div>-216.6</div><div>-205.3</div></div><div><div>103.72</div><div>-165.3</div><div>83.4</div><div>-216.6</div><div></div></div><div><div>103.40</div><div>-174.7</div><div>64.4</div><div>-192.9</div><div></div></div><div><div>102.55</div><div>-200.4</div><div>7.1</div><div>-161.7</div><div></div></div><div><div>102.52</div><div>-201.3</div><div>5.8</div><div>-161.5</div><div></div></div><div><div>102.42</div><div>-203.1</div><div>2.9</div><div>-161.1</div><div></div></div><div><div>101.41</div><div>-203.8</div><div>13.6</div><div>-159.1</div><div></div></div><div><div>100.41</div><div>-187.6</div><div>62.8</div><div>-117.6</div><div></div></div><div><div>99.41</div><div>-188.7</div><div>64.3</div><div>-49.8</div><div></div></div><div><div>98.40</div><div>-203.7</div><div>21.2</div><div>-3.3</div><div></div></div><div><div>98.10</div><div>-207.0</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.44</div><div>0.0</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-5.7</div><div>-15.6</div><div>-7.8</div><div></div></div><div><div>106.45</div><div>-11.3</div><div>-31.2</div><div>-31.1</div><div></div></div><div><div>106.39</div><div>-11.7</div><div>-32.0</div><div>-32.9</div><div></div></div><div><div>105.50</div><div>-14.2</div><div>-39.1</div><div>-65.7</div><div></div></div><div><div>105.49</div><div>-14.2</div><div>-39.1</div><div>-66.2</div><div></div></div><div><div>105.45</div><div>-14.2</div><div>-39.1</div><div>-67.7</div><div></div></div><div><div>105.40</div><div>-14.2</div><div>-39.1</div><div>-69.6</div><div></div></div><div><div>104.40</div><div>-14.2</div><div>-39.1</div><div>-108.7</div><div></div></div></div></div>							Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/28	
Kapitel:		5 LF 3 (BS-T, mit Lasten)			Archiv Nr.:					
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025					

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig				
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024	
<div><div><div>103.72-14.2-39.1-135.3-86.2</div><div>103.72-14.239.2-135.3</div><div>103.40-14.239.2-122.8</div><div>102.55-14.239.2-89.5</div><div>102.52-14.239.2-88.3</div><div>102.42-14.239.1-84.4</div><div>101.41-16.234.2-46.6</div><div>100.41-21.820.3-19.2</div><div>99.41-26.38.8-5.0</div><div>98.40-26.91.4-0.2</div><div>98.10-26.30.00.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>108.45-19.6-- --</div><div>108.45-19.6-- --</div><div>108.45-19.6-- --</div><div>108.44-19.6-- --</div><div>108.44-19.6-- --</div><div>108.39-19.5-- --</div><div>107.50-16.6-- --</div><div>107.45-16.5-- --</div><div>107.45-16.5-- --</div><div>107.40-16.3-- --</div><div>106.50-13.5-- --</div><div>106.45-13.3-- --</div><div>106.45-13.3-- --</div><div>106.39-13.2-- --</div><div>106.39-13.2-- --</div><div>106.34-13.0-- --</div><div>105.55-10.6-- --</div><div>105.50-10.5-- --</div><div>105.50-10.5-- --</div><div>105.49-10.5-- --</div><div>105.49-10.5-- --</div><div>105.45-10.3-- --</div><div>105.45-10.3-- --</div><div>105.40-10.2-- --</div><div>105.40-10.2-- --</div><div>105.35-10.1-- --</div><div>104.45-7.6-- --</div><div>104.40-7.5-- --</div><div>104.40-7.5-- --</div><div>104.35-7.4-- --</div><div>103.77-6.0-- --</div><div>103.72-5.9-- --</div><div>103.72-5.9-- --</div><div>103.67-5.7-- --</div><div>103.45-5.3-- --</div><div>103.40-5.2-- --</div><div>103.40-5.2-- --</div><div>103.35-5.1-- --</div><div>102.60-3.7-- --</div><div>102.55-3.70.000.000.00</div><div>102.55-3.70.000.0011.73</div><div>102.52-3.60.000.0012.51</div><div>102.52-3.60.421.531.53</div><div>102.47-3.50.421.505.00</div><div>102.47-3.51.425.005.00</div><div>102.42-3.41.424.898.47</div><div>102.42-3.42.468.478.47</div><div>102.37-3.42.468.2811.94</div><div>101.46-2.134.6874.4074.40</div><div>101.41-2.134.6872.3577.87</div><div>101.41-2.137.3377.8777.87</div><div>101.36-2.037.3375.7081.34</div><div>100.46-1.150.0055.77143.80</div><div>100.41-1.150.0053.57147.27</div><div>100.41-1.150.0053.57147.27</div></div></div></div>						
Schnitt:		Anlage G2 Schnitt 7R			Seite Anlage G2/29	
Kapitel:		5 LF 3 (BS-T, mit Lasten)			Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025	

Statisch geprüft

21/29

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

100.36	-1.0	50.00	51.39	150.74
99.46	-0.3	50.00	16.26	213.20
99.41	-0.3	50.00	14.47	216.67
99.41	-0.3	50.00	14.47	216.67
99.35	-0.3	50.00	12.70	220.14
98.45	0.4	50.00	-18.03	282.60
98.40	0.4	50.00	-19.70	286.07
98.40	0.4	50.00	-19.70	286.07
98.35	0.4	50.00	-21.38	289.54
98.15	0.6	50.00	-28.07	303.42
98.10	0.6	50.00	-29.74	306.89

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.03814775$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 10.35 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{k,k} - G'_{k,k} + E_{av,k} \geq B_{v,k}$
 $G_{k,k} = 195.85$ kN/m
 $G'_{k,k} = 0.00$ kN/m
 $P_{v,k} = 43.00$ kN/m
 $E_{av,k} = 66.82$ kN/m ($E_{ah,k} = 379.39$ kN/m)
 $B_{v,k} = 60.66$
Summe $V_{k,k} = 245.02$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	102.52	0.00	S2: Auelehm
102.52	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.10 / 1.40 = 173.64$ kN/m
 $R_{d,d} = R_{b,d} + R_{s1,d} = 1038.69$ kN/m

Einwirkungen
 $V_{d,d} = G_{d,d} - G'_{k,k} + E_{av,d} + P_{v,d} = 235.02 - 0.00 + 77.91 + 51.60 = 364.53$ kN/m
 $\Rightarrow \mu = V_{d,d} / R_{d,d} = 364.53 / 1038.69 = 0.35$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage G2 Schnitt 7R	Seite Anlage G2/30
Kapitel: 5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 21040025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 15_BS 7_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.45 108.45 108.44 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -27.50 0.00 0.00 0.00 43.00 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.35 m</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/31
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.52	5.000	5.000
102.52	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 252.797 / 310.187 = 0.815$
Bettungslager $B_{h,d} = 252.797 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 310.187 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-226.58	-175.29	-175.29	-49.19	3.900E+7	2.100E+7	-223.50

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.4	0.0	-227.19	0.00	0.00
-7.47	103.72	-7.4	0.0	-227.19	0.00	0.00
-7.47	103.72	-7.4	0.0	-227.19	0.00	0.00
-6.64	103.72	-7.4	0.0	-227.19	0.00	0.00
-5.81	103.72	-7.4	0.0	-227.19	0.00	0.00
-4.98	103.72	-7.4	0.0	-227.19	0.00	0.00
-4.15	103.72	-7.4	0.0	-227.19	0.00	0.00
-3.32	103.72	-7.4	0.0	-227.19	0.00	0.00
-2.49	103.72	-7.4	0.1	-227.19	0.00	0.00
-1.66	103.72	-7.4	0.1	-227.19	0.00	0.00
-0.83	103.72	-7.4	0.1	-227.19	0.00	0.00
0.00	103.72	-7.4	0.1	-227.19	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0058

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.45	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.52	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{ah}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.45	0.390	0.461	30.000	10.00	57.80	0.179
2	102.52	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q]_k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.450	108.444	0.000	1.992	0.00
108.444	107.450	1.992	9.352	0.00
107.450	106.450	9.352	16.756	0.00

Schnitt:	Anlage G2	Schnitt 7R	Seite Anlage G2/32
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																												
<table><tr><td>106.450</td><td>105.500</td><td>16.756</td><td>23.790</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>23.790</td><td>23.985</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.400</td><td>29.148</td><td>29.360</td><td>0.50</td><td>1.00</td></tr><tr><td>105.400</td><td>104.400</td><td>29.360</td><td>33.615</td><td>1.00</td><td>11.00</td></tr><tr><td>104.400</td><td>103.720</td><td>33.615</td><td>36.509</td><td>11.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.400</td><td>36.509</td><td>37.870</td><td>17.80</td><td>21.00</td></tr><tr><td>103.400</td><td>102.550</td><td>37.870</td><td>41.487</td><td>21.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.520</td><td>41.487</td><td>41.615</td><td>0.00</td><td>0.00</td></tr><tr><td>102.520</td><td>102.420</td><td>30.835</td><td>31.247</td><td>0.00</td><td>0.00</td></tr><tr><td>102.420</td><td>102.118</td><td>31.247</td><td>32.484</td><td>0.00</td><td>0.00</td></tr><tr><td>102.118</td><td>101.415</td><td>32.484</td><td>35.368</td><td>0.00</td><td>0.00</td></tr><tr><td>101.415</td><td>100.410</td><td>35.368</td><td>39.490</td><td>0.00</td><td>0.00</td></tr><tr><td>100.410</td><td>99.405</td><td>39.490</td><td>43.611</td><td>0.00</td><td>0.00</td></tr><tr><td>99.405</td><td>98.400</td><td>43.611</td><td>47.733</td><td>0.00</td><td>0.00</td></tr><tr><td>98.400</td><td>98.099</td><td>47.733</td><td>48.969</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>48.969</td><td>123.203</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-12.42</td><td>-12.87</td></tr><tr><td>102.52</td><td>102.42</td><td>-12.20</td><td>-16.17</td></tr><tr><td>102.42</td><td>102.12</td><td>-16.17</td><td>-28.06</td></tr><tr><td>102.12</td><td>101.41</td><td>-28.06</td><td>-55.82</td></tr><tr><td>101.41</td><td>100.41</td><td>-55.82</td><td>-95.48</td></tr><tr><td>100.41</td><td>99.41</td><td>-95.48</td><td>-135.14</td></tr><tr><td>99.41</td><td>98.40</td><td>-135.14</td><td>-174.79</td></tr><tr><td>98.40</td><td>98.10</td><td>-174.79</td><td>-186.69</td></tr><tr><td>98.10</td><td>80.00</td><td>-186.69</td><td>-900.98</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.44</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-84.8</td><td>-7.2</td><td>-39.9</td><td></td></tr><tr><td>106.45</td><td>-115.0</td><td>-23.8</td><td>-54.7</td><td></td></tr><tr><td>105.50</td><td>-146.8</td><td>-48.4</td><td>-88.3</td><td></td></tr><tr><td>105.45</td><td>-148.6</td><td>-49.9</td><td>-90.8</td><td></td></tr><tr><td>105.40</td><td>-150.3</td><td>-51.8</td><td>-93.3</td><td></td></tr><tr><td>104.40</td><td>-185.2</td><td>-100.1</td><td>-167.7</td><td></td></tr><tr><td>103.72</td><td>-209.8</td><td>-143.7</td><td>-250.1</td><td>-227.2</td></tr><tr><td>103.72</td><td>-209.8</td><td>83.5</td><td>-250.1</td><td></td></tr><tr><td>103.40</td><td>-221.5</td><td>59.9</td><td>-227.1</td><td></td></tr><tr><td>102.55</td><td>-253.6</td><td>-12.1</td><td>-205.8</td><td></td></tr><tr><td>102.52</td><td>-254.5</td><td>-13.6</td><td>-206.2</td><td></td></tr><tr><td>102.42</td><td>-255.8</td><td>-14.8</td><td>-207.6</td><td></td></tr><tr><td>102.12</td><td>-257.4</td><td>-13.0</td><td>-212.0</td><td></td></tr><tr><td>101.41</td><td>-249.1</td><td>20.0</td><td>-211.9</td><td></td></tr><tr><td>100.41</td><td>-228.7</td><td>84.0</td><td>-154.6</td><td></td></tr><tr><td>99.41</td><td>-231.6</td><td>84.2</td><td>-65.0</td><td></td></tr><tr><td>98.40</td><td>-250.9</td><td>27.5</td><td>-4.3</td><td></td></tr><tr><td>98.10</td><td>-254.6</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.450	105.500	16.756	23.790	0.00	0.00	105.500	105.450	23.790	23.985	0.00	0.50	105.450	105.400	29.148	29.360	0.50	1.00	105.400	104.400	29.360	33.615	1.00	11.00	104.400	103.720	33.615	36.509	11.00	17.80	103.720	103.400	36.509	37.870	17.80	21.00	103.400	102.550	37.870	41.487	21.00	29.50	102.550	102.520	41.487	41.615	0.00	0.00	102.520	102.420	30.835	31.247	0.00	0.00	102.420	102.118	31.247	32.484	0.00	0.00	102.118	101.415	32.484	35.368	0.00	0.00	101.415	100.410	35.368	39.490	0.00	0.00	100.410	99.405	39.490	43.611	0.00	0.00	99.405	98.400	43.611	47.733	0.00	0.00	98.400	98.099	47.733	48.969	0.00	0.00	98.099	80.000	48.969	123.203	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.52	-12.42	-12.87	102.52	102.42	-12.20	-16.17	102.42	102.12	-16.17	-28.06	102.12	101.41	-28.06	-55.82	101.41	100.41	-55.82	-95.48	100.41	99.41	-95.48	-135.14	99.41	98.40	-135.14	-174.79	98.40	98.10	-174.79	-186.69	98.10	80.00	-186.69	-900.98	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.45	0.0	0.0	0.0		108.44	-0.1	0.0	0.0		107.45	-26.7	-7.2	-2.8		107.45	-84.8	-7.2	-39.9		106.45	-115.0	-23.8	-54.7		105.50	-146.8	-48.4	-88.3		105.45	-148.6	-49.9	-90.8		105.40	-150.3	-51.8	-93.3		104.40	-185.2	-100.1	-167.7		103.72	-209.8	-143.7	-250.1	-227.2	103.72	-209.8	83.5	-250.1		103.40	-221.5	59.9	-227.1		102.55	-253.6	-12.1	-205.8		102.52	-254.5	-13.6	-206.2		102.42	-255.8	-14.8	-207.6		102.12	-257.4	-13.0	-212.0		101.41	-249.1	20.0	-211.9		100.41	-228.7	84.0	-154.6		99.41	-231.6	84.2	-65.0		98.40	-250.9	27.5	-4.3		98.10	-254.6	0.0	0.0	
106.450	105.500	16.756	23.790	0.00	0.00																																																																																																																																																																																																																																																																																																													
105.500	105.450	23.790	23.985	0.00	0.50																																																																																																																																																																																																																																																																																																													
105.450	105.400	29.148	29.360	0.50	1.00																																																																																																																																																																																																																																																																																																													
105.400	104.400	29.360	33.615	1.00	11.00																																																																																																																																																																																																																																																																																																													
104.400	103.720	33.615	36.509	11.00	17.80																																																																																																																																																																																																																																																																																																													
103.720	103.400	36.509	37.870	17.80	21.00																																																																																																																																																																																																																																																																																																													
103.400	102.550	37.870	41.487	21.00	29.50																																																																																																																																																																																																																																																																																																													
102.550	102.520	41.487	41.615	0.00	0.00																																																																																																																																																																																																																																																																																																													
102.520	102.420	30.835	31.247	0.00	0.00																																																																																																																																																																																																																																																																																																													
102.420	102.118	31.247	32.484	0.00	0.00																																																																																																																																																																																																																																																																																																													
102.118	101.415	32.484	35.368	0.00	0.00																																																																																																																																																																																																																																																																																																													
101.415	100.410	35.368	39.490	0.00	0.00																																																																																																																																																																																																																																																																																																													
100.410	99.405	39.490	43.611	0.00	0.00																																																																																																																																																																																																																																																																																																													
99.405	98.400	43.611	47.733	0.00	0.00																																																																																																																																																																																																																																																																																																													
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98.099	80.000	48.969	123.203	0.00	0.00																																																																																																																																																																																																																																																																																																													
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																															
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																															
0.00	0.00	108.45	102.55																																																																																																																																																																																																																																																																																																															
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																												
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																																												
2	102.52	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																												
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																												
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																															
103.40	102.55	0.00	0.00																																																																																																																																																																																																																																																																																																															
102.55	102.52	-12.42	-12.87																																																																																																																																																																																																																																																																																																															
102.52	102.42	-12.20	-16.17																																																																																																																																																																																																																																																																																																															
102.42	102.12	-16.17	-28.06																																																																																																																																																																																																																																																																																																															
102.12	101.41	-28.06	-55.82																																																																																																																																																																																																																																																																																																															
101.41	100.41	-55.82	-95.48																																																																																																																																																																																																																																																																																																															
100.41	99.41	-95.48	-135.14																																																																																																																																																																																																																																																																																																															
99.41	98.40	-135.14	-174.79																																																																																																																																																																																																																																																																																																															
98.40	98.10	-174.79	-186.69																																																																																																																																																																																																																																																																																																															
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[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																														
108.45	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																															
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107.45	-26.7	-7.2	-2.8																																																																																																																																																																																																																																																																																																															
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105.50	-146.8	-48.4	-88.3																																																																																																																																																																																																																																																																																																															
105.45	-148.6	-49.9	-90.8																																																																																																																																																																																																																																																																																																															
105.40	-150.3	-51.8	-93.3																																																																																																																																																																																																																																																																																																															
104.40	-185.2	-100.1	-167.7																																																																																																																																																																																																																																																																																																															
103.72	-209.8	-143.7	-250.1	-227.2																																																																																																																																																																																																																																																																																																														
103.72	-209.8	83.5	-250.1																																																																																																																																																																																																																																																																																																															
103.40	-221.5	59.9	-227.1																																																																																																																																																																																																																																																																																																															
102.55	-253.6	-12.1	-205.8																																																																																																																																																																																																																																																																																																															
102.52	-254.5	-13.6	-206.2																																																																																																																																																																																																																																																																																																															
102.42	-255.8	-14.8	-207.6																																																																																																																																																																																																																																																																																																															
102.12	-257.4	-13.0	-212.0																																																																																																																																																																																																																																																																																																															
101.41	-249.1	20.0	-211.9																																																																																																																																																																																																																																																																																																															
100.41	-228.7	84.0	-154.6																																																																																																																																																																																																																																																																																																															
99.41	-231.6	84.2	-65.0																																																																																																																																																																																																																																																																																																															
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Dipl.-Ing. A. Forner



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kN·m²/m</div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>108.45</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.39</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.52</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>22.52</td></tr><tr><td>102.52</td><td>-3.8</td><td>5.00</td><td>19.16</td><td>21.35</td></tr><tr><td>102.47</td><td>-3.8</td><td>5.00</td><td>18.79</td><td>24.82</td></tr><tr><td>102.47</td><td>-3.8</td><td>6.61</td><td>24.82</td><td>24.82</td></tr><tr><td>102.42</td><td>-3.7</td><td>6.61</td><td>24.33</td><td>28.29</td></tr><tr><td>102.42</td><td>-3.7</td><td>7.68</td><td>28.29</td><td>28.29</td></tr><tr><td>102.37</td><td>-3.6</td><td>7.68</td><td>27.72</td><td>31.76</td></tr><tr><td>102.17</td><td>-3.3</td><td>13.74</td><td>45.64</td><td>45.64</td></tr><tr><td>102.12</td><td>-3.3</td><td>13.74</td><td>44.68</td><td>49.11</td></tr><tr><td>102.12</td><td>-3.3</td><td>15.11</td><td>49.11</td><td>49.11</td></tr><tr><td>102.07</td><td>-3.2</td><td>15.11</td><td>48.06</td><td>52.58</td></tr><tr><td>101.46</td><td>-2.4</td><td>39.22</td><td>94.23</td><td>94.22</td></tr><tr><td>101.41</td><td>-2.3</td><td>39.22</td><td>91.87</td><td>97.69</td></tr><tr><td>101.41</td><td>-2.3</td><td>41.71</td><td>97.70</td><td>97.69</td></tr><tr><td>101.36</td><td>-2.3</td><td>41.71</td><td>95.22</td><td>101.16</td></tr><tr><td>100.46</td><td>-1.3</td><td>50.00</td><td>66.28</td><td>163.62</td></tr><tr><td>100.41</td><td>-1.3</td><td>50.00</td><td>63.91</td><td>167.09</td></tr><tr><td>100.41</td><td>-1.3</td><td>50.00</td><td>63.91</td><td>167.09</td></tr><tr><td>100.36</td><td>-1.2</td><td>50.00</td><td>61.56</td><td>170.56</td></tr><tr><td>99.46</td><td>-0.5</td><td>50.00</td><td>22.89</td><td>233.02</td></tr><tr><td>99.41</td><td>-0.4</td><td>50.00</td><td>20.89</td><td>236.49</td></tr><tr><td>99.41</td><td>-0.4</td><td>50.00</td><td>20.89</td><td>236.49</td></tr><tr><td>99.35</td><td>-0.4</td><td>50.00</td><td>18.91</td><td>239.96</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-15.70</td><td>302.42</td></tr><tr><td>98.40</td><td>0.4</td><td>50.00</td><td>-17.59</td><td>305.89</td></tr><tr><td>98.40</td><td>0.4</td><td>50.00</td><td>-17.59</td><td>305.89</td></tr><tr><td>98.35</td><td>0.4</td><td>50.00</td><td>-19.48</td><td>309.36</td></tr><tr><td>98.15</td><td>0.5</td><td>50.00</td><td>-27.04</td><td>323.24</td></tr></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.45	-16.3	-	-	-	108.45	-16.3	-	-	-	108.45	-16.3	-	-	-	108.44	-16.3	-	-	-	108.44	-16.3	-	-	-	108.39	-16.2	-	-	-	107.50	-14.1	-	-	-	107.45	-14.0	-	-	-	107.45	-14.0	-	-	-	107.40	-13.9	-	-	-	106.50	-11.8	-	-	-	106.45	-11.7	-	-	-	106.45	-11.7	-	-	-	106.40	-11.5	-	-	-	105.55	-9.6	-	-	-	105.50	-9.5	-	-	-	105.50	-9.5	-	-	-	105.45	-9.4	-	-	-	105.45	-9.4	-	-	-	105.40	-9.3	-	-	-	105.40	-9.3	-	-	-	105.35	-9.2	-	-	-	104.45	-7.3	-	-	-	104.40	-7.2	-	-	-	104.40	-7.2	-	-	-	104.35	-7.1	-	-	-	103.77	-5.9	-	-	-	103.72	-5.8	-	-	-	103.72	-5.8	-	-	-	103.67	-5.7	-	-	-	103.45	-5.3	-	-	-	103.40	-5.3	-	-	-	103.40	-5.3	-	-	-	103.35	-5.2	-	-	-	102.60	-4.0	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	21.74	102.52	-3.8	0.00	0.00	22.52	102.52	-3.8	5.00	19.16	21.35	102.47	-3.8	5.00	18.79	24.82	102.47	-3.8	6.61	24.82	24.82	102.42	-3.7	6.61	24.33	28.29	102.42	-3.7	7.68	28.29	28.29	102.37	-3.6	7.68	27.72	31.76	102.17	-3.3	13.74	45.64	45.64	102.12	-3.3	13.74	44.68	49.11	102.12	-3.3	15.11	49.11	49.11	102.07	-3.2	15.11	48.06	52.58	101.46	-2.4	39.22	94.23	94.22	101.41	-2.3	39.22	91.87	97.69	101.41	-2.3	41.71	97.70	97.69	101.36	-2.3	41.71	95.22	101.16	100.46	-1.3	50.00	66.28	163.62	100.41	-1.3	50.00	63.91	167.09	100.41	-1.3	50.00	63.91	167.09	100.36	-1.2	50.00	61.56	170.56	99.46	-0.5	50.00	22.89	233.02	99.41	-0.4	50.00	20.89	236.49	99.41	-0.4	50.00	20.89	236.49	99.35	-0.4	50.00	18.91	239.96	98.45	0.3	50.00	-15.70	302.42	98.40	0.4	50.00	-17.59	305.89	98.40	0.4	50.00	-17.59	305.89	98.35	0.4	50.00	-19.48	309.36	98.15	0.5	50.00	-27.04	323.24
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102.47	-3.8	5.00	18.79	24.82																																																																																																																																																																																																																																																																																																																																																
102.47	-3.8	6.61	24.82	24.82																																																																																																																																																																																																																																																																																																																																																
102.42	-3.7	6.61	24.33	28.29																																																																																																																																																																																																																																																																																																																																																
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101.41	-2.3	39.22	91.87	97.69																																																																																																																																																																																																																																																																																																																																																
101.41	-2.3	41.71	97.70	97.69																																																																																																																																																																																																																																																																																																																																																
101.36	-2.3	41.71	95.22	101.16																																																																																																																																																																																																																																																																																																																																																
100.46	-1.3	50.00	66.28	163.62																																																																																																																																																																																																																																																																																																																																																
100.41	-1.3	50.00	63.91	167.09																																																																																																																																																																																																																																																																																																																																																
100.41	-1.3	50.00	63.91	167.09																																																																																																																																																																																																																																																																																																																																																
100.36	-1.2	50.00	61.56	170.56																																																																																																																																																																																																																																																																																																																																																
99.46	-0.5	50.00	22.89	233.02																																																																																																																																																																																																																																																																																																																																																
99.41	-0.4	50.00	20.89	236.49																																																																																																																																																																																																																																																																																																																																																
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99.35	-0.4	50.00	18.91	239.96																																																																																																																																																																																																																																																																																																																																																
98.45	0.3	50.00	-15.70	302.42																																																																																																																																																																																																																																																																																																																																																
98.40	0.4	50.00	-17.59	305.89																																																																																																																																																																																																																																																																																																																																																
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Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>98.10 0.6 50.00 -28.93 326.71</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04309985 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.35 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 195.85 kN/m G',k = 0.00 kN/m Pv,k = 43.00 kN/m Eav,k = 56.09 kN/m (Eah,k = 319.23 kN/m) Bv,k = 78.93 Summe V,k = 216.01 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.52</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 243.10 / 1.40 = 173.64 kN/m R,d = Rb,d + R,s1,d = 1038.69 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 264.40 - 0.00 + 71.51 + 58.05 = 393.96 kN/m ==> µ = V,d / R,d = 393.96 / 1038.69 = 0.38</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.52	0.00	S2: Auelehm	102.52	98.10	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm											
102.52	98.10	55.00	s3: Flussskies, -sand											
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/36												
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: <div>Statistisch geprüft für Standsicherheit Dipl.-Ing. A. Forner</div>												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 16_BS 7_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.45 108.45 108.44 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -27.50 0.00 0.00 0.00 43.00 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.35 m</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/37
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.52 5.000 5.000</div> <div>102.52 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 228.008 / 342.593 = 0.666$</div> <div>Bettungslager $B_{h,d} = 228.008 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 342.593 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge $N_{d'}$ $N(g+q+w)_k$ $N(g+w)_k$ $N_{w,k}$ EA EI $N_{d'}$</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -226.77 -195.40 -195.40 -49.20 3.900E+7 2.100E+7 -249.14 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y $w_{x,d}$ $w_{y,d}$ $N_{d'}$ $Q_{d'}$ $M_{d'}$</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-7.47 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-7.47 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-6.64 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-5.81 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-4.98 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-4.15 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-3.32 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-2.49 103.72 -6.7 0.0 -227.17 0.00 0.00</div> <div>-1.66 103.72 -6.7 0.1 -227.17 0.00 0.00</div> <div>-0.83 103.72 -6.7 0.1 -227.17 0.00 0.00</div> <div>0.00 103.72 -6.7 0.1 -227.17 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0058</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.45 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.52 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.45 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.52 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.450 108.444 0.000 3.941 0.00 0.00</div> <div>108.444 107.450 3.941 11.301 0.00 0.00</div> <div>107.450 106.450 11.301 18.705 0.00 0.00</div>					
Schnitt: Anlage G2 Schnitt 7R				Seite Anlage G2/38	
Kapitel: 7 LF 5 (BS-T, mit Lasten)				Archiv Nr. 21.06.2024	
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025			



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																												
<table><tr><td>106.450</td><td>105.500</td><td>18.705</td><td>25.738</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>25.738</td><td>25.933</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.400</td><td>31.651</td><td>31.863</td><td>0.50</td><td>1.00</td></tr><tr><td>105.400</td><td>104.400</td><td>31.863</td><td>36.118</td><td>1.00</td><td>11.00</td></tr><tr><td>104.400</td><td>103.720</td><td>36.118</td><td>39.012</td><td>11.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.400</td><td>39.012</td><td>40.373</td><td>17.80</td><td>21.00</td></tr><tr><td>103.400</td><td>102.550</td><td>40.373</td><td>43.990</td><td>21.00</td><td>29.50</td></tr><tr><td>102.550</td><td>102.520</td><td>43.990</td><td>44.118</td><td>0.00</td><td>0.00</td></tr><tr><td>102.520</td><td>102.420</td><td>32.618</td><td>33.030</td><td>0.00</td><td>0.00</td></tr><tr><td>102.420</td><td>102.118</td><td>33.030</td><td>34.267</td><td>0.00</td><td>0.00</td></tr><tr><td>102.118</td><td>101.415</td><td>34.267</td><td>37.152</td><td>0.00</td><td>0.00</td></tr><tr><td>101.415</td><td>100.410</td><td>37.152</td><td>41.273</td><td>0.00</td><td>0.00</td></tr><tr><td>100.410</td><td>99.405</td><td>41.273</td><td>45.395</td><td>0.00</td><td>0.00</td></tr><tr><td>99.405</td><td>98.400</td><td>45.395</td><td>49.516</td><td>0.00</td><td>0.00</td></tr><tr><td>98.400</td><td>98.099</td><td>49.516</td><td>50.752</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.752</td><td>124.986</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-13.38</td><td>-13.86</td></tr><tr><td>102.52</td><td>102.42</td><td>-13.14</td><td>-17.41</td></tr><tr><td>102.42</td><td>102.12</td><td>-17.41</td><td>-30.22</td></tr><tr><td>102.12</td><td>101.41</td><td>-30.22</td><td>-60.12</td></tr><tr><td>101.41</td><td>100.41</td><td>-60.12</td><td>-102.82</td></tr><tr><td>100.41</td><td>99.41</td><td>-102.82</td><td>-145.53</td></tr><tr><td>99.41</td><td>98.40</td><td>-145.53</td><td>-188.24</td></tr><tr><td>98.40</td><td>98.10</td><td>-188.24</td><td>-201.05</td></tr><tr><td>98.10</td><td>80.00</td><td>-201.05</td><td>-970.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.44</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-76.5</td><td>-8.7</td><td>-36.6</td><td></td></tr><tr><td>106.45</td><td>-104.6</td><td>-26.0</td><td>-53.3</td><td></td></tr><tr><td>105.50</td><td>-134.1</td><td>-50.3</td><td>-88.9</td><td></td></tr><tr><td>105.45</td><td>-135.7</td><td>-51.8</td><td>-91.4</td><td></td></tr><tr><td>105.40</td><td>-137.3</td><td>-53.6</td><td>-94.1</td><td></td></tr><tr><td>104.40</td><td>-169.5</td><td>-99.9</td><td>-169.4</td><td></td></tr><tr><td>103.72</td><td>-192.2</td><td>-141.0</td><td>-250.9</td><td>-227.2</td></tr><tr><td>103.72</td><td>-192.2</td><td>86.1</td><td>-250.9</td><td></td></tr><tr><td>103.40</td><td>-203.1</td><td>64.1</td><td>-226.8</td><td></td></tr><tr><td>102.55</td><td>-232.6</td><td>-2.9</td><td>-200.0</td><td></td></tr><tr><td>102.52</td><td>-233.4</td><td>-4.4</td><td>-200.1</td><td></td></tr><tr><td>102.42</td><td>-234.6</td><td>-5.7</td><td>-200.6</td><td></td></tr><tr><td>102.12</td><td>-236.1</td><td>-4.7</td><td>-202.3</td><td></td></tr><tr><td>101.41</td><td>-228.6</td><td>23.7</td><td>-197.8</td><td></td></tr><tr><td>100.41</td><td>-210.5</td><td>78.7</td><td>-141.7</td><td></td></tr><tr><td>99.41</td><td>-213.1</td><td>77.0</td><td>-59.1</td><td></td></tr><tr><td>98.40</td><td>-230.6</td><td>24.9</td><td>-3.9</td><td></td></tr><tr><td>98.10</td><td>-234.1</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.450	105.500	18.705	25.738	0.00	0.00	105.500	105.450	25.738	25.933	0.00	0.50	105.450	105.400	31.651	31.863	0.50	1.00	105.400	104.400	31.863	36.118	1.00	11.00	104.400	103.720	36.118	39.012	11.00	17.80	103.720	103.400	39.012	40.373	17.80	21.00	103.400	102.550	40.373	43.990	21.00	29.50	102.550	102.520	43.990	44.118	0.00	0.00	102.520	102.420	32.618	33.030	0.00	0.00	102.420	102.118	33.030	34.267	0.00	0.00	102.118	101.415	34.267	37.152	0.00	0.00	101.415	100.410	37.152	41.273	0.00	0.00	100.410	99.405	41.273	45.395	0.00	0.00	99.405	98.400	45.395	49.516	0.00	0.00	98.400	98.099	49.516	50.752	0.00	0.00	98.099	80.000	50.752	124.986	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.52	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.52	-13.38	-13.86	102.52	102.42	-13.14	-17.41	102.42	102.12	-17.41	-30.22	102.12	101.41	-30.22	-60.12	101.41	100.41	-60.12	-102.82	100.41	99.41	-102.82	-145.53	99.41	98.40	-145.53	-188.24	98.40	98.10	-188.24	-201.05	98.10	80.00	-201.05	-970.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.45	0.0	0.0	0.0		108.44	-0.1	0.0	0.0		107.45	-24.9	-8.7	-3.6		107.45	-76.5	-8.7	-36.6		106.45	-104.6	-26.0	-53.3		105.50	-134.1	-50.3	-88.9		105.45	-135.7	-51.8	-91.4		105.40	-137.3	-53.6	-94.1		104.40	-169.5	-99.9	-169.4		103.72	-192.2	-141.0	-250.9	-227.2	103.72	-192.2	86.1	-250.9		103.40	-203.1	64.1	-226.8		102.55	-232.6	-2.9	-200.0		102.52	-233.4	-4.4	-200.1		102.42	-234.6	-5.7	-200.6		102.12	-236.1	-4.7	-202.3		101.41	-228.6	23.7	-197.8		100.41	-210.5	78.7	-141.7		99.41	-213.1	77.0	-59.1		98.40	-230.6	24.9	-3.9		98.10	-234.1	0.0	0.0	
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103.720	103.400	39.012	40.373	17.80	21.00																																																																																																																																																																																																																																																																																																													
103.400	102.550	40.373	43.990	21.00	29.50																																																																																																																																																																																																																																																																																																													
102.550	102.520	43.990	44.118	0.00	0.00																																																																																																																																																																																																																																																																																																													
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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<div>Schnittgrößen ([g+q+w],k)</div> 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kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig.Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.45</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.39</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.52</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>22.52</td></tr><tr><td>102.52</td><td>-3.8</td><td>5.00</td><td>19.05</td><td>21.35</td></tr><tr><td>102.47</td><td>-3.7</td><td>5.00</td><td>18.67</td><td>24.82</td></tr><tr><td>102.47</td><td>-3.7</td><td>6.65</td><td>24.82</td><td>24.82</td></tr><tr><td>102.42</td><td>-3.7</td><td>6.65</td><td>24.32</td><td>28.29</td></tr><tr><td>102.42</td><td>-3.7</td><td>7.73</td><td>28.29</td><td>28.29</td></tr><tr><td>102.37</td><td>-3.6</td><td>7.73</td><td>27.72</td><td>31.76</td></tr><tr><td>102.17</td><td>-3.3</td><td>13.85</td><td>45.64</td><td>45.64</td></tr><tr><td>102.12</td><td>-3.2</td><td>13.85</td><td>44.67</td><td>49.11</td></tr><tr><td>102.12</td><td>-3.2</td><td>15.22</td><td>49.11</td><td>49.11</td></tr><tr><td>102.07</td><td>-3.2</td><td>15.22</td><td>48.05</td><td>52.58</td></tr><tr><td>101.46</td><td>-2.4</td><td>39.57</td><td>94.23</td><td>94.22</td></tr><tr><td>101.41</td><td>-2.3</td><td>39.57</td><td>91.86</td><td>97.69</td></tr><tr><td>101.41</td><td>-2.3</td><td>42.08</td><td>97.70</td><td>97.69</td></tr><tr><td>101.36</td><td>-2.3</td><td>42.08</td><td>95.21</td><td>101.16</td></tr><tr><td>100.46</td><td>-1.3</td><td>50.00</td><td>65.88</td><td>163.62</td></tr><tr><td>100.41</td><td>-1.3</td><td>50.00</td><td>63.55</td><td>167.09</td></tr><tr><td>100.41</td><td>-1.3</td><td>50.00</td><td>63.55</td><td>167.09</td></tr><tr><td>100.36</td><td>-1.2</td><td>50.00</td><td>61.24</td><td>170.56</td></tr><tr><td>99.46</td><td>-0.5</td><td>50.00</td><td>23.36</td><td>233.02</td></tr><tr><td>99.41</td><td>-0.4</td><td>50.00</td><td>21.41</td><td>236.49</td></tr><tr><td>99.41</td><td>-0.4</td><td>50.00</td><td>21.41</td><td>236.49</td></tr><tr><td>99.35</td><td>-0.4</td><td>50.00</td><td>19.47</td><td>239.96</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-14.31</td><td>302.42</td></tr><tr><td>98.40</td><td>0.3</td><td>50.00</td><td>-16.16</td><td>305.89</td></tr><tr><td>98.40</td><td>0.3</td><td>50.00</td><td>-16.16</td><td>305.89</td></tr><tr><td>98.35</td><td>0.4</td><td>50.00</td><td>-18.00</td><td>309.36</td></tr><tr><td>98.15</td><td>0.5</td><td>50.00</td><td>-25.38</td><td>323.24</td></tr></tbody></table></div>						Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.45	-16.8	-	-	-	108.45	-16.7	-	-	-	108.45	-16.7	-	-	-	108.44	-16.7	-	-	-	108.44	-16.7	-	-	-	108.39	-16.6	-	-	-	107.50	-14.4	-	-	-	107.45	-14.3	-	-	-	107.45	-14.3	-	-	-	107.40	-14.2	-	-	-	106.50	-12.0	-	-	-	106.45	-11.9	-	-	-	106.45	-11.9	-	-	-	106.40	-11.7	-	-	-	105.55	-9.7	-	-	-	105.50	-9.6	-	-	-	105.50	-9.6	-	-	-	105.45	-9.5	-	-	-	105.45	-9.5	-	-	-	105.40	-9.4	-	-	-	105.40	-9.4	-	-	-	105.35	-9.3	-	-	-	104.45	-7.3	-	-	-	104.40	-7.2	-	-	-	104.40	-7.2	-	-	-	104.35	-7.1	-	-	-	103.77	-5.9	-	-	-	103.72	-5.8	-	-	-	103.72	-5.8	-	-	-	103.67	-5.7	-	-	-	103.45	-5.3	-	-	-	103.40	-5.3	-	-	-	103.40	-5.3	-	-	-	103.35	-5.2	-	-	-	102.60	-3.9	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	21.74	102.52	-3.8	0.00	0.00	22.52	102.52	-3.8	5.00	19.05	21.35	102.47	-3.7	5.00	18.67	24.82	102.47	-3.7	6.65	24.82	24.82	102.42	-3.7	6.65	24.32	28.29	102.42	-3.7	7.73	28.29	28.29	102.37	-3.6	7.73	27.72	31.76	102.17	-3.3	13.85	45.64	45.64	102.12	-3.2	13.85	44.67	49.11	102.12	-3.2	15.22	49.11	49.11	102.07	-3.2	15.22	48.05	52.58	101.46	-2.4	39.57	94.23	94.22	101.41	-2.3	39.57	91.86	97.69	101.41	-2.3	42.08	97.70	97.69	101.36	-2.3	42.08	95.21	101.16	100.46	-1.3	50.00	65.88	163.62	100.41	-1.3	50.00	63.55	167.09	100.41	-1.3	50.00	63.55	167.09	100.36	-1.2	50.00	61.24	170.56	99.46	-0.5	50.00	23.36	233.02	99.41	-0.4	50.00	21.41	236.49	99.41	-0.4	50.00	21.41	236.49	99.35	-0.4	50.00	19.47	239.96	98.45	0.3	50.00	-14.31	302.42	98.40	0.3	50.00	-16.16	305.89	98.40	0.3	50.00	-16.16	305.89	98.35	0.4	50.00	-18.00	309.36	98.15	0.5	50.00	-25.38	323.24
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100.46	-1.3	50.00	65.88	163.62																																																																																																																																																																																																																																																																																																																																																
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98.45	0.3	50.00	-14.31	302.42																																																																																																																																																																																																																																																																																																																																																
98.40	0.3	50.00	-16.16	305.89																																																																																																																																																																																																																																																																																																																																																
98.40	0.3	50.00	-16.16	305.89																																																																																																																																																																																																																																																																																																																																																
98.35	0.4	50.00	-18.00	309.36																																																																																																																																																																																																																																																																																																																																																
98.15	0.5	50.00	-25.38	323.24																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage G2 Schnitt 7R		Seite Anlage G2/41																																																																																																																																																																																																																																																																																																																																																
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2141																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>98.10 0.5 50.00 -27.22 326.71</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04205151 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.35 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 195.85 kN/m G',k = 0.00 kN/m Pv,k = 43.00 kN/m Eav,k = 59.70 kN/m (Eah,k = 340.29 kN/m) Bv,k = 78.90 Summe V,k = 219.65 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 102.52 0.00 S2: Auelehm 102.52 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 243.10 / 1.40 = 173.64 kN/m R,d = Rb,d + R,s1,d = 1038.69 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 235.02 - 0.00 + 68.65 + 51.60 = 355.28 kN/m ==> µ = V,d / R,d = 355.28 / 1038.69 = 0.34</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage G2 Schnitt 7R		Seite Anlage G2/42
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2142
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage H2 Schnitt 8R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 10_BS 8_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><th>Nr.</th><th>x1</th><th>x2</th><th>dh</th><th>a</th><th>x</th><th>y</th><th>Auflast</th><th>Verkehr</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[kN/m²]</th><th>[-]</th></tr><tr><td>1</td><td>0.50</td><td>1.55</td><td>1.05</td><td>0.29</td><td>0.28</td><td>0.58</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><th>von</th><th>bis</th><th>ks(oben)</th><th>ks(unten)</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[MN/m³]</th><th>[MN/m³]</th></tr><tr><td>106.00</td><td>105.35</td><td>10.000</td><td>10.000</td></tr><tr><td>105.35</td><td>102.48</td><td>5.000</td><td>5.000</td></tr><tr><td>102.48</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 378.339 / 1230.585 = 0.307 Bettungslager Bh,d = 378.339 kN/m Erdwiderstand Eph,d = 1230.585 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.55	1.05	0.29	0.28	0.58	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.35	10.000	10.000	105.35	102.48	5.000	5.000	102.48	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.50	1.55	1.05	0.29	0.28	0.58	0.00	nein																																									
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[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.35	10.000	10.000																																														
105.35	102.48	5.000	5.000																																														
102.48	80.00	50.000	50.000																																														
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/19																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 19. für Standsicherheit																																															
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	Dipl.-Ing. A. Forner																																															

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																		
<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.35</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.48</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <p>Beziehung: (1 - Faktor) · kah + Faktor · k0 Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit phi = 40 ° Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0. Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</p> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.35</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.48</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.308</td><td>13.268</td><td>16.230</td><td>0.00</td><td>0.00</td></tr><tr><td>106.308</td><td>106.000</td><td>16.230</td><td>18.510</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>18.510</td><td>22.212</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>22.212</td><td>22.407</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>22.407</td><td>22.796</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>105.000</td><td>27.621</td><td>29.110</td><td>1.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.446</td><td>29.110</td><td>31.469</td><td>5.00</td><td>5.00</td></tr><tr><td>104.446</td><td>103.438</td><td>31.469</td><td>35.758</td><td>5.00</td><td>5.00</td></tr><tr><td>103.438</td><td>102.480</td><td>35.758</td><td>39.833</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.430</td><td>29.565</td><td>29.769</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>101.634</td><td>29.769</td><td>33.037</td><td>5.00</td><td>5.00</td></tr><tr><td>101.634</td><td>101.434</td><td>33.037</td><td>33.854</td><td>5.00</td><td>5.00</td></tr><tr><td>101.434</td><td>100.439</td><td>33.854</td><td>37.938</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>99.443</td><td>37.938</td><td>42.022</td><td>5.00</td><td>5.00</td></tr><tr><td>99.443</td><td>98.447</td><td>42.022</td><td>46.106</td><td>5.00</td><td>5.00</td></tr><tr><td>98.447</td><td>98.099</td><td>46.106</td><td>47.535</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>47.535</td><td>121.769</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <p>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <p>bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.35</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <p>Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.31</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.35</td><td>-32.19</td><td>-38.04</td></tr><tr><td>105.35</td><td>105.00</td><td>-30.28</td><td>-41.38</td></tr><tr><td>105.00</td><td>104.45</td><td>-41.38</td><td>-50.18</td></tr><tr><td>104.45</td><td>103.44</td><td>-50.18</td><td>-66.17</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	105.35	0.390	0.461	30.000	10.00	57.80	0.179	2	102.48	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.308	13.268	16.230	0.00	0.00	106.308	106.000	16.230	18.510	0.00	0.00	106.000	105.500	18.510	22.212	0.00	0.00	105.500	105.450	22.212	22.407	0.00	0.50	105.450	105.350	22.407	22.796	0.50	1.50	105.350	105.000	27.621	29.110	1.50	5.00	105.000	104.446	29.110	31.469	5.00	5.00	104.446	103.438	31.469	35.758	5.00	5.00	103.438	102.480	35.758	39.833	5.00	5.00	102.480	102.430	29.565	29.769	5.00	5.00	102.430	101.634	29.769	33.037	5.00	5.00	101.634	101.434	33.037	33.854	5.00	5.00	101.434	100.439	33.854	37.938	5.00	5.00	100.439	99.443	37.938	42.022	5.00	5.00	99.443	98.447	42.022	46.106	5.00	5.00	98.447	98.099	46.106	47.535	5.00	5.00	98.099	80.000	47.535	121.769	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.35	5.005	5.388	30.000	-20.01	18.10	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.31	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.35	-32.19	-38.04	105.35	105.00	-30.28	-41.38	105.00	104.45	-41.38	-50.18	104.45	103.44	-50.18	-66.17	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div> <div>Seite Anlage H2/2</div> <div>Archiv Nr.</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																										
1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																																										
2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																																										
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																										
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																													
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]																																																																																																																																																																																																																																																																																																													
1	105.35	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																																													
2	102.48	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																													
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																													
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																															
107.450	106.886	0.000	4.176	0.00	0.00																																																																																																																																																																																																																																																																																																															
106.886	106.450	4.176	13.267	0.00	0.00																																																																																																																																																																																																																																																																																																															
106.450	106.308	13.268	16.230	0.00	0.00																																																																																																																																																																																																																																																																																																															
106.308	106.000	16.230	18.510	0.00	0.00																																																																																																																																																																																																																																																																																																															
106.000	105.500	18.510	22.212	0.00	0.00																																																																																																																																																																																																																																																																																																															
105.500	105.450	22.212	22.407	0.00	0.50																																																																																																																																																																																																																																																																																																															
105.450	105.350	22.407	22.796	0.50	1.50																																																																																																																																																																																																																																																																																																															
105.350	105.000	27.621	29.110	1.50	5.00																																																																																																																																																																																																																																																																																																															
105.000	104.446	29.110	31.469	5.00	5.00																																																																																																																																																																																																																																																																																																															
104.446	103.438	31.469	35.758	5.00	5.00																																																																																																																																																																																																																																																																																																															
103.438	102.480	35.758	39.833	5.00	5.00																																																																																																																																																																																																																																																																																																															
102.480	102.430	29.565	29.769	5.00	5.00																																																																																																																																																																																																																																																																																																															
102.430	101.634	29.769	33.037	5.00	5.00																																																																																																																																																																																																																																																																																																															
101.634	101.434	33.037	33.854	5.00	5.00																																																																																																																																																																																																																																																																																																															
101.434	100.439	33.854	37.938	5.00	5.00																																																																																																																																																																																																																																																																																																															
100.439	99.443	37.938	42.022	5.00	5.00																																																																																																																																																																																																																																																																																																															
99.443	98.447	42.022	46.106	5.00	5.00																																																																																																																																																																																																																																																																																																															
98.447	98.099	46.106	47.535	5.00	5.00																																																																																																																																																																																																																																																																																																															
98.099	80.000	47.535	121.769	5.00	5.00																																																																																																																																																																																																																																																																																																															
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																	
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																	
0.00	0.00	107.45	106.00																																																																																																																																																																																																																																																																																																																	
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																														
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																																														
1	105.35	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																																																																																														
2	102.48	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																														
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																														
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																	
106.31	106.00	0.00	0.00																																																																																																																																																																																																																																																																																																																	
106.00	105.50	0.00	-29.26																																																																																																																																																																																																																																																																																																																	
105.50	105.45	-29.26	-32.19																																																																																																																																																																																																																																																																																																																	
105.45	105.35	-32.19	-38.04																																																																																																																																																																																																																																																																																																																	
105.35	105.00	-30.28	-41.38																																																																																																																																																																																																																																																																																																																	
105.00	104.45	-41.38	-50.18																																																																																																																																																																																																																																																																																																																	
104.45	103.44	-50.18	-66.17																																																																																																																																																																																																																																																																																																																	
Schnitt: Anlage H2 Schnitt 8R																																																																																																																																																																																																																																																																																																																				
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																			

[illegible]

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>101.43 -52.4 12.5 -112.5</div><div>100.44 -42.4 44.4 -81.3</div><div>99.44 -43.6 43.9 -34.9</div><div>98.45 -54.2 15.9 -2.9</div><div>98.10 -59.9 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.89 0.0 0.0 0.0</div><div>106.45 0.0 0.0 0.0</div><div>106.31 0.0 0.0 0.0</div><div>106.00 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.45 0.0 0.0 0.0</div><div>105.35 0.0 0.0 0.0</div><div>105.00 0.0 0.0 0.0</div><div>104.45 0.0 0.0 0.0</div><div>103.44 0.0 0.0 0.0</div><div>102.48 0.0 0.0 0.0</div><div>102.43 0.0 0.0 0.0</div><div>101.63 0.0 0.0 0.0</div><div>101.43 0.0 0.0 0.0</div><div>100.44 0.0 0.0 0.0</div><div>99.44 0.0 0.0 0.0</div><div>98.45 0.0 0.0 0.0</div><div>98.10 0.0 0.0 0.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe w ks sig,Bh,k eph,k</div><div>[m] [mm] [kN/m³] [kN/m²] [kN/m²]</div><div>107.45 -8.0 - - -</div><div>107.40 -8.0 - - -</div><div>106.95 -7.5 - - -</div><div>106.89 -7.4 - - -</div><div>106.89 -7.4 - - -</div><div>106.84 -7.4 - - -</div><div>106.50 -7.0 - - -</div><div>106.45 -6.9 - - -</div><div>106.45 -6.9 - - -</div><div>106.40 -6.9 - - -</div><div>106.36 -6.8 - - -</div><div>106.31 -6.8 - - -</div><div>106.31 -6.8 - - -</div><div>106.26 -6.7 - - -</div><div>106.05 -6.5 - - -</div><div>106.00 -6.4 0.00 0.00 0.00</div><div>106.00 -6.4 0.00 0.00 0.00</div><div>105.95 -6.4 0.00 0.00 4.75</div><div>105.55 -5.9 7.25 42.80 42.79</div><div>105.50 -5.8 7.25 42.39 47.55</div><div>105.50 -5.8 8.13 47.55 47.55</div><div>105.45 -5.8 8.13 47.10 52.30</div><div>105.45 -5.8 9.03 52.31 52.30</div><div>105.40 -5.7 9.03 51.80 57.06</div><div>105.40 -5.7 9.95 57.06 57.06</div><div>105.35 -5.7 9.95 56.50 61.81</div><div>105.35 -5.7 5.00 28.39 49.20</div><div>105.30 -5.6 5.00 28.11 51.78</div><div>105.05 -5.3 5.00 26.72 64.67</div><div>105.00 -5.3 5.00 26.45 67.25</div><div>105.00 -5.3 5.00 26.45 67.25</div><div>104.95 -5.2 5.00 26.17 68.55</div><div>104.50 -4.7 5.00 23.67 80.24</div><div>104.45 -4.7 5.00 23.40 81.54</div><div>104.45 -4.7 5.00 23.40 81.54</div><div>104.40 -4.6 5.00 23.13 82.84</div><div>103.49 -3.7 5.00 18.30 106.23</div><div>103.44 -3.6 5.00 18.04 107.53</div></div></div></div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/4
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																						
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																						
<table><tr><td>103.44</td><td>-3.6</td><td>5.00</td><td>18.04</td><td>107.53</td></tr><tr><td>103.39</td><td>-3.6</td><td>5.00</td><td>17.78</td><td>108.83</td></tr><tr><td>102.53</td><td>-2.7</td><td>5.00</td><td>13.56</td><td>130.93</td></tr><tr><td>102.48</td><td>-2.7</td><td>5.00</td><td>13.32</td><td>132.23</td></tr><tr><td>102.48</td><td>-2.7</td><td>5.00</td><td>13.32</td><td>238.55</td></tr><tr><td>102.43</td><td>-2.6</td><td>5.00</td><td>13.10</td><td>241.99</td></tr><tr><td>102.43</td><td>-2.6</td><td>50.00</td><td>130.95</td><td>241.99</td></tr><tr><td>102.38</td><td>-2.6</td><td>50.00</td><td>128.68</td><td>245.43</td></tr><tr><td>101.68</td><td>-2.0</td><td>50.00</td><td>99.15</td><td>293.57</td></tr><tr><td>101.63</td><td>-1.9</td><td>50.00</td><td>97.22</td><td>297.00</td></tr><tr><td>101.63</td><td>-1.9</td><td>50.00</td><td>97.22</td><td>297.00</td></tr><tr><td>101.58</td><td>-1.9</td><td>50.00</td><td>95.31</td><td>300.44</td></tr><tr><td>101.48</td><td>-1.8</td><td>50.00</td><td>91.56</td><td>307.32</td></tr><tr><td>101.43</td><td>-1.8</td><td>50.00</td><td>89.72</td><td>310.76</td></tr><tr><td>101.43</td><td>-1.8</td><td>50.00</td><td>89.72</td><td>310.76</td></tr><tr><td>101.38</td><td>-1.8</td><td>50.00</td><td>87.91</td><td>314.20</td></tr><tr><td>100.49</td><td>-1.2</td><td>50.00</td><td>59.03</td><td>376.09</td></tr><tr><td>100.44</td><td>-1.2</td><td>50.00</td><td>57.61</td><td>379.53</td></tr><tr><td>100.44</td><td>-1.2</td><td>50.00</td><td>57.61</td><td>379.53</td></tr><tr><td>100.39</td><td>-1.1</td><td>50.00</td><td>56.21</td><td>382.97</td></tr><tr><td>99.49</td><td>-0.7</td><td>50.00</td><td>33.41</td><td>444.86</td></tr><tr><td>99.44</td><td>-0.6</td><td>50.00</td><td>32.24</td><td>448.30</td></tr><tr><td>99.44</td><td>-0.6</td><td>50.00</td><td>32.24</td><td>448.30</td></tr><tr><td>99.39</td><td>-0.6</td><td>50.00</td><td>31.08</td><td>451.74</td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>11.00</td><td>513.64</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>9.90</td><td>517.07</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>9.90</td><td>517.07</td></tr><tr><td>98.40</td><td>-0.2</td><td>50.00</td><td>8.81</td><td>520.51</td></tr><tr><td>98.15</td><td>-0.1</td><td>50.00</td><td>3.35</td><td>537.71</td></tr><tr><td>98.10</td><td>0.0</td><td>50.00</td><td>2.26</td><td>541.14</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02513133 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 51.27 kN/m (Eah,k = 291.67 kN/m) Bv,k = 121.87 Summe V,k = 106.33 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 106.00 105.35 0.00 S1: Auffüllungen 105.35 102.48 0.00 S2: Auelehm 102.48 98.10 55.00 s3: Flusskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 240.90 / 1.40 = 172.07 kN/m R,d = Rb,d + R,s1,d = 1037.12 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 58.96 + 0.00 = 271.28 kN/m ==> µ = V,d / R,d = 271.28 / 1037.12 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.44	-3.6	5.00	18.04	107.53	103.39	-3.6	5.00	17.78	108.83	102.53	-2.7	5.00	13.56	130.93	102.48	-2.7	5.00	13.32	132.23	102.48	-2.7	5.00	13.32	238.55	102.43	-2.6	5.00	13.10	241.99	102.43	-2.6	50.00	130.95	241.99	102.38	-2.6	50.00	128.68	245.43	101.68	-2.0	50.00	99.15	293.57	101.63	-1.9	50.00	97.22	297.00	101.63	-1.9	50.00	97.22	297.00	101.58	-1.9	50.00	95.31	300.44	101.48	-1.8	50.00	91.56	307.32	101.43	-1.8	50.00	89.72	310.76	101.43	-1.8	50.00	89.72	310.76	101.38	-1.8	50.00	87.91	314.20	100.49	-1.2	50.00	59.03	376.09	100.44	-1.2	50.00	57.61	379.53	100.44	-1.2	50.00	57.61	379.53	100.39	-1.1	50.00	56.21	382.97	99.49	-0.7	50.00	33.41	444.86	99.44	-0.6	50.00	32.24	448.30	99.44	-0.6	50.00	32.24	448.30	99.39	-0.6	50.00	31.08	451.74	98.50	-0.2	50.00	11.00	513.64	98.45	-0.2	50.00	9.90	517.07	98.45	-0.2	50.00	9.90	517.07	98.40	-0.2	50.00	8.81	520.51	98.15	-0.1	50.00	3.35	537.71	98.10	0.0	50.00	2.26	541.14
103.44	-3.6	5.00	18.04	107.53																																																																																																																																																				
103.39	-3.6	5.00	17.78	108.83																																																																																																																																																				
102.53	-2.7	5.00	13.56	130.93																																																																																																																																																				
102.48	-2.7	5.00	13.32	132.23																																																																																																																																																				
102.48	-2.7	5.00	13.32	238.55																																																																																																																																																				
102.43	-2.6	5.00	13.10	241.99																																																																																																																																																				
102.43	-2.6	50.00	130.95	241.99																																																																																																																																																				
102.38	-2.6	50.00	128.68	245.43																																																																																																																																																				
101.68	-2.0	50.00	99.15	293.57																																																																																																																																																				
101.63	-1.9	50.00	97.22	297.00																																																																																																																																																				
101.63	-1.9	50.00	97.22	297.00																																																																																																																																																				
101.58	-1.9	50.00	95.31	300.44																																																																																																																																																				
101.48	-1.8	50.00	91.56	307.32																																																																																																																																																				
101.43	-1.8	50.00	89.72	310.76																																																																																																																																																				
101.43	-1.8	50.00	89.72	310.76																																																																																																																																																				
101.38	-1.8	50.00	87.91	314.20																																																																																																																																																				
100.49	-1.2	50.00	59.03	376.09																																																																																																																																																				
100.44	-1.2	50.00	57.61	379.53																																																																																																																																																				
100.44	-1.2	50.00	57.61	379.53																																																																																																																																																				
100.39	-1.1	50.00	56.21	382.97																																																																																																																																																				
99.49	-0.7	50.00	33.41	444.86																																																																																																																																																				
99.44	-0.6	50.00	32.24	448.30																																																																																																																																																				
99.44	-0.6	50.00	32.24	448.30																																																																																																																																																				
99.39	-0.6	50.00	31.08	451.74																																																																																																																																																				
98.50	-0.2	50.00	11.00	513.64																																																																																																																																																				
98.45	-0.2	50.00	9.90	517.07																																																																																																																																																				
98.45	-0.2	50.00	9.90	517.07																																																																																																																																																				
98.40	-0.2	50.00	8.81	520.51																																																																																																																																																				
98.15	-0.1	50.00	3.35	537.71																																																																																																																																																				
98.10	0.0	50.00	2.26	541.14																																																																																																																																																				
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/5																																																																																																																																																						
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																						
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																						



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 11_BS 8_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.55 1.05 0.29 0.28 0.58 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.55 107.45 107.45 107.45 105.87 105.18 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.35 10.000 10.000 105.35 102.48 5.000 5.000 102.48 80.00 50.000 50.000</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																															
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<div>Ausnutzungsgrad $\mu_e = 430.194 / 1117.128 = 0.385$ Bettungslager $B_{h,d} = 430.194 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1117.128 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{a,k}$</th><th>$\phi_{i,k}$</th><th>$c(pas),k$</th><th>$c(akt),k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.35</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.48</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.35</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.48</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th colspan="2">[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.836</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.836</td><td>20.290</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.308</td><td>20.291</td><td>23.697</td><td>0.00</td><td>0.00</td></tr><tr><td>106.308</td><td>106.000</td><td>23.697</td><td>26.303</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.872</td><td>26.303</td><td>27.253</td><td>0.00</td><td>0.00</td></tr><tr><td>105.872</td><td>105.500</td><td>27.253</td><td>27.901</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>27.901</td><td>27.813</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>27.813</td><td>27.637</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>105.183</td><td>33.839</td><td>33.336</td><td>1.50</td><td>3.17</td></tr><tr><td>105.183</td><td>105.000</td><td>33.336</td><td>34.116</td><td>3.17</td><td>5.00</td></tr><tr><td>105.000</td><td>104.446</td><td>34.116</td><td>36.475</td><td>5.00</td><td>5.00</td></tr><tr><td>104.446</td><td>103.438</td><td>36.475</td><td>40.764</td><td>5.00</td><td>5.00</td></tr><tr><td>103.438</td><td>102.480</td><td>40.764</td><td>44.839</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.430</td><td>33.132</td><td>33.336</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>101.733</td><td>33.336</td><td>36.195</td><td>5.00</td><td>5.00</td></tr><tr><td>101.733</td><td>101.434</td><td>36.195</td><td>37.420</td><td>5.00</td><td>5.00</td></tr><tr><td>101.434</td><td>100.439</td><td>37.420</td><td>41.504</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>99.443</td><td>41.504</td><td>45.588</td><td>5.00</td><td>5.00</td></tr><tr><td>99.443</td><td>98.447</td><td>45.588</td><td>49.672</td><td>5.00</td><td>5.00</td></tr><tr><td>98.447</td><td>98.099</td><td>49.672</td><td>51.102</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.102</td><td>125.335</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{pgh}</th><th>k_{pch}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>1</td><td>105.35</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table>			Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.35	0.390	0.461	30.000	10.00	57.80	0.179	2	102.48	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		107.450	107.448	0.000	3.923	0.00	0.00	107.448	106.886	3.923	9.836	0.00	0.00	106.886	106.450	9.836	20.290	0.00	0.00	106.450	106.308	20.291	23.697	0.00	0.00	106.308	106.000	23.697	26.303	0.00	0.00	106.000	105.872	26.303	27.253	0.00	0.00	105.872	105.500	27.253	27.901	0.00	0.00	105.500	105.450	27.901	27.813	0.00	0.50	105.450	105.350	27.813	27.637	0.50	1.50	105.350	105.183	33.839	33.336	1.50	3.17	105.183	105.000	33.336	34.116	3.17	5.00	105.000	104.446	34.116	36.475	5.00	5.00	104.446	103.438	36.475	40.764	5.00	5.00	103.438	102.480	40.764	44.839	5.00	5.00	102.480	102.430	33.132	33.336	5.00	5.00	102.430	101.733	33.336	36.195	5.00	5.00	101.733	101.434	36.195	37.420	5.00	5.00	101.434	100.439	37.420	41.504	5.00	5.00	100.439	99.443	41.504	45.588	5.00	5.00	99.443	98.447	45.588	49.672	5.00	5.00	98.447	98.099	49.672	51.102	5.00	5.00	98.099	80.000	51.102	125.335	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.35	5.005	5.388	30.000	-20.01	18.10	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																							
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2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																							
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																							
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105.350	105.183	33.839	33.336	1.50	3.17																																																																																																																																																																																																																																																																																												
105.183	105.000	33.336	34.116	3.17	5.00																																																																																																																																																																																																																																																																																												
105.000	104.446	34.116	36.475	5.00	5.00																																																																																																																																																																																																																																																																																												
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103.438	102.480	40.764	44.839	5.00	5.00																																																																																																																																																																																																																																																																																												
102.480	102.430	33.132	33.336	5.00	5.00																																																																																																																																																																																																																																																																																												
102.430	101.733	33.336	36.195	5.00	5.00																																																																																																																																																																																																																																																																																												
101.733	101.434	36.195	37.420	5.00	5.00																																																																																																																																																																																																																																																																																												
101.434	100.439	37.420	41.504	5.00	5.00																																																																																																																																																																																																																																																																																												
100.439	99.443	41.504	45.588	5.00	5.00																																																																																																																																																																																																																																																																																												
99.443	98.447	45.588	49.672	5.00	5.00																																																																																																																																																																																																																																																																																												
98.447	98.099	49.672	51.102	5.00	5.00																																																																																																																																																																																																																																																																																												
98.099	80.000	51.102	125.335	5.00	5.00																																																																																																																																																																																																																																																																																												
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1	105.35	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																																																																											
2	102.48	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																											
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																											
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<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.31</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.87</td><td>0.00</td><td>-7.51</td></tr><tr><td>105.87</td><td>105.50</td><td>-7.51</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.35</td><td>-32.19</td><td>-38.04</td></tr><tr><td>105.35</td><td>105.18</td><td>-30.28</td><td>-35.57</td></tr><tr><td>105.18</td><td>105.00</td><td>-35.57</td><td>-41.38</td></tr><tr><td>105.00</td><td>104.45</td><td>-41.38</td><td>-50.18</td></tr><tr><td>104.45</td><td>103.44</td><td>-50.18</td><td>-66.17</td></tr><tr><td>103.44</td><td>102.48</td><td>-66.17</td><td>-81.37</td></tr><tr><td>102.48</td><td>102.43</td><td>-146.80</td><td>-148.92</td></tr><tr><td>102.43</td><td>101.73</td><td>-148.92</td><td>-178.54</td></tr><tr><td>101.73</td><td>101.43</td><td>-178.54</td><td>-191.24</td></tr><tr><td>101.43</td><td>100.44</td><td>-191.24</td><td>-233.56</td></tr><tr><td>100.44</td><td>99.44</td><td>-233.56</td><td>-275.88</td></tr><tr><td>99.44</td><td>98.45</td><td>-275.88</td><td>-318.20</td></tr><tr><td>98.45</td><td>98.10</td><td>-318.20</td><td>-333.01</td></tr><tr><td>98.10</td><td>80.00</td><td>-333.01</td><td>-1102.25</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>107.45</td><td>-0.1</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-13.9</td><td>-4.4</td><td>-1.1</td></tr><tr><td>106.45</td><td>-26.1</td><td>-12.0</td><td>-4.5</td></tr><tr><td>106.31</td><td>-30.5</td><td>-15.6</td><td>-6.4</td></tr><tr><td>106.00</td><td>-40.5</td><td>-24.5</td><td>-12.6</td></tr><tr><td>105.87</td><td>-43.5</td><td>-27.8</td><td>-15.9</td></tr><tr><td>105.50</td><td>-47.3</td><td>-28.0</td><td>-26.8</td></tr><tr><td>105.45</td><td>-47.4</td><td>-26.8</td><td>-28.1</td></tr><tr><td>105.35</td><td>-47.3</td><td>-23.9</td><td>-30.7</td></tr><tr><td>105.18</td><td>-49.1</td><td>-23.7</td><td>-34.6</td></tr><tr><td>105.00</td><td>-51.0</td><td>-24.2</td><td>-39.0</td></tr><tr><td>104.45</td><td>-57.5</td><td>-29.2</td><td>-53.6</td></tr><tr><td>103.44</td><td>-71.2</td><td>-49.0</td><td>-91.9</td></tr><tr><td>102.48</td><td>-86.2</td><td>-80.1</td><td>-152.7</td></tr><tr><td>102.43</td><td>-86.9</td><td>-81.4</td><td>-156.7</td></tr><tr><td>101.73</td><td>-57.0</td><td>0.5</td><td>-182.9</td></tr><tr><td>101.43</td><td>-47.9</td><td>25.4</td><td>-178.9</td></tr><tr><td>100.44</td><td>-31.3</td><td>70.9</td><td>-126.5</td></tr><tr><td>99.44</td><td>-32.0</td><td>68.1</td><td>-53.7</td></tr><tr><td>98.45</td><td>-47.0</td><td>24.4</td><td>-4.4</td></tr><tr><td>98.10</td><td>-53.8</td><td>0.0</td><td>0.0</td></tr></tbody></table>			von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.31	106.00	0.00	0.00	106.00	105.87	0.00	-7.51	105.87	105.50	-7.51	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.35	-32.19	-38.04	105.35	105.18	-30.28	-35.57	105.18	105.00	-35.57	-41.38	105.00	104.45	-41.38	-50.18	104.45	103.44	-50.18	-66.17	103.44	102.48	-66.17	-81.37	102.48	102.43	-146.80	-148.92	102.43	101.73	-148.92	-178.54	101.73	101.43	-178.54	-191.24	101.43	100.44	-191.24	-233.56	100.44	99.44	-233.56	-275.88	99.44	98.45	-275.88	-318.20	98.45	98.10	-318.20	-333.01	98.10	80.00	-333.01	-1102.25	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	-0.1	0.0	0.0	106.89	-13.9	-4.4	-1.1	106.45	-26.1	-12.0	-4.5	106.31	-30.5	-15.6	-6.4	106.00	-40.5	-24.5	-12.6	105.87	-43.5	-27.8	-15.9	105.50	-47.3	-28.0	-26.8	105.45	-47.4	-26.8	-28.1	105.35	-47.3	-23.9	-30.7	105.18	-49.1	-23.7	-34.6	105.00	-51.0	-24.2	-39.0	104.45	-57.5	-29.2	-53.6	103.44	-71.2	-49.0	-91.9	102.48	-86.2	-80.1	-152.7	102.43	-86.9	-81.4	-156.7	101.73	-57.0	0.5	-182.9	101.43	-47.9	25.4	-178.9	100.44	-31.3	70.9	-126.5	99.44	-32.0	68.1	-53.7	98.45	-47.0	24.4	-4.4	98.10	-53.8	0.0	0.0
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Statisch geprüft

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Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																								
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Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig				
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024	
<div><div><div>101.730.00.00.0.0</div><div>101.430.00.0.0.0.0</div><div>100.440.00.0.0.0.0</div><div>99.440.00.0.0.0.0</div><div>98.450.00.0.0.0.0</div><div>98.100.00.0.0.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>107.45-10.9--</div><div>107.45-10.9--</div><div>107.45-10.9--</div><div>107.40-10.8--</div><div>106.95-10.1--</div><div>106.89-10.0--</div><div>106.89-10.0--</div><div>106.84-9.9--</div><div>106.50-9.3--</div><div>106.45-9.3--</div><div>106.45-9.3--</div><div>106.40-9.2--</div><div>106.36-9.1--</div><div>106.31-9.0--</div><div>106.31-9.0--</div><div>106.26-9.0--</div><div>106.05-8.6--</div><div>106.00-8.50.000.000.00</div><div>106.00-8.50.000.000.00</div><div>105.96-8.50.000.004.07</div><div>105.91-8.40.978.148.13</div><div>105.87-8.30.978.0712.20</div><div>105.87-8.31.4612.2012.20</div><div>105.82-8.31.4612.0817.25</div><div>105.55-7.85.4342.5042.50</div><div>105.50-7.75.4342.0447.55</div><div>105.50-7.76.1447.5547.55</div><div>105.45-7.76.1447.0652.30</div><div>105.45-7.76.8352.3152.30</div><div>105.40-7.66.8351.7657.06</div><div>105.40-7.67.5357.0657.06</div><div>105.35-7.57.5356.4661.81</div><div>105.35-7.55.0037.5149.20</div><div>105.29-7.45.0037.0752.06</div><div>105.24-7.35.0036.6354.93</div><div>105.18-7.25.0036.2057.80</div><div>105.18-7.25.0036.2057.80</div><div>105.14-7.25.0035.8360.16</div><div>105.05-7.05.0035.1164.88</div><div>105.00-7.05.0034.7567.25</div><div>105.00-7.05.0034.7567.25</div><div>104.95-6.95.0034.3668.55</div><div>104.50-6.25.0030.8480.24</div><div>104.45-6.15.0030.4581.54</div><div>104.45-6.15.0030.4581.54</div><div>104.40-6.05.0030.0782.84</div><div>103.49-4.75.0023.34106.23</div><div>103.44-4.65.0022.98107.53</div><div>103.44-4.65.0022.98107.53</div><div>103.39-4.55.0022.62108.83</div><div>102.53-3.45.0016.85130.93</div><div>102.48-3.35.0016.53132.23</div><div>102.48-3.35.0016.53238.55</div><div>102.43-3.25.0016.22241.99</div><div>102.43-3.250.00162.19241.99</div><div>102.38-3.250.00159.11245.43</div><div>101.78-2.550.00124.54286.69</div><div>101.73-2.450.00121.87290.13</div><div>101.73-2.450.00121.87290.13</div><div>101.68-2.450.00119.23293.57</div></div></div></div>						
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																										

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																											
Auftraggeber: Stadtverwaltung Leipzig		-																																											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																											
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand</p> <p>=====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 12_BS 8_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.55</td><td>1.05</td><td>0.29</td><td>0.28</td><td>0.58</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>102.48</td><td>5.000</td><td>5.000</td></tr><tr><td>102.48</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad $\mu_e = 286.336 / 380.878 = 0.752$ Bettungslager $B_{h,d} = 286.336$ kN/m Erdwiderstand $E_{ph,d} = 380.878$ kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.55	1.05	0.29	0.28	0.58	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	102.48	5.000	5.000	102.48	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																					
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																									
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-93.57</td><td>-81.02</td><td>-81.02</td><td>-7.97</td><td>6.900E+4</td><td>2.100E+7</td><td>-103.30</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.0</td><td>0.1</td><td>-93.57</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 8\Rechtes Ufer\10_BS 8_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0075</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ'_{m,k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.35</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.48</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.35</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.48</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.308</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.00</td></tr><tr><td>106.308</td><td>105.500</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>26.716</td><td>26.716</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>26.716</td><td>26.716</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>105.000</td><td>26.716</td><td>26.716</td><td>1.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.450</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr><tr><td>104.450</td><td>104.400</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-93.57	-81.02	-81.02	-7.97	6.900E+4	2.100E+7	-103.30	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.6	0.0	-93.57	0.00	0.00	-0.90	106.95	-8.7	0.0	-93.57	0.00	0.00	-0.90	106.95	-8.7	0.0	-93.57	0.00	0.00	-0.80	106.95	-8.9	0.0	-93.57	0.00	0.00	-0.70	106.95	-9.0	0.0	-93.57	0.00	0.00	-0.60	106.95	-9.1	0.0	-93.57	0.00	0.00	-0.50	106.95	-9.3	0.0	-93.57	0.00	0.00	-0.40	106.95	-9.4	0.0	-93.57	0.00	0.00	-0.30	106.95	-9.6	0.0	-93.57	0.00	0.00	-0.20	106.95	-9.7	0.0	-93.57	0.00	0.00	-0.10	106.95	-9.8	0.0	-93.57	0.00	0.00	0.00	106.95	-10.0	0.1	-93.57	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0075	Schicht	UK	γ _{m,k}	γ' _{m,k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.35	0.390	0.461	30.000	10.00	57.80	0.179	2	102.48	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	26.716	26.716	0.00	0.00	106.950	106.886	26.716	26.716	0.00	0.00	106.886	106.450	26.716	26.716	0.00	0.00	106.450	106.308	26.716	26.716	0.00	0.00	106.308	105.500	26.716	26.716	0.00	0.00	105.500	105.450	26.716	26.716	0.00	0.50	105.450	105.350	26.716	26.716	0.50	1.50	105.350	105.000	26.716	26.716	1.50	5.00	105.000	104.450	22.263	22.263	5.00	5.00	104.450	104.400	22.263	22.263	5.00	5.00	104.400	103.400	22.263	22.263	5.00	5.00	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																					
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]																																																																																																																																																																																																																																																																																																																					
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																													
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<table><tr><td>103.400</td><td>102.550</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.480</td><td>39.535</td><td>39.833</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.430</td><td>29.565</td><td>29.769</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>101.833</td><td>29.769</td><td>32.220</td><td>5.00</td><td>5.00</td></tr><tr><td>101.833</td><td>101.434</td><td>32.220</td><td>33.854</td><td>5.00</td><td>5.00</td></tr><tr><td>101.434</td><td>100.439</td><td>33.854</td><td>37.938</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>99.443</td><td>37.938</td><td>42.022</td><td>5.00</td><td>5.00</td></tr><tr><td>99.443</td><td>98.447</td><td>42.022</td><td>46.106</td><td>5.00</td><td>5.00</td></tr><tr><td>98.447</td><td>98.099</td><td>46.106</td><td>47.535</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>47.535</td><td>121.769</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.43</td><td>-2.20</td><td>-4.32</td></tr><tr><td>102.43</td><td>101.83</td><td>-4.32</td><td>-29.71</td></tr><tr><td>101.83</td><td>101.43</td><td>-29.71</td><td>-46.64</td></tr><tr><td>101.43</td><td>100.44</td><td>-46.64</td><td>-88.96</td></tr><tr><td>100.44</td><td>99.44</td><td>-88.96</td><td>-131.28</td></tr><tr><td>99.44</td><td>98.45</td><td>-131.28</td><td>-173.60</td></tr><tr><td>98.45</td><td>98.10</td><td>-173.60</td><td>-188.41</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.41</td><td>-957.65</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.5</td><td>-15.4</td><td>-3.8</td><td>-93.6</td></tr><tr><td>106.95</td><td>-16.5</td><td>78.2</td><td>-3.8</td><td></td></tr><tr><td>106.89</td><td>-18.6</td><td>76.2</td><td>1.1</td><td></td></tr><tr><td>106.45</td><td>-32.9</td><td>62.8</td><td>31.4</td><td></td></tr><tr><td>106.31</td><td>-37.6</td><td>58.5</td><td>40.0</td><td></td></tr><tr><td>105.50</td><td>-64.3</td><td>33.7</td><td>77.3</td><td></td></tr><tr><td>105.45</td><td>-65.9</td><td>32.1</td><td>78.9</td><td></td></tr><tr><td>105.35</td><td>-69.2</td><td>28.9</td><td>82.0</td><td></td></tr><tr><td>105.00</td><td>-79.7</td><td>16.8</td><td>90.0</td><td></td></tr><tr><td>104.45</td><td>-95.4</td><td>-0.6</td><td>94.5</td><td></td></tr><tr><td>104.40</td><td>-96.9</td><td>-2.2</td><td>94.4</td><td></td></tr><tr><td>103.40</td><td>-125.5</td><td>-33.8</td><td>76.4</td><td></td></tr><tr><td>102.55</td><td>-149.8</td><td>-60.6</td><td>36.3</td><td></td></tr><tr><td>102.48</td><td>-151.8</td><td>-64.2</td><td>31.9</td><td></td></tr><tr><td>102.43</td><td>-152.9</td><td>-66.0</td><td>28.7</td><td></td></tr><tr><td>101.83</td><td>-158.8</td><td>-73.2</td><td>-14.2</td><td></td></tr><tr><td>101.43</td><td>-156.6</td><td>-63.2</td><td>-41.8</td><td></td></tr><tr><td>100.44</td><td>-132.0</td><td>6.6</td><td>-73.4</td><td></td></tr><tr><td>99.44</td><td>-118.0</td><td>45.0</td><td>-42.5</td><td></td></tr><tr><td>98.45</td><td>-126.4</td><td>22.1</td><td>-4.1</td><td></td></tr><tr><td>98.10</td><td>-133.3</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.400	102.550	22.263	22.263	5.00	5.00	102.550	102.480	39.535	39.833	5.00	5.00	102.480	102.430	29.565	29.769	5.00	5.00	102.430	101.833	29.769	32.220	5.00	5.00	101.833	101.434	32.220	33.854	5.00	5.00	101.434	100.439	33.854	37.938	5.00	5.00	100.439	99.443	37.938	42.022	5.00	5.00	99.443	98.447	42.022	46.106	5.00	5.00	98.447	98.099	46.106	47.535	5.00	5.00	98.099	80.000	47.535	121.769	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.43	-2.20	-4.32	102.43	101.83	-4.32	-29.71	101.83	101.43	-29.71	-46.64	101.43	100.44	-46.64	-88.96	100.44	99.44	-88.96	-131.28	99.44	98.45	-131.28	-173.60	98.45	98.10	-173.60	-188.41	98.10	80.00	-188.41	-957.65	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.5	-15.4	-3.8	-93.6	106.95	-16.5	78.2	-3.8		106.89	-18.6	76.2	1.1		106.45	-32.9	62.8	31.4		106.31	-37.6	58.5	40.0		105.50	-64.3	33.7	77.3		105.45	-65.9	32.1	78.9		105.35	-69.2	28.9	82.0		105.00	-79.7	16.8	90.0		104.45	-95.4	-0.6	94.5		104.40	-96.9	-2.2	94.4		103.40	-125.5	-33.8	76.4		102.55	-149.8	-60.6	36.3		102.48	-151.8	-64.2	31.9		102.43	-152.9	-66.0	28.7		101.83	-158.8	-73.2	-14.2		101.43	-156.6	-63.2	-41.8		100.44	-132.0	6.6	-73.4		99.44	-118.0	45.0	-42.5		98.45	-126.4	22.1	-4.1		98.10	-133.3	0.0	0.0	
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Dipl.-Ing. A. Forner



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Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 101.43 0.0 0.0 0.0 100.44 0.0 0.0 0.0 99.44 0.0 0.0 0.0 98.45 0.0 0.0 0.0 98.10 0.0 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] </div> <div> 107.45 -9.0 - - - 107.40 -9.0 - - - 107.00 -8.7 - - - 106.95 -8.7 - - - 106.95 -8.7 - - - 106.89 -8.6 - - - 106.89 -8.6 - - - 106.84 -8.6 - - - 106.50 -8.3 - - - 106.45 -8.3 - - - 106.45 -8.3 - - - 106.40 -8.2 - - - 106.36 -8.2 - - - 106.31 -8.2 - - - 106.31 -8.2 - - - 106.26 -8.1 - - - 105.55 -7.6 - - - 105.50 -7.5 - - - 105.50 -7.5 - - - 105.45 -7.5 - - - 105.45 -7.5 - - - 105.40 -7.5 - - - 105.40 -7.5 - - - 105.35 -7.4 - - - 105.35 -7.4 - - - 105.30 -7.4 - - - 105.05 -7.1 - - - 105.00 -7.1 - - - 105.00 -7.1 - - - 104.95 -7.1 - - - 104.50 -6.6 - - - 104.45 -6.6 - - - 104.45 -6.6 - - - 104.40 -6.5 - - - 104.40 -6.5 - - - 104.35 -6.5 - - - 103.45 -5.6 - - - 103.40 -5.5 - - - 103.40 -5.5 - - - 103.35 -5.4 - - - 102.60 -4.6 - - - 102.55 -4.5 0.00 0.00 0.00 102.55 -4.5 0.00 0.00 11.73 102.48 -4.4 0.00 0.00 13.54 102.48 -4.4 0.80 3.57 3.57 102.43 -4.4 0.80 3.53 7.01 102.43 -4.4 1.60 7.01 7.01 102.38 -4.3 1.60 6.92 10.45 101.88 -3.7 11.99 44.84 44.84 101.83 -3.7 11.99 44.13 48.28 101.83 -3.7 13.12 48.28 48.28 101.78 -3.6 13.12 47.50 51.71 101.48 -3.3 22.14 72.35 72.35 101.43 -3.2 22.14 71.06 75.78 101.43 -3.2 23.62 75.79 75.78 101.38 -3.2 23.62 74.41 79.22 100.49 -2.1 50.00 107.01 141.12 100.44 -2.1 50.00 104.32 144.56 100.44 -2.1 50.00 104.32 144.56 100.39 -2.0 50.00 101.65 147.99 99.49 -1.1 50.00 55.62 209.89 </div> </div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		



Baumaßnahme:		Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):													
Auftraggeber:		Stadtverwaltung Leipzig															
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024													
<div><div><div><div><div>99.44</div><div>-1.1</div><div>50.00</div><div>53.16</div><div>213.33</div></div><div><div>99.44</div><div>-1.1</div><div>50.00</div><div>53.16</div><div>213.33</div></div><div><div>99.39</div><div>-1.0</div><div>50.00</div><div>50.70</div><div>216.77</div></div><div><div>98.50</div><div>-0.1</div><div>50.00</div><div>7.44</div><div>278.66</div></div><div><div>98.45</div><div>-0.1</div><div>50.00</div><div>5.06</div><div>282.10</div></div><div><div>98.45</div><div>-0.1</div><div>50.00</div><div>5.06</div><div>282.10</div></div><div><div>98.40</div><div>-0.1</div><div>50.00</div><div>2.68</div><div>285.54</div></div><div><div>98.15</div><div>0.2</div><div>50.00</div><div>-9.20</div><div>302.73</div></div><div><div>98.10</div><div>0.2</div><div>50.00</div><div>-11.58</div><div>306.17</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.05468858</div><div>Theoretischer Fußpunkt = 98.099 m</div><div>Einbindetiefe tg = 4.45 m</div><div>Profillänge = 9.35 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: $P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$</div><div>$G_{k} = 176.93 \text{ kN/m}$</div><div>$G'_{k} = 0.00 \text{ kN/m}$</div><div>$P_{v,k} = 0.00 \text{ kN/m}$</div><div>$E_{av,k} = 51.27 \text{ kN/m}$ ($E_{ah,k} = 291.67 \text{ kN/m}$)</div><div>$B_{v,k} = 98.51$</div><div>Summe $V_{k} = 129.70 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand $D = 0.88 \text{ m}$</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div><div>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div><div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung</div><div><table><tr><td>von</td><td>bis</td><td>$q_{s,k} \text{ [kN/m}^2\text{]}$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.48</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.10 m = 1.000 m²/m/m $\implies R_{s1,d}$</div><div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 240.90 / 1.40 = 172.07 \text{ kN/m}$</div><div>$R_{d} = R_{b,d} + R_{s1,d} = 1037.12 \text{ kN/m}$</div><div>Einwirkungen</div><div>$V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 58.96 + 0.00 = 271.28 \text{ kN/m}$</div><div>$\implies \mu = V_{d} / R_{d} = 271.28 / 1037.12 = 0.26$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div></div>						von	bis	$q_{s,k} \text{ [kN/m}^2\text{]}$	Bezeichnung	102.55	102.48	0.00	S2: Auelehm	102.48	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} \text{ [kN/m}^2\text{]}$	Bezeichnung														
102.55	102.48	0.00	S2: Auelehm														
102.48	98.10	55.00	s3: Flussskies, -sand														
Schnitt: Anlage H2 Schnitt 8R				Seite Anlage H2/17													
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)				Archiv Nr.: 12117													
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025															

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																																																																									
Auftraggeber:	Stadtverwaltung Leipzig	-																																																																									
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024																																																																									
<div><div>4</div><div>LF 2.2 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand</p> <p>=====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 13_BS 8_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.55</td><td>1.05</td><td>0.29</td><td>0.28</td><td>0.58</td><td>10.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Lasten (zweiseitig begrenzt)</p> <table><tr><td>Nr.</td><td>sig(v)</td><td>x(links)</td><td>x(rechts)</td><td>Tiefe</td><td>y(1)</td><td>y(2)</td><td>y(3)</td><td>y(4)</td><td>Verkehrslast</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>1</td><td>10.00</td><td>0.00</td><td>1.55</td><td>107.45</td><td>107.45</td><td>107.45</td><td>105.87</td><td>105.18</td><td>nein</td></tr></table> <p>Steuerparameter = 0.50</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>102.48</td><td>5.000</td><td>5.000</td></tr><tr><td>102.48</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.55	1.05	0.29	0.28	0.58	10.00	nein	Nr.	sig(v)	x(links)	x(rechts)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	1	10.00	0.00	1.55	107.45	107.45	107.45	105.87	105.18	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	102.48	5.000	5.000	102.48	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																																			
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																																																			
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[-]	[kN/m²]	[m]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]																																																																		
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Schnitt:	Anlage H2 Schnitt 8R	Seite Anlage H2/18																																																																									
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 13_BS 8_LF2.2 (mit Lasten).vrb																																																																									
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																									

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																						
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<div>Ausnutzungsgrad $\mu_{ue} = 310.910 / 380.878 = 0.816$ Bettungslager $B_{h,d} = 310.910 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 380.878 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>N_d</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-118.35</td><td>-102.56</td><td>-102.56</td><td>-8.13</td><td>6.900E+4</td><td>2.100E+7</td><td>-130.77</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>N_d</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-8.6</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-8.8</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.1</td><td>0.1</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.3</td><td>0.1</td><td>-118.35</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 8\Rechtes Ufer\10_BS 8_LF1.1 (ohne Lasten).vrb eingeliesen. Anker/Steife Tiefe Vorverformung</div> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0075</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma_{m',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.35</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.48</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.35</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.48</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>107.448</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>106.450</td><td>106.308</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>106.308</td><td>105.872</td><td>32.789</td><td>32.789</td><td>0.00</td></tr><tr><td>105.872</td><td>105.500</td><td>32.789</td><td>32.789</td><td>0.00</td></tr></table>			Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-118.35	-102.56	-102.56	-8.13	6.900E+4	2.100E+7	-130.77	x	y	$w_{x,d}$	$w_{y,d}$	N_d	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.6	0.0	-118.35	0.00	0.00	-0.90	106.95	-8.8	0.0	-118.35	0.00	0.00	-0.90	106.95	-8.8	0.0	-118.35	0.00	0.00	-0.80	106.95	-8.9	0.0	-118.35	0.00	0.00	-0.70	106.95	-9.1	0.0	-118.35	0.00	0.00	-0.60	106.95	-9.3	0.0	-118.35	0.00	0.00	-0.50	106.95	-9.5	0.0	-118.35	0.00	0.00	-0.40	106.95	-9.6	0.0	-118.35	0.00	0.00	-0.30	106.95	-9.8	0.0	-118.35	0.00	0.00	-0.20	106.95	-10.0	0.0	-118.35	0.00	0.00	-0.10	106.95	-10.1	0.1	-118.35	0.00	0.00	0.00	106.95	-10.3	0.1	-118.35	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0075	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.35	0.390	0.461	30.000	10.00	57.80	0.179	2	102.48	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	32.789	32.789	0.00	107.448	106.950	32.789	32.789	0.00	106.950	106.886	32.789	32.789	0.00	106.886	106.450	32.789	32.789	0.00	106.450	106.308	32.789	32.789	0.00	106.308	105.872	32.789	32.789	0.00	105.872	105.500	32.789	32.789	0.00	<div>Statisch geprüft für Standssicherheit Dipl.-Ing. A. Forner</div>
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<table><tr><td>105.500</td><td>105.450</td><td>32.789</td><td>32.789</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>32.789</td><td>32.789</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>105.183</td><td>32.789</td><td>32.789</td><td>1.50</td><td>3.17</td></tr><tr><td>105.183</td><td>105.000</td><td>32.789</td><td>32.789</td><td>3.17</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>27.324</td><td>27.324</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.350</td><td>27.324</td><td>27.324</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>103.400</td><td>27.324</td><td>27.324</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.550</td><td>27.324</td><td>27.324</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.480</td><td>44.541</td><td>44.839</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.430</td><td>33.132</td><td>33.336</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>101.833</td><td>33.336</td><td>35.787</td><td>5.00</td><td>5.00</td></tr><tr><td>101.833</td><td>101.434</td><td>35.787</td><td>37.420</td><td>5.00</td><td>5.00</td></tr><tr><td>101.434</td><td>100.439</td><td>37.420</td><td>41.504</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>99.443</td><td>41.504</td><td>45.588</td><td>5.00</td><td>5.00</td></tr><tr><td>99.443</td><td>98.447</td><td>45.588</td><td>49.672</td><td>5.00</td><td>5.00</td></tr><tr><td>98.447</td><td>98.099</td><td>49.672</td><td>51.102</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.102</td><td>125.335</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.43</td><td>-2.20</td><td>-4.32</td></tr><tr><td>102.43</td><td>101.83</td><td>-4.32</td><td>-29.71</td></tr><tr><td>101.83</td><td>101.43</td><td>-29.71</td><td>-46.64</td></tr><tr><td>101.43</td><td>100.44</td><td>-46.64</td><td>-88.96</td></tr><tr><td>100.44</td><td>99.44</td><td>-88.96</td><td>-131.28</td></tr><tr><td>99.44</td><td>98.45</td><td>-131.28</td><td>-173.60</td></tr><tr><td>98.45</td><td>98.10</td><td>-173.60</td><td>-188.41</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.41</td><td>-957.65</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-17.7</td><td>-18.9</td><td>-4.7</td><td>-118.4</td></tr><tr><td>106.95</td><td>-17.7</td><td>99.5</td><td>-4.7</td><td></td></tr><tr><td>106.89</td><td>-20.0</td><td>97.1</td><td>1.6</td><td></td></tr><tr><td>106.45</td><td>-35.5</td><td>80.6</td><td>40.3</td><td></td></tr><tr><td>106.31</td><td>-40.5</td><td>75.3</td><td>51.4</td><td></td></tr><tr><td>105.87</td><td>-56.0</td><td>58.8</td><td>80.7</td><td></td></tr><tr><td>105.50</td><td>-69.2</td><td>44.8</td><td>99.9</td><td></td></tr><tr><td>105.45</td><td>-71.0</td><td>42.9</td><td>102.1</td><td></td></tr><tr><td>105.35</td><td>-74.5</td><td>39.0</td><td>106.2</td><td></td></tr><tr><td>105.18</td><td>-79.8</td><td>32.3</td><td>112.2</td><td></td></tr><tr><td>105.00</td><td>-85.7</td><td>24.5</td><td>117.4</td><td></td></tr><tr><td>104.40</td><td>-103.8</td><td>2.0</td><td>125.3</td><td></td></tr><tr><td>104.35</td><td>-105.3</td><td>0.1</td><td>125.4</td><td></td></tr><tr><td>103.40</td><td>-134.0</td><td>-35.4</td><td>108.6</td><td></td></tr><tr><td>102.55</td><td>-159.6</td><td>-67.2</td><td>65.0</td><td></td></tr><tr><td>102.48</td><td>-161.8</td><td>-71.2</td><td>60.2</td><td></td></tr><tr><td>102.43</td><td>-162.8</td><td>-73.2</td><td>56.6</td><td></td></tr><tr><td>101.83</td><td>-168.7</td><td>-82.8</td><td>8.6</td><td></td></tr><tr><td>101.43</td><td>-166.5</td><td>-74.5</td><td>-23.1</td><td></td></tr></table>								105.500	105.450	32.789	32.789	0.00	0.50	105.450	105.350	32.789	32.789	0.50	1.50	105.350	105.183	32.789	32.789	1.50	3.17	105.183	105.000	32.789	32.789	3.17	5.00	105.000	104.400	27.324	27.324	5.00	5.00	104.400	104.350	27.324	27.324	5.00	5.00	104.350	103.400	27.324	27.324	5.00	5.00	103.400	102.550	27.324	27.324	5.00	5.00	102.550	102.480	44.541	44.839	5.00	5.00	102.480	102.430	33.132	33.336	5.00	5.00	102.430	101.833	33.336	35.787	5.00	5.00	101.833	101.434	35.787	37.420	5.00	5.00	101.434	100.439	37.420	41.504	5.00	5.00	100.439	99.443	41.504	45.588	5.00	5.00	99.443	98.447	45.588	49.672	5.00	5.00	98.447	98.099	49.672	51.102	5.00	5.00	98.099	80.000	51.102	125.335	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.43	-2.20	-4.32	102.43	101.83	-4.32	-29.71	101.83	101.43	-29.71	-46.64	101.43	100.44	-46.64	-88.96	100.44	99.44	-88.96	-131.28	99.44	98.45	-131.28	-173.60	98.45	98.10	-173.60	-188.41	98.10	80.00	-188.41	-957.65	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-17.7	-18.9	-4.7	-118.4	106.95	-17.7	99.5	-4.7		106.89	-20.0	97.1	1.6		106.45	-35.5	80.6	40.3		106.31	-40.5	75.3	51.4		105.87	-56.0	58.8	80.7		105.50	-69.2	44.8	99.9		105.45	-71.0	42.9	102.1		105.35	-74.5	39.0	106.2		105.18	-79.8	32.3	112.2		105.00	-85.7	24.5	117.4		104.40	-103.8	2.0	125.3		104.35	-105.3	0.1	125.4		103.40	-134.0	-35.4	108.6		102.55	-159.6	-67.2	65.0		102.48	-161.8	-71.2	60.2		102.43	-162.8	-73.2	56.6		101.83	-168.7	-82.8	8.6		101.43	-166.5	-74.5	-23.1	
105.500	105.450	32.789	32.789	0.00	0.50																																																																																																																																																																																																																																																																																																																			
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98.45	98.10	-173.60	-188.41																																																																																																																																																																																																																																																																																																																					
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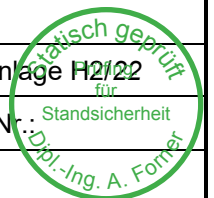
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):			
Auftraggeber:		Stadtverwaltung Leipzig					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024			
<div><div><div><div>100.44</div><div>-140.2</div><div>-4.5</div><div>-67.5</div></div><div><div>99.44</div><div>-120.9</div><div>43.1</div><div>-42.5</div></div><div><div>98.45</div><div>-126.8</div><div>22.8</div><div>-4.2</div></div><div><div>98.10</div><div>-133.6</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.4</div><div>-16.4</div><div>-4.1</div><div>-102.6</div></div><div><div>106.95</div><div>-15.4</div><div>86.2</div><div>-4.1</div><div></div></div><div><div>106.89</div><div>-17.4</div><div>84.1</div><div>1.3</div><div></div></div><div><div>106.45</div><div>-30.9</div><div>69.8</div><div>34.9</div><div></div></div><div><div>106.31</div><div>-35.2</div><div>65.1</div><div>44.5</div><div></div></div><div><div>105.87</div><div>-48.7</div><div>50.8</div><div>69.8</div><div></div></div><div><div>105.50</div><div>-60.2</div><div>38.6</div><div>86.4</div><div></div></div><div><div>105.45</div><div>-61.7</div><div>37.0</div><div>88.3</div><div></div></div><div><div>105.35</div><div>-64.8</div><div>33.6</div><div>91.8</div><div></div></div><div><div>105.18</div><div>-69.4</div><div>27.7</div><div>96.9</div><div></div></div><div><div>105.00</div><div>-74.5</div><div>21.0</div><div>101.4</div><div></div></div><div><div>104.40</div><div>-90.3</div><div>1.6</div><div>108.2</div><div></div></div><div><div>104.35</div><div>-91.6</div><div>0.0</div><div>108.2</div><div></div></div><div><div>103.40</div><div>-116.5</div><div>-30.7</div><div>93.6</div><div></div></div><div><div>102.55</div><div>-138.8</div><div>-58.2</div><div>55.8</div><div></div></div><div><div>102.48</div><div>-140.8</div><div>-61.7</div><div>51.6</div><div></div></div><div><div>102.43</div><div>-141.7</div><div>-63.4</div><div>48.5</div><div></div></div><div><div>101.83</div><div>-146.9</div><div>-71.7</div><div>7.0</div><div></div></div><div><div>101.43</div><div>-145.0</div><div>-64.4</div><div>-20.5</div><div></div></div><div><div>100.44</div><div>-122.1</div><div>-3.7</div><div>-58.8</div><div></div></div><div><div>99.44</div><div>-105.3</div><div>37.5</div><div>-37.0</div><div></div></div><div><div>98.45</div><div>-110.4</div><div>19.8</div><div>-3.6</div><div></div></div><div><div>98.10</div><div>-116.3</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-15.4</div><div>-16.4</div><div>-4.1</div><div>-102.6</div></div><div><div>106.95</div><div>-15.4</div><div>86.2</div><div>-4.1</div><div></div></div><div><div>106.89</div><div>-17.4</div><div>84.1</div><div>1.3</div><div></div></div><div><div>106.45</div><div>-30.9</div><div>69.8</div><div>34.9</div><div></div></div><div><div>106.31</div><div>-35.2</div><div>65.1</div><div>44.5</div><div></div></div><div><div>105.87</div><div>-48.7</div><div>50.8</div><div>69.8</div><div></div></div><div><div>105.50</div><div>-60.2</div><div>38.6</div><div>86.4</div><div></div></div><div><div>105.45</div><div>-61.7</div><div>37.0</div><div>88.3</div><div></div></div><div><div>105.35</div><div>-64.8</div><div>33.6</div><div>91.8</div><div></div></div><div><div>105.18</div><div>-69.4</div><div>27.7</div><div>96.9</div><div></div></div><div><div>105.00</div><div>-74.5</div><div>21.0</div><div>101.4</div><div></div></div><div><div>104.40</div><div>-90.3</div><div>1.6</div><div>108.2</div><div></div></div><div><div>104.35</div><div>-91.6</div><div>0.0</div><div>108.2</div><div></div></div><div><div>103.40</div><div>-116.5</div><div>-30.7</div><div>93.6</div><div></div></div><div><div>102.55</div><div>-138.8</div><div>-58.2</div><div>55.8</div><div></div></div><div><div>102.48</div><div>-140.8</div><div>-61.7</div><div>51.6</div><div></div></div><div><div>102.43</div><div>-141.7</div><div>-63.4</div><div>48.5</div><div></div></div><div><div>101.83</div><div>-146.9</div><div>-71.7</div><div>7.0</div><div></div></div><div><div>101.43</div><div>-145.0</div><div>-64.4</div><div>-20.5</div><div></div></div><div><div>100.44</div><div>-122.1</div><div>-3.7</div><div>-58.8</div><div></div></div><div><div>99.44</div><div>-105.3</div><div>37.5</div><div>-37.0</div><div></div></div><div><div>98.45</div><div>-110.4</div><div>19.8</div><div>-3.6</div><div></div></div><div><div>98.10</div><div>-116.3</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div>							
Schnitt: Anlage H2 Schnitt 8R				Seite Anlage H2/21			
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)				Archiv Nr.:			
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025					

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																		
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.36</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.26</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.87</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.87</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.82</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr></table>						106.31	0.0	0.0	0.0	105.87	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.35	0.0	0.0	0.0	105.18	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	104.35	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.43	0.0	0.0	0.0	101.83	0.0	0.0	0.0	101.43	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.44	0.0	0.0	0.0	98.45	0.0	0.0	0.0	98.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.3	-	-	-	107.40	-9.3	-	-	-	107.00	-9.0	-	-	-	106.95	-9.0	-	-	-	106.95	-9.0	-	-	-	106.89	-8.9	-	-	-	106.89	-8.9	-	-	-	106.84	-8.9	-	-	-	106.50	-8.7	-	-	-	106.45	-8.6	-	-	-	106.45	-8.6	-	-	-	106.40	-8.6	-	-	-	106.36	-8.6	-	-	-	106.31	-8.6	-	-	-	106.31	-8.6	-	-	-	106.26	-8.5	-	-	-	105.91	-8.3	-	-	-	105.87	-8.3	-	-	-	105.87	-8.3	-	-	-	105.82	-8.2	-	-	-	105.55	-8.0	-	-	-	105.50	-8.0	-	-	-	105.50	-8.0	-	-	-	105.45	-7.9	-	-	-	105.45	-7.9	-	-	-	105.40	-7.9	-	-	-	105.40	-7.9	-	-	-	105.35	-7.9	-	-	-	105.35	-7.9	-	-	-	105.29	-7.8	-	-	-	105.24	-7.8	-	-	-	105.18	-7.7	-	-	-	105.18	-7.7	-	-	-	105.14	-7.7	-	-	-	105.05	-7.6	-	-	-	105.00	-7.6	-	-	-	105.00	-7.6	-	-	-	104.95	-7.5	-	-	-	104.45	-7.1	-	-	-	104.40	-7.0	-	-	-	104.40	-7.0	-	-	-	104.35	-7.0	-	-	-	104.35	-7.0	-	-	-	104.30	-7.0	-	-	-	103.45	-6.1	-	-	-	103.40	-6.0	-	-	-	103.40	-6.0	-	-	-
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																							
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 14_BS 8_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.50 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.50 108.50 108.49 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.50 108.50 108.50 106.44 105.54 ja</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -27.80 0.00 0.00 0.00 43.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.40 m</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig			
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 170.567 / 272.724 = 0.625$</div> <div>Bettungslager $B_{h,d} = 170.567 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 272.724 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge N,d N(g+q+w),k N(g+w),k Nw,k EA EI N,d'</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -345.13 -288.05 -209.33 -49.14 3.900E+7 2.100E+7 -384.98 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y wx,d wy,d N,d Q,d M,d</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-7.47 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-7.47 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-6.64 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-5.81 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-4.98 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-4.15 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-3.32 103.72 -6.8 0.0 -345.53 0.00 0.00</div> <div>-2.49 103.72 -6.8 0.1 -345.53 0.00 0.00</div> <div>-1.66 103.72 -6.8 0.1 -345.53 0.00 0.00</div> <div>-0.83 103.72 -6.9 0.1 -345.53 0.00 0.00</div> <div>0.00 103.72 -6.9 0.1 -345.53 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0059</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{a,k}$ $\phi_{i,k}$ c(pas),k c(akt),k d(p)/ϕ_i d(a)/ϕ_i q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach $\phi_{i,k}$ delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.35 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.48 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.500 108.498 0.000 14.416 0.00 0.00</div> <div>108.498 108.494 14.416 19.528 0.00 0.00</div> <div>108.494 107.500 19.528 26.888 0.00 0.00</div>			
Schnitt:	Anlage H2	Schnitt 8R	Seite Anlage H2/25
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>107.500</td><td>107.450</td><td>26.888</td><td>27.258</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>106.500</td><td>27.258</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.500</td><td>106.444</td><td>34.292</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.444</td><td>105.537</td><td>34.710</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>105.537</td><td>105.500</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.350</td><td>26.109</td><td>26.693</td><td>0.00</td><td>1.50</td></tr><tr><td>105.350</td><td>104.450</td><td>32.627</td><td>36.456</td><td>1.50</td><td>10.50</td></tr><tr><td>104.450</td><td>103.720</td><td>36.456</td><td>39.562</td><td>10.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.450</td><td>39.562</td><td>40.711</td><td>17.80</td><td>20.50</td></tr><tr><td>103.450</td><td>102.550</td><td>40.711</td><td>44.541</td><td>20.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.480</td><td>44.541</td><td>44.839</td><td>0.00</td><td>0.00</td></tr><tr><td>102.480</td><td>102.450</td><td>33.132</td><td>33.255</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>101.500</td><td>33.255</td><td>37.153</td><td>0.00</td><td>0.00</td></tr><tr><td>101.500</td><td>100.499</td><td>37.153</td><td>41.255</td><td>0.00</td><td>0.00</td></tr><tr><td>100.499</td><td>99.499</td><td>41.255</td><td>45.358</td><td>0.00</td><td>0.00</td></tr><tr><td>99.499</td><td>98.499</td><td>45.358</td><td>49.461</td><td>0.00</td><td>0.00</td></tr><tr><td>98.499</td><td>98.099</td><td>49.461</td><td>51.102</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.102</td><td>125.335</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.50</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.45</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.45</td><td>-2.20</td><td>-3.47</td></tr><tr><td>102.45</td><td>101.50</td><td>-3.47</td><td>-43.86</td></tr><tr><td>101.50</td><td>100.50</td><td>-43.86</td><td>-86.38</td></tr><tr><td>100.50</td><td>99.50</td><td>-86.38</td><td>-128.89</td></tr><tr><td>99.50</td><td>98.50</td><td>-128.89</td><td>-171.41</td></tr><tr><td>98.50</td><td>98.10</td><td>-171.41</td><td>-188.41</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.41</td><td>-957.65</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.50</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.49</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.50</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-34.0</td><td>-30.6</td><td>-15.2</td><td></td></tr><tr><td>107.45</td><td>-86.2</td><td>-30.6</td><td>-48.6</td><td></td></tr><tr><td>106.50</td><td>-119.9</td><td>-66.5</td><td>-94.1</td><td></td></tr><tr><td>106.44</td><td>-122.0</td><td>-68.8</td><td>-97.9</td><td></td></tr><tr><td>105.54</td><td>-153.6</td><td>-101.5</td><td>-176.0</td><td></td></tr><tr><td>105.50</td><td>-154.8</td><td>-102.6</td><td>-179.8</td><td></td></tr><tr><td>105.35</td><td>-159.8</td><td>-107.3</td><td>-195.5</td><td></td></tr><tr><td>104.45</td><td>-188.9</td><td>-149.5</td><td>-310.0</td><td></td></tr><tr><td>103.72</td><td>-213.4</td><td>-193.8</td><td>-434.8</td><td>-345.5</td></tr><tr><td>103.72</td><td>-213.4</td><td>151.7</td><td>-434.8</td><td></td></tr><tr><td>103.45</td><td>-222.6</td><td>133.1</td><td>-396.3</td><td></td></tr><tr><td>102.55</td><td>-254.0</td><td>61.9</td><td>-307.5</td><td></td></tr><tr><td>102.48</td><td>-256.1</td><td>58.4</td><td>-303.3</td><td></td></tr><tr><td>102.45</td><td>-256.7</td><td>57.3</td><td>-301.5</td><td></td></tr><tr><td>101.50</td><td>-261.9</td><td>57.9</td><td>-251.9</td><td></td></tr><tr><td>100.50</td><td>-249.5</td><td>98.5</td><td>-171.4</td><td></td></tr><tr><td>99.50</td><td>-254.8</td><td>89.9</td><td>-73.0</td><td></td></tr></table>								107.500	107.450	26.888	27.258	0.00	0.00	107.450	106.500	27.258	34.292	0.00	0.00	106.500	106.444	34.292	34.710	0.00	0.00	106.444	105.537	34.710	25.836	0.00	0.00	105.537	105.500	25.836	26.109	0.00	0.00	105.500	105.350	26.109	26.693	0.00	1.50	105.350	104.450	32.627	36.456	1.50	10.50	104.450	103.720	36.456	39.562	10.50	17.80	103.720	103.450	39.562	40.711	17.80	20.50	103.450	102.550	40.711	44.541	20.50	29.50	102.550	102.480	44.541	44.839	0.00	0.00	102.480	102.450	33.132	33.255	0.00	0.00	102.450	101.500	33.255	37.153	0.00	0.00	101.500	100.499	37.153	41.255	0.00	0.00	100.499	99.499	41.255	45.358	0.00	0.00	99.499	98.499	45.358	49.461	0.00	0.00	98.499	98.099	49.461	51.102	0.00	0.00	98.099	80.000	51.102	125.335	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.50	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.45	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.45	-2.20	-3.47	102.45	101.50	-3.47	-43.86	101.50	100.50	-43.86	-86.38	100.50	99.50	-86.38	-128.89	99.50	98.50	-128.89	-171.41	98.50	98.10	-171.41	-188.41	98.10	80.00	-188.41	-957.65	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.50	0.0	0.0	0.0		108.50	-0.1	0.0	0.0		108.49	-0.2	-0.1	0.0		107.50	-32.3	-29.0	-13.7		107.45	-34.0	-30.6	-15.2		107.45	-86.2	-30.6	-48.6		106.50	-119.9	-66.5	-94.1		106.44	-122.0	-68.8	-97.9		105.54	-153.6	-101.5	-176.0		105.50	-154.8	-102.6	-179.8		105.35	-159.8	-107.3	-195.5		104.45	-188.9	-149.5	-310.0		103.72	-213.4	-193.8	-434.8	-345.5	103.72	-213.4	151.7	-434.8		103.45	-222.6	133.1	-396.3		102.55	-254.0	61.9	-307.5		102.48	-256.1	58.4	-303.3		102.45	-256.7	57.3	-301.5		101.50	-261.9	57.9	-251.9		100.50	-249.5	98.5	-171.4		99.50	-254.8	89.9	-73.0	
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106.44	-102.7	-55.7	-79.7																																																																																																																																																																																																																																																																																																																																																																																													
105.54	-129.8	-83.1	-143.2																																																																																																																																																																																																																																																																																																																																																																																													
105.50	-130.9	-84.1	-146.3																																																																																																																																																																																																																																																																																																																																																																																													
105.35	-135.2	-88.2	-159.2																																																																																																																																																																																																																																																																																																																																																																																													
104.45	-160.5	-124.7	-254.1																																																																																																																																																																																																																																																																																																																																																																																													
103.72	-181.8	-162.7	-358.5	-288.1																																																																																																																																																																																																																																																																																																																																																																																												
103.72	-181.8	125.3	-358.5																																																																																																																																																																																																																																																																																																																																																																																													
103.45	-189.8	109.3	-326.8																																																																																																																																																																																																																																																																																																																																																																																													
102.55	-217.1	48.5	-255.0																																																																																																																																																																																																																																																																																																																																																																																													
102.48	-219.1	45.3	-251.7																																																																																																																																																																																																																																																																																																																																																																																													
102.45	-219.7	44.4	-250.3																																																																																																																																																																																																																																																																																																																																																																																													
101.50	-223.9	45.5	-212.2																																																																																																																																																																																																																																																																																																																																																																																													
100.50	-212.5	82.7	-146.1																																																																																																																																																																																																																																																																																																																																																																																													
99.50	-216.5	76.8	-62.7																																																																																																																																																																																																																																																																																																																																																																																													
98.50	-232.0	29.7	-6.1																																																																																																																																																																																																																																																																																																																																																																																													
98.10	-235.7	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																													
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107.45	-22.8	-8.2	-3.6																																																																																																																																																																																																																																																																																																																																																																																													
107.45	-66.3	-8.2	-31.4																																																																																																																																																																																																																																																																																																																																																																																													
106.50	-89.6	-22.6	-45.4																																																																																																																																																																																																																																																																																																																																																																																													
106.44	-91.0	-23.7	-46.7																																																																																																																																																																																																																																																																																																																																																																																													
105.54	-115.6	-44.0	-77.0																																																																																																																																																																																																																																																																																																																																																																																													
105.50	-116.7	-45.0	-78.6																																																																																																																																																																																																																																																																																																																																																																																													
105.35	-120.9	-49.1	-85.7																																																																																																																																																																																																																																																																																																																																																																																													
104.45	-146.3	-85.6	-145.4																																																																																																																																																																																																																																																																																																																																																																																													
103.72	-167.6	-123.6	-221.3	-209.3																																																																																																																																																																																																																																																																																																																																																																																												
103.72	-167.6	85.7	-221.3																																																																																																																																																																																																																																																																																																																																																																																													
103.45	-175.6	69.7	-200.3																																																																																																																																																																																																																																																																																																																																																																																													
102.55	-202.9	8.8	-164.0																																																																																																																																																																																																																																																																																																																																																																																													
102.48	-204.9	5.7	-163.5																																																																																																																																																																																																																																																																																																																																																																																													
102.45	-205.4	4.8	-163.4																																																																																																																																																																																																																																																																																																																																																																																													
101.50	-208.1	9.8	-161.7																																																																																																																																																																																																																																																																																																																																																																																													
100.50	-191.2	60.8	-124.6																																																																																																																																																																																																																																																																																																																																																																																													
99.50	-190.5	67.0	-56.7																																																																																																																																																																																																																																																																																																																																																																																													
98.50	-204.8	27.7	-5.8																																																																																																																																																																																																																																																																																																																																																																																													
98.10	-209.4	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																													
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																																																																																												
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																																																																																												
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108.49	0.0	-0.1	0.0																																																																																																																																																																																																																																																																																																																																																																																													
107.50	-5.7	-15.6	-7.8																																																																																																																																																																																																																																																																																																																																																																																													
107.45	-6.0	-16.3	-8.6																																																																																																																																																																																																																																																																																																																																																																																													
106.50	-11.3	-31.2	-31.1																																																																																																																																																																																																																																																																																																																																																																																													
106.44	-11.7	-32.0	-32.9																																																																																																																																																																																																																																																																																																																																																																																													
105.54	-14.2	-39.1	-66.2																																																																																																																																																																																																																																																																																																																																																																																													
105.50	-14.2	-39.1	-67.7																																																																																																																																																																																																																																																																																																																																																																																													
105.35	-14.2	-39.1	-73.5																																																																																																																																																																																																																																																																																																																																																																																													
104.45	-14.2	-39.1	-108.7																																																																																																																																																																																																																																																																																																																																																																																													
Schnitt:		Anlage H2 Schnitt 8R			Seite Anlage H2/27																																																																																																																																																																																																																																																																																																																																																																																											
Kapitel:		5 LF 3 (BS-T, mit Lasten)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																											
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																											

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.72 -14.2 -39.1 -137.3 -86.8 103.72 -14.2 39.6 -137.3 103.45 -14.2 39.6 -126.6 102.55 -14.2 39.6 -90.9 102.48 -14.2 39.6 -88.1 102.45 -14.2 39.6 -86.9 101.50 -15.8 35.6 -50.5 100.50 -21.3 21.8 -21.5 99.50 -26.1 9.9 -5.9 98.50 -27.2 2.0 -0.4 98.10 -26.4 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig.Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] 108.50 -20.2 - - - 108.50 -20.2 - - - 108.50 -20.2 - - - 108.49 -20.2 - - - 108.49 -20.2 - - - 108.44 -20.0 - - - 107.55 -17.1 - - - 107.50 -16.9 - - - 107.50 -16.9 - - - 107.45 -16.8 - - - 107.45 -16.8 - - - 107.40 -16.6 - - - 106.55 -13.9 - - - 106.50 -13.7 - - - 106.50 -13.7 - - - 106.44 -13.6 - - - 106.44 -13.6 - - - 106.39 -13.4 - - - 105.59 -10.9 - - - 105.54 -10.8 - - - 105.54 -10.8 - - - 105.50 -10.7 - - - 105.50 -10.7 - - - 105.45 -10.5 - - - 105.40 -10.4 - - - 105.35 -10.2 - - - 105.35 -10.2 - - - 105.30 -10.1 - - - 104.50 -7.9 - - - 104.45 -7.7 - - - 104.45 -7.7 - - - 104.40 -7.6 - - - 103.77 -6.1 - - - 103.72 -6.0 - - - 103.72 -6.0 - - - 103.67 -5.8 - - - 103.50 -5.5 - - - 103.45 -5.4 - - - 103.45 -5.4 - - - 103.40 -5.3 - - - 102.60 -3.8 - - - 102.55 -3.7 0.00 0.00 0.00 102.55 -3.7 0.00 0.00 11.73 102.48 -3.6 0.00 0.00 13.54 102.48 -3.6 0.99 3.57 3.57 102.45 -3.6 0.99 3.53 5.65 102.45 -3.6 1.59 5.65 5.65 102.40 -3.5 1.59 5.52 9.10 101.55 -2.3 29.66 67.83 67.82 101.50 -2.2 29.66 66.00 71.28 101.50 -2.2 32.03 71.28 71.28 101.45 -2.2 32.03 69.34 74.73 100.55 -1.2 50.00 60.76 136.91 100.50 -1.2 50.00 58.46 140.36 100.50 -1.2 50.00 58.46 140.36 </div> </div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/28
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																			
Auftraggeber: Stadtverwaltung Leipzig		-																																																																			
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																			
<table><tr><td>100.45</td><td>-1.1</td><td>50.00</td><td>56.20</td><td>143.82</td></tr><tr><td>99.55</td><td>-0.4</td><td>50.00</td><td>19.80</td><td>205.99</td></tr><tr><td>99.50</td><td>-0.4</td><td>50.00</td><td>17.96</td><td>209.45</td></tr><tr><td>99.50</td><td>-0.4</td><td>50.00</td><td>17.96</td><td>209.45</td></tr><tr><td>99.45</td><td>-0.3</td><td>50.00</td><td>16.13</td><td>212.90</td></tr><tr><td>98.55</td><td>0.3</td><td>50.00</td><td>-15.33</td><td>275.08</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-17.03</td><td>278.54</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-17.03</td><td>278.54</td></tr><tr><td>98.45</td><td>0.4</td><td>50.00</td><td>-18.74</td><td>281.99</td></tr><tr><td>98.15</td><td>0.6</td><td>50.00</td><td>-28.95</td><td>302.72</td></tr><tr><td>98.10</td><td>0.6</td><td>50.00</td><td>-30.65</td><td>306.17</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03898523 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 10.40 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 196.80 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 43.50 \text{ kN/m}$ $E_{av,k} = 67.61 \text{ kN/m}$ ($E_{ah,k} = 383.74 \text{ kN/m}$) $B_{v,k} = 60.81$ Summe $V_{,k} = 247.10 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.48</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = $1.000 \text{ m}^2/\text{m}/\text{m} \Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 240.90 / 1.40 = 172.07 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1037.12 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 236.16 - 0.00 + 78.82 + 52.20 = 367.17 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 367.17 / 1037.12 = 0.35$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.45	-1.1	50.00	56.20	143.82	99.55	-0.4	50.00	19.80	205.99	99.50	-0.4	50.00	17.96	209.45	99.50	-0.4	50.00	17.96	209.45	99.45	-0.3	50.00	16.13	212.90	98.55	0.3	50.00	-15.33	275.08	98.50	0.3	50.00	-17.03	278.54	98.50	0.3	50.00	-17.03	278.54	98.45	0.4	50.00	-18.74	281.99	98.15	0.6	50.00	-28.95	302.72	98.10	0.6	50.00	-30.65	306.17	von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.48	0.00	S2: Auelehm	102.48	98.10	55.00	s3: Flussskies, -sand
100.45	-1.1	50.00	56.20	143.82																																																																	
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98.50	0.3	50.00	-17.03	278.54																																																																	
98.45	0.4	50.00	-18.74	281.99																																																																	
98.15	0.6	50.00	-28.95	302.72																																																																	
98.10	0.6	50.00	-30.65	306.17																																																																	
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung																																																																		
102.55	102.48	0.00	S2: Auelehm																																																																		
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Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/29																																																																			
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																			
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																			

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 15_BS 8_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.50 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.50 108.50 108.49 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -27.80 0.00 0.00 0.00 43.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.40 m</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.48 5.000 5.000</div> <div>102.48 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 253.161 / 309.242 = 0.819$</div> <div>Bettungslager $B_{h,d} = 253.161 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 309.242 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge $N_{d'}$ $N(g+q+w)_k$ $N(g+w)_k$ $N_{w,k}$ EA EI $N_{d'}$</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -232.15 -179.66 -179.66 -49.26 3.900E+7 2.100E+7 -229.07 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y $w_{x,d}$ $w_{y,d}$ $N_{d'}$ $Q_{d'}$ $M_{d'}$</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-7.47 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-7.47 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-6.64 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-5.81 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-4.98 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-4.15 103.72 -7.5 0.0 -232.76 0.00 0.00</div> <div>-3.32 103.72 -7.6 0.0 -232.76 0.00 0.00</div> <div>-2.49 103.72 -7.6 0.1 -232.76 0.00 0.00</div> <div>-1.66 103.72 -7.6 0.1 -232.76 0.00 0.00</div> <div>-0.83 103.72 -7.6 0.1 -232.76 0.00 0.00</div> <div>0.00 103.72 -7.6 0.1 -232.76 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0059</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{a,k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.35 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.48 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.500 108.494 0.000 1.992 0.00 0.00</div> <div>108.494 107.500 1.992 9.352 0.00 0.00</div> <div>107.500 107.450 9.352 9.723 0.00 0.00</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/31
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																								
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<table><tr><td>107.450</td><td>106.500</td><td>9.723</td><td>16.756</td><td>0.00</td><td>0.00</td></tr><tr><td>106.500</td><td>105.500</td><td>16.756</td><td>24.160</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>24.160</td><td>24.355</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>24.355</td><td>24.745</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>104.450</td><td>30.124</td><td>33.953</td><td>1.50</td><td>10.50</td></tr><tr><td>104.450</td><td>103.720</td><td>33.953</td><td>37.060</td><td>10.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.450</td><td>37.060</td><td>38.208</td><td>17.80</td><td>20.50</td></tr><tr><td>103.450</td><td>102.550</td><td>38.208</td><td>42.038</td><td>20.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.480</td><td>42.038</td><td>42.336</td><td>0.00</td><td>0.00</td></tr><tr><td>102.480</td><td>102.082</td><td>31.349</td><td>32.982</td><td>0.00</td><td>0.00</td></tr><tr><td>102.082</td><td>101.484</td><td>32.982</td><td>35.433</td><td>0.00</td><td>0.00</td></tr><tr><td>101.484</td><td>100.489</td><td>35.433</td><td>39.517</td><td>0.00</td><td>0.00</td></tr><tr><td>100.489</td><td>99.493</td><td>39.517</td><td>43.601</td><td>0.00</td><td>0.00</td></tr><tr><td>99.493</td><td>98.497</td><td>43.601</td><td>47.685</td><td>0.00</td><td>0.00</td></tr><tr><td>98.497</td><td>98.099</td><td>47.685</td><td>49.319</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>49.319</td><td>123.552</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.50</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.45</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-12.42</td><td>-13.46</td></tr><tr><td>102.48</td><td>102.08</td><td>-13.37</td><td>-29.09</td></tr><tr><td>102.08</td><td>101.48</td><td>-29.09</td><td>-52.67</td></tr><tr><td>101.48</td><td>100.49</td><td>-52.67</td><td>-91.96</td></tr><tr><td>100.49</td><td>99.49</td><td>-91.96</td><td>-131.26</td></tr><tr><td>99.49</td><td>98.50</td><td>-131.26</td><td>-170.56</td></tr><tr><td>98.50</td><td>98.10</td><td>-170.56</td><td>-186.28</td></tr><tr><td>98.10</td><td>80.00</td><td>-186.28</td><td>-900.57</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.49</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.50</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-28.2</td><td>-7.8</td><td>-3.2</td><td></td></tr><tr><td>107.45</td><td>-86.9</td><td>-7.8</td><td>-40.7</td><td></td></tr><tr><td>106.50</td><td>-115.7</td><td>-23.8</td><td>-55.1</td><td></td></tr><tr><td>105.50</td><td>-149.3</td><td>-49.9</td><td>-91.2</td><td></td></tr><tr><td>105.45</td><td>-151.1</td><td>-51.5</td><td>-93.7</td><td></td></tr><tr><td>105.35</td><td>-154.6</td><td>-54.8</td><td>-99.0</td><td></td></tr><tr><td>104.45</td><td>-186.2</td><td>-98.8</td><td>-167.0</td><td></td></tr><tr><td>103.72</td><td>-212.6</td><td>-145.8</td><td>-255.6</td><td>-232.8</td></tr><tr><td>103.72</td><td>-212.6</td><td>87.0</td><td>-255.6</td><td></td></tr><tr><td>103.45</td><td>-222.6</td><td>67.0</td><td>-234.8</td><td></td></tr><tr><td>102.55</td><td>-256.7</td><td>-9.4</td><td>-207.7</td><td></td></tr><tr><td>102.48</td><td>-258.7</td><td>-13.2</td><td>-208.5</td><td></td></tr><tr><td>102.08</td><td>-261.3</td><td>-12.0</td><td>-214.0</td><td></td></tr><tr><td>101.48</td><td>-254.8</td><td>14.5</td><td>-214.6</td><td></td></tr><tr><td>100.49</td><td>-233.0</td><td>81.8</td><td>-162.8</td><td></td></tr><tr><td>99.49</td><td>-233.7</td><td>87.6</td><td>-73.4</td><td></td></tr><tr><td>98.50</td><td>-252.4</td><td>35.9</td><td>-7.4</td><td></td></tr><tr><td>98.10</td><td>-257.6</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	106.500	9.723	16.756	0.00	0.00	106.500	105.500	16.756	24.160	0.00	0.00	105.500	105.450	24.160	24.355	0.00	0.50	105.450	105.350	24.355	24.745	0.50	1.50	105.350	104.450	30.124	33.953	1.50	10.50	104.450	103.720	33.953	37.060	10.50	17.80	103.720	103.450	37.060	38.208	17.80	20.50	103.450	102.550	38.208	42.038	20.50	29.50	102.550	102.480	42.038	42.336	0.00	0.00	102.480	102.082	31.349	32.982	0.00	0.00	102.082	101.484	32.982	35.433	0.00	0.00	101.484	100.489	35.433	39.517	0.00	0.00	100.489	99.493	39.517	43.601	0.00	0.00	99.493	98.497	43.601	47.685	0.00	0.00	98.497	98.099	47.685	49.319	0.00	0.00	98.099	80.000	49.319	123.552	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.50	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.45	102.55	0.00	0.00	102.55	102.48	-12.42	-13.46	102.48	102.08	-13.37	-29.09	102.08	101.48	-29.09	-52.67	101.48	100.49	-52.67	-91.96	100.49	99.49	-91.96	-131.26	99.49	98.50	-131.26	-170.56	98.50	98.10	-170.56	-186.28	98.10	80.00	-186.28	-900.57	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.50	0.0	0.0	0.0		108.49	-0.1	0.0	0.0		107.50	-26.7	-7.2	-2.8		107.45	-28.2	-7.8	-3.2		107.45	-86.9	-7.8	-40.7		106.50	-115.7	-23.8	-55.1		105.50	-149.3	-49.9	-91.2		105.45	-151.1	-51.5	-93.7		105.35	-154.6	-54.8	-99.0		104.45	-186.2	-98.8	-167.0		103.72	-212.6	-145.8	-255.6	-232.8	103.72	-212.6	87.0	-255.6		103.45	-222.6	67.0	-234.8		102.55	-256.7	-9.4	-207.7		102.48	-258.7	-13.2	-208.5		102.08	-261.3	-12.0	-214.0		101.48	-254.8	14.5	-214.6		100.49	-233.0	81.8	-162.8		99.49	-233.7	87.6	-73.4		98.50	-252.4	35.9	-7.4		98.10	-257.6	0.0	0.0	
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0.00	0.00	108.50	102.55																																																																																																																																																																																																																																																																																																											
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2	102.48	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																								
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																								
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99.49	98.50	-131.26	-170.56																																																																																																																																																																																																																																																																																																											
98.50	98.10	-170.56	-186.28																																																																																																																																																																																																																																																																																																											
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103.72	-212.6	87.0	-255.6																																																																																																																																																																																																																																																																																																											
103.45	-222.6	67.0	-234.8																																																																																																																																																																																																																																																																																																											
102.55	-256.7	-9.4	-207.7																																																																																																																																																																																																																																																																																																											
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102.08	-261.3	-12.0	-214.0																																																																																																																																																																																																																																																																																																											
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<p>Schnittgrößen ([g+q+w],k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr> <tr><td>108.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr> <tr><td>108.49</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr> <tr><td>107.50</td><td>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr> <tr><td>107.45</td><td>-22.1</td><td>-6.1</td><td>-2.5</td><td></td></tr> <tr><td>107.45</td><td>-65.6</td><td>-6.1</td><td>-30.3</td><td></td></tr> <tr><td>106.50</td><td>-88.2</td><td>-18.7</td><td>-41.6</td><td></td></tr> <tr><td>105.50</td><td>-114.5</td><td>-39.2</td><td>-69.9</td><td></td></tr> <tr><td>105.45</td><td>-115.9</td><td>-40.4</td><td>-71.8</td><td></td></tr> <tr><td>105.35</td><td>-118.7</td><td>-42.9</td><td>-76.0</td><td></td></tr> <tr><td>104.45</td><td>-143.5</td><td>-77.2</td><td>-129.2</td><td></td></tr> <tr><td>103.72</td><td>-164.2</td><td>-113.4</td><td>-198.3</td><td>-179.7</td></tr> <tr><td>103.72</td><td>-164.2</td><td>66.2</td><td>-198.3</td><td></td></tr> <tr><td>103.45</td><td>-172.1</td><td>50.9</td><td>-182.5</td><td></td></tr> <tr><td>102.55</td><td>-198.8</td><td>-7.7</td><td>-162.1</td><td></td></tr> <tr><td>102.48</td><td>-200.6</td><td>-10.7</td><td>-162.8</td><td></td></tr> <tr><td>102.08</td><td>-202.7</td><td>-9.7</td><td>-167.2</td><td></td></tr> <tr><td>101.48</td><td>-197.6</td><td>11.1</td><td>-167.9</td><td></td></tr> <tr><td>100.49</td><td>-180.6</td><td>64.0</td><td>-127.5</td><td></td></tr> <tr><td>99.49</td><td>-181.2</td><td>68.6</td><td>-57.5</td><td></td></tr> <tr><td>98.50</td><td>-195.9</td><td>28.1</td><td>-5.8</td><td></td></tr> <tr><td>98.10</td><td>-199.9</td><td>0.0</td><td>0.0</td><td></td></tr> </table> <p>Schnittgrößen (g+w,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr> <tr> 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kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.50</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.55</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-14.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.55</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.48</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>23.55</td></tr><tr><td>102.48</td><td>-3.8</td><td>5.00</td><td>19.21</td><td>23.39</td></tr><tr><td>102.43</td><td>-3.8</td><td>5.00</td><td>18.83</td><td>26.83</td></tr><tr><td>102.13</td><td>-3.3</td><td>14.25</td><td>47.46</td><td>47.46</td></tr><tr><td>102.08</td><td>-3.3</td><td>14.25</td><td>46.46</td><td>50.90</td></tr><tr><td>102.08</td><td>-3.3</td><td>15.62</td><td>50.90</td><td>50.90</td></tr><tr><td>102.03</td><td>-3.2</td><td>15.62</td><td>49.82</td><td>54.34</td></tr><tr><td>101.53</td><td>-2.5</td><td>35.02</td><td>88.73</td><td>88.73</td></tr><tr><td>101.48</td><td>-2.5</td><td>35.02</td><td>86.57</td><td>92.16</td></tr><tr><td>101.48</td><td>-2.5</td><td>37.29</td><td>92.17</td><td>92.16</td></tr><tr><td>101.43</td><td>-2.4</td><td>37.29</td><td>89.89</td><td>95.60</td></tr><tr><td>100.54</td><td>-1.4</td><td>50.00</td><td>71.36</td><td>157.50</td></tr><tr><td>100.49</td><td>-1.4</td><td>50.00</td><td>68.91</td><td>160.94</td></tr><tr><td>100.49</td><td>-1.4</td><td>50.00</td><td>68.91</td><td>160.94</td></tr><tr><td>100.44</td><td>-1.3</td><td>50.00</td><td>66.50</td><td>164.37</td></tr><tr><td>99.54</td><td>-0.5</td><td>50.00</td><td>26.80</td><td>226.27</td></tr><tr><td>99.49</td><td>-0.5</td><td>50.00</td><td>24.76</td><td>229.71</td></tr><tr><td>99.49</td><td>-0.5</td><td>50.00</td><td>24.76</td><td>229.71</td></tr><tr><td>99.44</td><td>-0.5</td><td>50.00</td><td>22.73</td><td>233.15</td></tr><tr><td>98.55</td><td>0.3</td><td>50.00</td><td>-12.50</td><td>295.04</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-14.42</td><td>298.48</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-14.42</td><td>298.48</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-16.34</td><td>301.92</td></tr><tr><td>98.15</td><td>0.6</td><td>50.00</td><td>-27.83</td><td>322.55</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.50	-16.7	-	-	-	108.50	-16.7	-	-	-	108.50	-16.7	-	-	-	108.49	-16.7	-	-	-	108.49	-16.7	-	-	-	108.44	-16.6	-	-	-	107.55	-14.5	-	-	-	107.50	-14.3	-	-	-	107.50	-14.3	-	-	-	107.45	-14.2	-	-	-	107.45	-14.2	-	-	-	107.40	-14.1	-	-	-	106.55	-12.1	-	-	-	106.50	-12.0	-	-	-	106.50	-12.0	-	-	-	106.45	-11.9	-	-	-	105.55	-9.8	-	-	-	105.50	-9.7	-	-	-	105.50	-9.7	-	-	-	105.45	-9.6	-	-	-	105.45	-9.6	-	-	-	105.40	-9.4	-	-	-	105.40	-9.4	-	-	-	105.35	-9.3	-	-	-	105.35	-9.3	-	-	-	105.30	-9.2	-	-	-	104.50	-7.5	-	-	-	104.45	-7.4	-	-	-	104.45	-7.4	-	-	-	104.40	-7.3	-	-	-	103.77	-6.0	-	-	-	103.72	-5.9	-	-	-	103.72	-5.9	-	-	-	103.67	-5.8	-	-	-	103.50	-5.5	-	-	-	103.45	-5.4	-	-	-	103.45	-5.4	-	-	-	103.40	-5.4	-	-	-	102.60	-4.0	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	21.74	102.48	-3.8	0.00	0.00	23.55	102.48	-3.8	5.00	19.21	23.39	102.43	-3.8	5.00	18.83	26.83	102.13	-3.3	14.25	47.46	47.46	102.08	-3.3	14.25	46.46	50.90	102.08	-3.3	15.62	50.90	50.90	102.03	-3.2	15.62	49.82	54.34	101.53	-2.5	35.02	88.73	88.73	101.48	-2.5	35.02	86.57	92.16	101.48	-2.5	37.29	92.17	92.16	101.43	-2.4	37.29	89.89	95.60	100.54	-1.4	50.00	71.36	157.50	100.49	-1.4	50.00	68.91	160.94	100.49	-1.4	50.00	68.91	160.94	100.44	-1.3	50.00	66.50	164.37	99.54	-0.5	50.00	26.80	226.27	99.49	-0.5	50.00	24.76	229.71	99.49	-0.5	50.00	24.76	229.71	99.44	-0.5	50.00	22.73	233.15	98.55	0.3	50.00	-12.50	295.04	98.50	0.3	50.00	-14.42	298.48	98.50	0.3	50.00	-14.42	298.48	98.45	0.3	50.00	-16.34	301.92	98.15	0.6	50.00	-27.83	322.55
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106.55	-12.1	-	-	-																																																																																																																																																																																																																																																																																																																																																
106.50	-12.0	-	-	-																																																																																																																																																																																																																																																																																																																																																
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106.45	-11.9	-	-	-																																																																																																																																																																																																																																																																																																																																																
105.55	-9.8	-	-	-																																																																																																																																																																																																																																																																																																																																																
105.50	-9.7	-	-	-																																																																																																																																																																																																																																																																																																																																																
105.50	-9.7	-	-	-																																																																																																																																																																																																																																																																																																																																																
105.45	-9.6	-	-	-																																																																																																																																																																																																																																																																																																																																																
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105.40	-9.4	-	-	-																																																																																																																																																																																																																																																																																																																																																
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104.45	-7.4	-	-	-																																																																																																																																																																																																																																																																																																																																																
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104.40	-7.3	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.77	-6.0	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.72	-5.9	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.72	-5.9	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.67	-5.8	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.50	-5.5	-	-	-																																																																																																																																																																																																																																																																																																																																																
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103.45	-5.4	-	-	-																																																																																																																																																																																																																																																																																																																																																
103.40	-5.4	-	-	-																																																																																																																																																																																																																																																																																																																																																
102.60	-4.0	-	-	-																																																																																																																																																																																																																																																																																																																																																
102.55	-3.9	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.55	-3.9	0.00	0.00	21.74																																																																																																																																																																																																																																																																																																																																																
102.48	-3.8	0.00	0.00	23.55																																																																																																																																																																																																																																																																																																																																																
102.48	-3.8	5.00	19.21	23.39																																																																																																																																																																																																																																																																																																																																																
102.43	-3.8	5.00	18.83	26.83																																																																																																																																																																																																																																																																																																																																																
102.13	-3.3	14.25	47.46	47.46																																																																																																																																																																																																																																																																																																																																																
102.08	-3.3	14.25	46.46	50.90																																																																																																																																																																																																																																																																																																																																																
102.08	-3.3	15.62	50.90	50.90																																																																																																																																																																																																																																																																																																																																																
102.03	-3.2	15.62	49.82	54.34																																																																																																																																																																																																																																																																																																																																																
101.53	-2.5	35.02	88.73	88.73																																																																																																																																																																																																																																																																																																																																																
101.48	-2.5	35.02	86.57	92.16																																																																																																																																																																																																																																																																																																																																																
101.48	-2.5	37.29	92.17	92.16																																																																																																																																																																																																																																																																																																																																																
101.43	-2.4	37.29	89.89	95.60																																																																																																																																																																																																																																																																																																																																																
100.54	-1.4	50.00	71.36	157.50																																																																																																																																																																																																																																																																																																																																																
100.49	-1.4	50.00	68.91	160.94																																																																																																																																																																																																																																																																																																																																																
100.49	-1.4	50.00	68.91	160.94																																																																																																																																																																																																																																																																																																																																																
100.44	-1.3	50.00	66.50	164.37																																																																																																																																																																																																																																																																																																																																																
99.54	-0.5	50.00	26.80	226.27																																																																																																																																																																																																																																																																																																																																																
99.49	-0.5	50.00	24.76	229.71																																																																																																																																																																																																																																																																																																																																																
99.49	-0.5	50.00	24.76	229.71																																																																																																																																																																																																																																																																																																																																																
99.44	-0.5	50.00	22.73	233.15																																																																																																																																																																																																																																																																																																																																																
98.55	0.3	50.00	-12.50	295.04																																																																																																																																																																																																																																																																																																																																																
98.50	0.3	50.00	-14.42	298.48																																																																																																																																																																																																																																																																																																																																																
98.50	0.3	50.00	-14.42	298.48																																																																																																																																																																																																																																																																																																																																																
98.45	0.3	50.00	-16.34	301.92																																																																																																																																																																																																																																																																																																																																																
98.15	0.6	50.00	-27.83	322.55																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage H2 Schnitt 8R		Seite Anlage H2/34																																																																																																																																																																																																																																																																																																																																																
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>98.10 0.6 50.00 -29.74 325.99</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04406190 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.40 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 196.80 kN/m G',k = 0.00 kN/m Pv,k = 43.50 kN/m Eav,k = 56.86 kN/m (Eah,k = 323.51 kN/m) Bv,k = 79.04 Summe V,k = 218.11 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.48</td><td>98.10</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 240.90 / 1.40 = 172.07 kN/m R,d = Rb,d + R,s1,d = 1037.12 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 265.68 - 0.00 + 72.49 + 58.73 = 396.89 kN/m ==> µ = V,d / R,d = 396.89 / 1037.12 = 0.38</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.48	0.00	S2: Auelehm	102.48	98.10	55.00	s3: Flusskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.48	0.00	S2: Auelehm											
102.48	98.10	55.00	s3: Flusskies, -sand											
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/35												
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: <div>Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner</div>												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 16_BS 8_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.50 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.50 108.50 108.49 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -27.80 0.00 0.00 0.00 43.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.40 m</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/36
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.48 5.000 5.000</div> <div>102.48 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 228.252 / 341.489 = 0.668$</div> <div>Bettungslager $B_{h,d} = 228.252 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 341.489 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge N,d N(g+q+w),k N(g+w),k Nw,k EA EI N,d'</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -231.97 -199.92 -199.92 -49.27 3.900E+7 2.100E+7 -254.90 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y wx,d wy,d N,d Q,d M,d</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-7.47 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-7.47 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-6.64 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-5.81 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-4.98 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-4.15 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-3.32 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-2.49 103.72 -6.8 0.0 -232.38 0.00 0.00</div> <div>-1.66 103.72 -6.8 0.1 -232.38 0.00 0.00</div> <div>-0.83 103.72 -6.8 0.1 -232.38 0.00 0.00</div> <div>0.00 103.72 -6.8 0.1 -232.38 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0059</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.35 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.48 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.500 108.494 0.000 3.941 0.00 0.00</div> <div>108.494 107.500 3.941 11.301 0.00 0.00</div> <div>107.500 107.450 11.301 11.671 0.00 0.00</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/37
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																								
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																												
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																								
<table><tr><td>107.450</td><td>106.500</td><td>11.671</td><td>18.705</td><td>0.00</td><td>0.00</td></tr><tr><td>106.500</td><td>105.500</td><td>18.705</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>26.109</td><td>26.303</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.350</td><td>26.303</td><td>26.693</td><td>0.50</td><td>1.50</td></tr><tr><td>105.350</td><td>104.450</td><td>32.627</td><td>36.456</td><td>1.50</td><td>10.50</td></tr><tr><td>104.450</td><td>103.720</td><td>36.456</td><td>39.562</td><td>10.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.450</td><td>39.562</td><td>40.711</td><td>17.80</td><td>20.50</td></tr><tr><td>103.450</td><td>102.550</td><td>40.711</td><td>44.541</td><td>20.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.480</td><td>44.541</td><td>44.839</td><td>0.00</td><td>0.00</td></tr><tr><td>102.480</td><td>102.082</td><td>33.132</td><td>34.765</td><td>0.00</td><td>0.00</td></tr><tr><td>102.082</td><td>101.484</td><td>34.765</td><td>37.216</td><td>0.00</td><td>0.00</td></tr><tr><td>101.484</td><td>100.489</td><td>37.216</td><td>41.300</td><td>0.00</td><td>0.00</td></tr><tr><td>100.489</td><td>99.493</td><td>41.300</td><td>45.384</td><td>0.00</td><td>0.00</td></tr><tr><td>99.493</td><td>98.497</td><td>45.384</td><td>49.468</td><td>0.00</td><td>0.00</td></tr><tr><td>98.497</td><td>98.099</td><td>49.468</td><td>51.102</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>51.102</td><td>125.335</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.50</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.45</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-13.38</td><td>-14.49</td></tr><tr><td>102.48</td><td>102.08</td><td>-14.40</td><td>-31.32</td></tr><tr><td>102.08</td><td>101.48</td><td>-31.32</td><td>-56.72</td></tr><tr><td>101.48</td><td>100.49</td><td>-56.72</td><td>-99.04</td></tr><tr><td>100.49</td><td>99.49</td><td>-99.04</td><td>-141.36</td></tr><tr><td>99.49</td><td>98.50</td><td>-141.36</td><td>-183.68</td></tr><tr><td>98.50</td><td>98.10</td><td>-183.68</td><td>-200.61</td></tr><tr><td>98.10</td><td>80.00</td><td>-200.61</td><td>-969.85</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.49</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.50</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-26.3</td><td>-9.4</td><td>-4.1</td><td></td></tr><tr><td>107.45</td><td>-78.5</td><td>-9.4</td><td>-37.5</td><td></td></tr><tr><td>106.50</td><td>-105.2</td><td>-26.0</td><td>-53.6</td><td></td></tr><tr><td>105.50</td><td>-136.3</td><td>-51.7</td><td>-91.8</td><td></td></tr><tr><td>105.45</td><td>-138.0</td><td>-53.3</td><td>-94.4</td><td></td></tr><tr><td>105.35</td><td>-141.2</td><td>-56.4</td><td>-99.9</td><td></td></tr><tr><td>104.45</td><td>-170.4</td><td>-98.7</td><td>-168.7</td><td></td></tr><tr><td>103.72</td><td>-194.9</td><td>-143.0</td><td>-256.3</td><td>-232.4</td></tr><tr><td>103.72</td><td>-194.9</td><td>89.4</td><td>-256.3</td><td></td></tr><tr><td>103.45</td><td>-204.1</td><td>70.7</td><td>-234.7</td><td></td></tr><tr><td>102.55</td><td>-235.5</td><td>-0.4</td><td>-202.0</td><td></td></tr><tr><td>102.48</td><td>-237.3</td><td>-4.0</td><td>-202.1</td><td></td></tr><tr><td>102.08</td><td>-239.7</td><td>-3.7</td><td>-204.1</td><td></td></tr><tr><td>101.48</td><td>-233.8</td><td>18.9</td><td>-200.8</td><td></td></tr><tr><td>100.49</td><td>-214.5</td><td>77.0</td><td>-149.5</td><td></td></tr><tr><td>99.49</td><td>-215.1</td><td>80.1</td><td>-66.8</td><td></td></tr><tr><td>98.50</td><td>-232.0</td><td>32.5</td><td>-6.7</td><td></td></tr><tr><td>98.10</td><td>-236.9</td><td>0.0</td><td>0.0</td><td></td></tr></table> <p>Schnittgrößen ([g+q+w],k)</p>								107.450	106.500	11.671	18.705	0.00	0.00	106.500	105.500	18.705	26.109	0.00	0.00	105.500	105.450	26.109	26.303	0.00	0.50	105.450	105.350	26.303	26.693	0.50	1.50	105.350	104.450	32.627	36.456	1.50	10.50	104.450	103.720	36.456	39.562	10.50	17.80	103.720	103.450	39.562	40.711	17.80	20.50	103.450	102.550	40.711	44.541	20.50	29.50	102.550	102.480	44.541	44.839	0.00	0.00	102.480	102.082	33.132	34.765	0.00	0.00	102.082	101.484	34.765	37.216	0.00	0.00	101.484	100.489	37.216	41.300	0.00	0.00	100.489	99.493	41.300	45.384	0.00	0.00	99.493	98.497	45.384	49.468	0.00	0.00	98.497	98.099	49.468	51.102	0.00	0.00	98.099	80.000	51.102	125.335	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.50	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.45	102.55	0.00	0.00	102.55	102.48	-13.38	-14.49	102.48	102.08	-14.40	-31.32	102.08	101.48	-31.32	-56.72	101.48	100.49	-56.72	-99.04	100.49	99.49	-99.04	-141.36	99.49	98.50	-141.36	-183.68	98.50	98.10	-183.68	-200.61	98.10	80.00	-200.61	-969.85	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.50	0.0	0.0	0.0		108.49	-0.1	0.0	0.0		107.50	-24.9	-8.7	-3.6		107.45	-26.3	-9.4	-4.1		107.45	-78.5	-9.4	-37.5		106.50	-105.2	-26.0	-53.6		105.50	-136.3	-51.7	-91.8		105.45	-138.0	-53.3	-94.4		105.35	-141.2	-56.4	-99.9		104.45	-170.4	-98.7	-168.7		103.72	-194.9	-143.0	-256.3	-232.4	103.72	-194.9	89.4	-256.3		103.45	-204.1	70.7	-234.7		102.55	-235.5	-0.4	-202.0		102.48	-237.3	-4.0	-202.1		102.08	-239.7	-3.7	-204.1		101.48	-233.8	18.9	-200.8		100.49	-214.5	77.0	-149.5		99.49	-215.1	80.1	-66.8		98.50	-232.0	32.5	-6.7		98.10	-236.9	0.0	0.0	
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>108.49</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.50</div><div>-21.7</div><div>-7.6</div><div>-3.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.45</div><div>-22.8</div><div>-8.2</div><div>-3.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.45</div><div>-66.3</div><div>-8.2</div><div>-31.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>106.50</div><div>-89.6</div><div>-22.6</div><div>-45.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.50</div><div>-116.7</div><div>-45.0</div><div>-78.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.45</div><div>-118.1</div><div>-46.3</div><div>-80.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.35</div><div>-120.9</div><div>-49.1</div><div>-85.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.45</div><div>-146.3</div><div>-85.6</div><div>-145.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-167.6</div><div>-123.6</div><div>-221.3</div><div>-199.9</div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-167.6</div><div>76.3</div><div>-221.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.45</div><div>-175.6</div><div>60.3</div><div>-202.8</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.55</div><div>-202.9</div><div>-0.6</div><div>-175.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.48</div><div>-204.8</div><div>-3.7</div><div>-175.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.08</div><div>-206.9</div><div>-3.5</div><div>-177.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.48</div><div>-201.8</div><div>16.3</div><div>-174.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.49</div><div>-185.0</div><div>66.8</div><div>-129.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>99.49</div><div>-185.5</div><div>69.6</div><div>-58.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.50</div><div>-200.3</div><div>28.2</div><div>-5.8</div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.10</div><div>-204.5</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>108.49</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.50</div><div>-21.7</div><div>-7.6</div><div>-3.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.45</div><div>-22.8</div><div>-8.2</div><div>-3.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>107.45</div><div>-66.3</div><div>-8.2</div><div>-31.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>106.50</div><div>-89.6</div><div>-22.6</div><div>-45.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.50</div><div>-116.7</div><div>-45.0</div><div>-78.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.45</div><div>-118.1</div><div>-46.3</div><div>-80.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.35</div><div>-120.9</div><div>-49.1</div><div>-85.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.45</div><div>-146.3</div><div>-85.6</div><div>-145.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-167.6</div><div>-123.6</div><div>-221.3</div><div>-199.9</div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-167.6</div><div>76.3</div><div>-221.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.45</div><div>-175.6</div><div>60.3</div><div>-202.8</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.55</div><div>-202.9</div><div>-0.6</div><div>-175.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.48</div><div>-204.8</div><div>-3.7</div><div>-175.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.08</div><div>-206.9</div><div>-3.5</div><div>-177.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.48</div><div>-201.8</div><div>16.3</div><div>-174.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.49</div><div>-185.0</div><div>66.8</div><div>-129.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>99.49</div><div>-185.5</div><div>69.6</div><div>-58.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.50</div><div>-200.3</div><div>28.2</div><div>-5.8</div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.10</div><div>-204.5</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div></div><div><div>Schnittgrößen 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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																				
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.50</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.55</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.55</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.9</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.48</td><td>-3.8</td><td>0.00</td><td>0.00</td><td>23.55</td></tr><tr><td>102.48</td><td>-3.8</td><td>5.00</td><td>19.09</td><td>23.39</td></tr><tr><td>102.43</td><td>-3.7</td><td>5.00</td><td>18.71</td><td>26.83</td></tr><tr><td>102.13</td><td>-3.3</td><td>14.36</td><td>47.46</td><td>47.46</td></tr><tr><td>102.08</td><td>-3.2</td><td>14.36</td><td>46.46</td><td>50.90</td></tr><tr><td>102.08</td><td>-3.2</td><td>15.74</td><td>50.90</td><td>50.90</td></tr><tr><td>102.03</td><td>-3.2</td><td>15.74</td><td>49.81</td><td>54.34</td></tr><tr><td>101.53</td><td>-2.5</td><td>35.34</td><td>88.73</td><td>88.73</td></tr><tr><td>101.48</td><td>-2.4</td><td>35.34</td><td>86.56</td><td>92.16</td></tr><tr><td>101.48</td><td>-2.4</td><td>37.62</td><td>92.17</td><td>92.16</td></tr><tr><td>101.43</td><td>-2.4</td><td>37.62</td><td>89.89</td><td>95.60</td></tr><tr><td>100.54</td><td>-1.4</td><td>50.00</td><td>70.85</td><td>157.50</td></tr><tr><td>100.49</td><td>-1.4</td><td>50.00</td><td>68.45</td><td>160.94</td></tr><tr><td>100.49</td><td>-1.4</td><td>50.00</td><td>68.45</td><td>160.94</td></tr><tr><td>100.44</td><td>-1.3</td><td>50.00</td><td>66.08</td><td>164.37</td></tr><tr><td>99.54</td><td>-0.5</td><td>50.00</td><td>27.16</td><td>226.27</td></tr><tr><td>99.49</td><td>-0.5</td><td>50.00</td><td>25.16</td><td>229.71</td></tr><tr><td>99.49</td><td>-0.5</td><td>50.00</td><td>25.16</td><td>229.71</td></tr><tr><td>99.44</td><td>-0.5</td><td>50.00</td><td>23.18</td><td>233.15</td></tr><tr><td>98.55</td><td>0.2</td><td>50.00</td><td>-11.22</td><td>295.04</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-13.09</td><td>298.48</td></tr><tr><td>98.50</td><td>0.3</td><td>50.00</td><td>-13.09</td><td>298.48</td></tr><tr><td>98.45</td><td>0.3</td><td>50.00</td><td>-14.97</td><td>301.92</td></tr><tr><td>98.15</td><td>0.5</td><td>50.00</td><td>-26.18</td><td>322.55</td></tr><tr><td>98.10</td><td>0.6</td><td>50.00</td><td>-28.05</td><td>325.99</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.50	-17.2	-	-	-	108.50	-17.2	-	-	-	108.50	-17.2	-	-	-	108.49	-17.2	-	-	-	108.49	-17.2	-	-	-	108.44	-17.0	-	-	-	107.55	-14.8	-	-	-	107.50	-14.7	-	-	-	107.50	-14.7	-	-	-	107.45	-14.5	-	-	-	107.45	-14.5	-	-	-	107.40	-14.4	-	-	-	106.55	-12.3	-	-	-	106.50	-12.2	-	-	-	106.50	-12.2	-	-	-	106.45	-12.1	-	-	-	105.55	-9.9	-	-	-	105.50	-9.8	-	-	-	105.50	-9.8	-	-	-	105.45	-9.7	-	-	-	105.45	-9.7	-	-	-	105.40	-9.6	-	-	-	105.40	-9.6	-	-	-	105.35	-9.4	-	-	-	105.35	-9.4	-	-	-	105.30	-9.3	-	-	-	104.50	-7.5	-	-	-	104.45	-7.4	-	-	-	104.45	-7.4	-	-	-	104.40	-7.3	-	-	-	103.77	-6.0	-	-	-	103.72	-5.9	-	-	-	103.72	-5.9	-	-	-	103.67	-5.8	-	-	-	103.50	-5.5	-	-	-	103.45	-5.4	-	-	-	103.45	-5.4	-	-	-	103.40	-5.3	-	-	-	102.60	-4.0	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	21.74	102.48	-3.8	0.00	0.00	23.55	102.48	-3.8	5.00	19.09	23.39	102.43	-3.7	5.00	18.71	26.83	102.13	-3.3	14.36	47.46	47.46	102.08	-3.2	14.36	46.46	50.90	102.08	-3.2	15.74	50.90	50.90	102.03	-3.2	15.74	49.81	54.34	101.53	-2.5	35.34	88.73	88.73	101.48	-2.4	35.34	86.56	92.16	101.48	-2.4	37.62	92.17	92.16	101.43	-2.4	37.62	89.89	95.60	100.54	-1.4	50.00	70.85	157.50	100.49	-1.4	50.00	68.45	160.94	100.49	-1.4	50.00	68.45	160.94	100.44	-1.3	50.00	66.08	164.37	99.54	-0.5	50.00	27.16	226.27	99.49	-0.5	50.00	25.16	229.71	99.49	-0.5	50.00	25.16	229.71	99.44	-0.5	50.00	23.18	233.15	98.55	0.2	50.00	-11.22	295.04	98.50	0.3	50.00	-13.09	298.48	98.50	0.3	50.00	-13.09	298.48	98.45	0.3	50.00	-14.97	301.92	98.15	0.5	50.00	-26.18	322.55	98.10	0.6	50.00	-28.05	325.99
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105.55	-9.9	-	-	-																																																																																																																																																																																																																																																																																																																																																		
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102.55	-3.9	0.00	0.00	21.74																																																																																																																																																																																																																																																																																																																																																		
102.48	-3.8	0.00	0.00	23.55																																																																																																																																																																																																																																																																																																																																																		
102.48	-3.8	5.00	19.09	23.39																																																																																																																																																																																																																																																																																																																																																		
102.43	-3.7	5.00	18.71	26.83																																																																																																																																																																																																																																																																																																																																																		
102.13	-3.3	14.36	47.46	47.46																																																																																																																																																																																																																																																																																																																																																		
102.08	-3.2	14.36	46.46	50.90																																																																																																																																																																																																																																																																																																																																																		
102.08	-3.2	15.74	50.90	50.90																																																																																																																																																																																																																																																																																																																																																		
102.03	-3.2	15.74	49.81	54.34																																																																																																																																																																																																																																																																																																																																																		
101.53	-2.5	35.34	88.73	88.73																																																																																																																																																																																																																																																																																																																																																		
101.48	-2.4	35.34	86.56	92.16																																																																																																																																																																																																																																																																																																																																																		
101.48	-2.4	37.62	92.17	92.16																																																																																																																																																																																																																																																																																																																																																		
101.43	-2.4	37.62	89.89	95.60																																																																																																																																																																																																																																																																																																																																																		
100.54	-1.4	50.00	70.85	157.50																																																																																																																																																																																																																																																																																																																																																		
100.49	-1.4	50.00	68.45	160.94																																																																																																																																																																																																																																																																																																																																																		
100.49	-1.4	50.00	68.45	160.94																																																																																																																																																																																																																																																																																																																																																		
100.44	-1.3	50.00	66.08	164.37																																																																																																																																																																																																																																																																																																																																																		
99.54	-0.5	50.00	27.16	226.27																																																																																																																																																																																																																																																																																																																																																		
99.49	-0.5	50.00	25.16	229.71																																																																																																																																																																																																																																																																																																																																																		
99.49	-0.5	50.00	25.16	229.71																																																																																																																																																																																																																																																																																																																																																		
99.44	-0.5	50.00	23.18	233.15																																																																																																																																																																																																																																																																																																																																																		
98.55	0.2	50.00	-11.22	295.04																																																																																																																																																																																																																																																																																																																																																		
98.50	0.3	50.00	-13.09	298.48																																																																																																																																																																																																																																																																																																																																																		
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98.45	0.3	50.00	-14.97	301.92																																																																																																																																																																																																																																																																																																																																																		
98.15	0.5	50.00	-26.18	322.55																																																																																																																																																																																																																																																																																																																																																		
98.10	0.6	50.00	-28.05	325.99																																																																																																																																																																																																																																																																																																																																																		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/40																																																																																																																																																																																																																																																																																																																																																				
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																				
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																				

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04299928 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.40 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 196.80 kN/m G',k = 0.00 kN/m Pv,k = 43.50 kN/m Eav,k = 60.49 kN/m (Eah,k = 344.64 kN/m) Bv,k = 78.98 Summe V,k = 221.80 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 102.48 0.00 S2: Auelehm 102.48 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 240.90 / 1.40 = 172.07 kN/m Rd = Rb,d + Rs1,d = 1037.12 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 236.16 - 0.00 + 69.56 + 52.20 = 357.92 kN/m ==> µ = V,d / Rd = 357.92 / 1037.12 = 0.35</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage H2 Schnitt 8R		Seite Anlage H2/41
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage I2 Schnitt 9R</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 10_BS 9_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.50</td><td>1.75</td><td>1.25</td><td>0.29</td><td>0.28</td><td>0.69</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>106.00</td><td>105.25</td><td>10.000</td><td>10.000</td></tr><tr><td>105.25</td><td>102.45</td><td>5.000</td><td>5.000</td></tr><tr><td>102.45</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 393.101 / 1232.335 = 0.319 Bettungslager Bh,d = 393.101 kN/m Erdwiderstand Eph,d = 1232.335 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.25	10.000	10.000	105.25	102.45	5.000	5.000	102.45	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.50	1.75	1.25	0.29	0.28	0.69	0.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.25	10.000	10.000																																														
105.25	102.45	5.000	5.000																																														
102.45	80.00	50.000	50.000																																														
Schnitt:	Anlage I2 Schnitt 9R	Seite Anlage I2/1																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 211																																															
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																															

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																				
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																		
<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.25</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.45</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.886</td><td>0.000</td><td>4.176</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>4.176</td><td>13.267</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>13.268</td><td>18.526</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>18.526</td><td>19.991</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>19.991</td><td>23.693</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>23.693</td><td>23.887</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.250</td><td>23.887</td><td>24.667</td><td>0.50</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>30.024</td><td>31.087</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>31.087</td><td>33.640</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>33.640</td><td>37.896</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.450</td><td>37.896</td><td>41.938</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.400</td><td>31.065</td><td>31.270</td><td>5.00</td><td>5.00</td></tr><tr><td>102.400</td><td>101.650</td><td>31.270</td><td>34.347</td><td>5.00</td><td>5.00</td></tr><tr><td>101.650</td><td>101.450</td><td>34.347</td><td>35.168</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>35.168</td><td>39.271</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.271</td><td>43.373</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>43.373</td><td>47.476</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>47.476</td><td>48.912</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>48.912</td><td>123.146</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.25</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.20</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.25</td><td>-32.19</td><td>-43.89</td></tr><tr><td>105.25</td><td>105.00</td><td>-33.82</td><td>-41.76</td></tr><tr><td>105.00</td><td>104.40</td><td>-41.76</td><td>-51.28</td></tr><tr><td>104.40</td><td>103.40</td><td>-51.28</td><td>-67.14</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.886	0.000	4.176	0.00	0.00	106.886	106.450	4.176	13.267	0.00	0.00	106.450	106.198	13.268	18.526	0.00	0.00	106.198	106.000	18.526	19.991	0.00	0.00	106.000	105.500	19.991	23.693	0.00	0.00	105.500	105.450	23.693	23.887	0.00	0.50	105.450	105.250	23.887	24.667	0.50	2.50	105.250	105.000	30.024	31.087	2.50	5.00	105.000	104.400	31.087	33.640	5.00	5.00	104.400	103.400	33.640	37.896	5.00	5.00	103.400	102.450	37.896	41.938	5.00	5.00	102.450	102.400	31.065	31.270	5.00	5.00	102.400	101.650	31.270	34.347	5.00	5.00	101.650	101.450	34.347	35.168	5.00	5.00	101.450	100.449	35.168	39.271	5.00	5.00	100.449	99.449	39.271	43.373	5.00	5.00	99.449	98.449	43.373	47.476	5.00	5.00	98.449	98.099	47.476	48.912	5.00	5.00	98.099	80.000	48.912	123.146	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.25	5.005	5.388	30.000	-20.01	18.10	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.20	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.25	-32.19	-43.89	105.25	105.00	-33.82	-41.76	105.00	104.40	-41.76	-51.28	104.40	103.40	-51.28	-67.14	<div>Statisch geprüft</div> <div>Dipl.-Ing. A. Forner</div> <div>Seite Anlage I2/I2</div> <div>Archiv Nr. 1</div> <div>Standssicherheit</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>103.40102.45-67.14-82.22</div><div>102.45102.40-148.48-150.61</div><div>102.40101.65-150.61-182.49</div><div>101.65101.45-182.49-191.00</div><div>101.45100.45-191.00-233.51</div><div>100.4599.45-233.51-276.02</div><div>99.4598.45-276.02-318.54</div><div>98.4598.10-318.54-333.42</div><div>98.1080.00-333.42-1102.66</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-12.8-1.4-0.3</div><div>106.45-23.8-5.7-1.6</div><div>106.20-31.0-10.3-3.6</div><div>106.00-36.9-14.7-6.1</div><div>105.50-43.7-15.0-14.6</div><div>105.45-43.8-13.6-15.3</div><div>105.25-43.4-6.6-17.3</div><div>105.00-46.7-8.3-19.1</div><div>104.40-55.0-16.4-26.4</div><div>103.40-70.2-38.9-53.1</div><div>102.45-86.1-70.5-104.3</div><div>102.40-86.9-71.8-107.8</div><div>101.65-62.5-1.8-133.5</div><div>101.45-57.911.8-132.4</div><div>100.45-44.551.8-97.0</div><div>99.45-44.952.3-41.9</div><div>98.45-56.719.1-3.5</div><div>98.10-63.40.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.20-27.0-9.0-3.2</div><div>106.00-32.1-12.8-5.3</div><div>105.50-38.0-13.1-12.7</div><div>105.45-38.1-11.9-13.3</div><div>105.25-37.8-5.8-15.1</div><div>105.00-40.6-7.3-16.7</div><div>104.40-47.8-14.3-23.0</div><div>103.40-61.0-33.7-46.1</div><div>102.45-74.9-61.0-90.5</div><div>102.40-75.6-62.1-93.5</div><div>101.65-54.4-1.5-115.7</div><div>101.45-50.310.3-114.8</div><div>100.45-38.744.9-84.0</div><div>99.45-39.045.3-36.3</div><div>98.45-49.416.6-3.0</div><div>98.10-55.20.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.89-11.1-1.2-0.2</div><div>106.45-20.7-5.0-1.4</div><div>106.20-27.0-9.0-3.2</div><div>106.00-32.1-12.8-5.3</div><div>105.50-38.0-13.1-12.7</div><div>105.45-38.1-11.9-13.3</div><div>105.25-37.8-5.8-15.1</div><div>105.00-40.6-7.3-16.7</div><div>104.40-47.8-14.3-23.0</div><div>103.40-61.0-33.7-46.1</div><div>102.45-74.9-61.0-90.5</div></div></div></div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 1213
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>102.40-75.6-62.1-93.5</div><div>101.65-54.4-1.5-115.7</div><div>101.45-50.310.3-114.8</div><div>100.45-38.744.9-84.0</div><div>99.45-39.045.3-36.3</div><div>98.45-49.416.6-3.0</div><div>98.10-55.20.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.890.00.00.0</div><div>106.450.00.00.0</div><div>106.200.00.00.0</div><div>106.000.00.00.0</div><div>105.500.00.00.0</div><div>105.450.00.00.0</div><div>105.250.00.00.0</div><div>105.000.00.00.0</div><div>104.400.00.00.0</div><div>103.400.00.00.0</div><div>102.450.00.00.0</div><div>102.400.00.00.0</div><div>101.450.00.00.0</div><div>100.450.00.00.0</div><div>99.450.00.00.0</div><div>98.450.00.00.0</div><div>98.100.00.00.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewksig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>107.45-8.3--</div><div>107.40-8.3--</div><div>106.95-7.7--</div><div>106.89-7.7--</div><div>106.84-7.6--</div><div>106.50-7.2--</div><div>106.45-7.2--</div><div>106.45-7.2--</div><div>106.40-7.1--</div><div>106.25-6.9--</div><div>106.20-6.9--</div><div>106.20-6.9--</div><div>106.15-6.8--</div><div>106.05-6.7--</div><div>106.00-6.60.000.000.00</div><div>106.00-6.60.000.000.00</div><div>105.95-6.60.000.004.75</div><div>105.55-6.16.9942.8042.79</div><div>105.50-6.16.9942.3947.55</div><div>105.50-6.17.8447.5547.55</div><div>105.45-6.07.8447.1052.30</div><div>105.45-6.08.7052.3152.30</div><div>105.40-6.08.7051.8157.06</div><div>105.30-5.810.0058.3866.57</div><div>105.25-5.810.0057.8171.32</div><div>105.25-5.85.0028.9154.96</div><div>105.20-5.75.0028.6257.54</div><div>105.05-5.65.0027.7665.28</div><div>105.00-5.55.0027.4867.85</div><div>105.00-5.55.0027.4867.85</div><div>104.95-5.45.0027.1969.14</div><div>104.45-4.95.0024.3782.04</div><div>104.40-4.85.0024.0983.33</div><div>104.40-4.85.0024.0983.33</div><div>104.35-4.85.0023.8184.61</div><div>103.45-3.85.0018.89107.82</div><div>103.40-3.75.0018.62109.11</div></div></div></div>					
Schnitt:		Anlage I2		Schnitt 9R	
Kapitel:		1		LF 1.1 (BS-T, ohne Lasten)	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
				Seite Anlage I2/4	
				Archiv Nr.:	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																						
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																						
<table><tr><td>103.40</td><td>-3.7</td><td>5.00</td><td>18.62</td><td>109.11</td></tr><tr><td>103.35</td><td>-3.7</td><td>5.00</td><td>18.35</td><td>110.40</td></tr><tr><td>102.50</td><td>-2.8</td><td>5.00</td><td>14.04</td><td>132.32</td></tr><tr><td>102.45</td><td>-2.8</td><td>5.00</td><td>13.80</td><td>133.61</td></tr><tr><td>102.45</td><td>-2.8</td><td>5.00</td><td>13.80</td><td>241.28</td></tr><tr><td>102.40</td><td>-2.7</td><td>5.00</td><td>13.56</td><td>244.74</td></tr><tr><td>102.40</td><td>-2.7</td><td>50.00</td><td>135.59</td><td>244.74</td></tr><tr><td>102.35</td><td>-2.7</td><td>50.00</td><td>133.23</td><td>248.19</td></tr><tr><td>101.70</td><td>-2.1</td><td>50.00</td><td>104.56</td><td>293.10</td></tr><tr><td>101.65</td><td>-2.1</td><td>50.00</td><td>102.53</td><td>296.55</td></tr><tr><td>101.65</td><td>-2.1</td><td>50.00</td><td>102.53</td><td>296.55</td></tr><tr><td>101.60</td><td>-2.0</td><td>50.00</td><td>100.51</td><td>300.00</td></tr><tr><td>101.50</td><td>-1.9</td><td>50.00</td><td>96.56</td><td>306.91</td></tr><tr><td>101.45</td><td>-1.9</td><td>50.00</td><td>94.62</td><td>310.37</td></tr><tr><td>101.45</td><td>-1.9</td><td>50.00</td><td>94.62</td><td>310.37</td></tr><tr><td>101.40</td><td>-1.9</td><td>50.00</td><td>92.70</td><td>313.82</td></tr><tr><td>100.50</td><td>-1.2</td><td>50.00</td><td>62.14</td><td>376.00</td></tr><tr><td>100.45</td><td>-1.2</td><td>50.00</td><td>60.63</td><td>379.45</td></tr><tr><td>100.45</td><td>-1.2</td><td>50.00</td><td>60.63</td><td>379.45</td></tr><tr><td>100.40</td><td>-1.2</td><td>50.00</td><td>59.15</td><td>382.91</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>34.91</td><td>445.08</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>33.67</td><td>448.54</td></tr><tr><td>99.45</td><td>-0.7</td><td>50.00</td><td>33.67</td><td>448.54</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>32.44</td><td>451.99</td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>11.06</td><td>514.17</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>9.90</td><td>517.63</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>9.90</td><td>517.63</td></tr><tr><td>98.40</td><td>-0.2</td><td>50.00</td><td>8.74</td><td>521.08</td></tr><tr><td>98.15</td><td>-0.1</td><td>50.00</td><td>2.92</td><td>538.35</td></tr><tr><td>98.10</td><td>0.0</td><td>50.00</td><td>1.76</td><td>541.81</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02663421 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 53.51 kN/m (Eah,k = 304.51 kN/m) Bv,k = 126.78 Summe V,k = 103.65 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 106.00 105.25 0.00 S1: Auffüllungen 105.25 102.45 0.00 S2: Auelehm 102.45 98.10 55.00 s3: Flusskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 239.25 / 1.40 = 170.89 kN/m R,d = Rb,d + R,s1,d = 1035.94 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 212.32 - 0.00 + 61.53 + 0.00 = 273.85 kN/m ==> µ = V,d / R,d = 273.85 / 1035.94 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.40	-3.7	5.00	18.62	109.11	103.35	-3.7	5.00	18.35	110.40	102.50	-2.8	5.00	14.04	132.32	102.45	-2.8	5.00	13.80	133.61	102.45	-2.8	5.00	13.80	241.28	102.40	-2.7	5.00	13.56	244.74	102.40	-2.7	50.00	135.59	244.74	102.35	-2.7	50.00	133.23	248.19	101.70	-2.1	50.00	104.56	293.10	101.65	-2.1	50.00	102.53	296.55	101.65	-2.1	50.00	102.53	296.55	101.60	-2.0	50.00	100.51	300.00	101.50	-1.9	50.00	96.56	306.91	101.45	-1.9	50.00	94.62	310.37	101.45	-1.9	50.00	94.62	310.37	101.40	-1.9	50.00	92.70	313.82	100.50	-1.2	50.00	62.14	376.00	100.45	-1.2	50.00	60.63	379.45	100.45	-1.2	50.00	60.63	379.45	100.40	-1.2	50.00	59.15	382.91	99.50	-0.7	50.00	34.91	445.08	99.45	-0.7	50.00	33.67	448.54	99.45	-0.7	50.00	33.67	448.54	99.40	-0.6	50.00	32.44	451.99	98.50	-0.2	50.00	11.06	514.17	98.45	-0.2	50.00	9.90	517.63	98.45	-0.2	50.00	9.90	517.63	98.40	-0.2	50.00	8.74	521.08	98.15	-0.1	50.00	2.92	538.35	98.10	0.0	50.00	1.76	541.81
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Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr. 215																																																																																																																																																						
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																						



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 11_BS 9_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.68 104.92 nein Steuerparameter = 0.50</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m²] [MN/m²] 106.00 105.25 10.000 10.000 105.25 102.45 5.000 5.000 102.45 80.00 50.000 50.000</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 216
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																															
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																	
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																															
<div>Ausnutzungsgrad $\mu_e = 445.962 / 1118.200 = 0.399$ Bettungslager $B_{h,d} = 445.962 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 1118.200 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{a,k}$</td><td>$\phi_{i,k}$</td><td>$c(pas),k$</td><td>$c(akt),k$</td><td>$d(p)/\phi_i$</td><td>$d(a)/\phi_i$</td><td>q_c</td><td>$c_{u,k}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.25</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.45</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion $<> 0.0$. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td><td>$k_{agh}(40^\circ)$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td colspan="2">[kN/m²]</td></tr><tr><td>107.450</td><td>107.448</td><td>0.000</td><td>3.923</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.886</td><td>3.923</td><td>9.709</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>9.709</td><td>20.066</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>20.067</td><td>26.057</td><td>0.00</td><td>0.00</td></tr><tr><td>106.198</td><td>106.000</td><td>26.057</td><td>27.784</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.681</td><td>27.784</td><td>30.149</td><td>0.00</td><td>0.00</td></tr><tr><td>105.681</td><td>105.500</td><td>30.149</td><td>30.565</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.400</td><td>30.565</td><td>30.444</td><td>0.00</td><td>1.00</td></tr><tr><td>105.400</td><td>105.250</td><td>30.444</td><td>30.264</td><td>1.00</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>37.214</td><td>36.640</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.917</td><td>36.640</td><td>36.448</td><td>5.00</td><td>5.00</td></tr><tr><td>104.917</td><td>104.413</td><td>36.448</td><td>38.590</td><td>5.00</td><td>5.00</td></tr><tr><td>104.413</td><td>103.406</td><td>38.590</td><td>42.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.406</td><td>102.450</td><td>42.874</td><td>46.944</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.400</td><td>34.632</td><td>34.837</td><td>5.00</td><td>5.00</td></tr><tr><td>102.400</td><td>101.700</td><td>34.837</td><td>37.709</td><td>5.00</td><td>5.00</td></tr><tr><td>101.700</td><td>101.450</td><td>37.709</td><td>38.734</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.734</td><td>42.837</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>42.837</td><td>46.940</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>46.940</td><td>51.043</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>51.043</td><td>52.479</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.479</td><td>126.712</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>$w(\text{oben})$</td><td>$w(\text{unten})$</td><td>$z(\text{oben})$</td><td>$z(\text{unten})$</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{pgh}</td><td>k_{pch}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.25</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table>						Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		107.450	107.448	0.000	3.923	0.00	0.00	107.448	106.886	3.923	9.709	0.00	0.00	106.886	106.450	9.709	20.066	0.00	0.00	106.450	106.198	20.067	26.057	0.00	0.00	106.198	106.000	26.057	27.784	0.00	0.00	106.000	105.681	27.784	30.149	0.00	0.00	105.681	105.500	30.149	30.565	0.00	0.00	105.500	105.400	30.565	30.444	0.00	1.00	105.400	105.250	30.444	30.264	1.00	2.50	105.250	105.000	37.214	36.640	2.50	5.00	105.000	104.917	36.640	36.448	5.00	5.00	104.917	104.413	36.448	38.590	5.00	5.00	104.413	103.406	38.590	42.874	5.00	5.00	103.406	102.450	42.874	46.944	5.00	5.00	102.450	102.400	34.632	34.837	5.00	5.00	102.400	101.700	34.837	37.709	5.00	5.00	101.700	101.450	37.709	38.734	5.00	5.00	101.450	100.449	38.734	42.837	5.00	5.00	100.449	99.449	42.837	46.940	5.00	5.00	99.449	98.449	46.940	51.043	5.00	5.00	98.449	98.099	51.043	52.479	5.00	5.00	98.099	80.000	52.479	126.712	5.00	5.00	$w(\text{oben})$	$w(\text{unten})$	$z(\text{oben})$	$z(\text{unten})$	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.25	5.005	5.388	30.000	-20.01	18.10	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35
Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																									
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Statisch geprüft
für
Standssicherheit
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</table>				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	-12.1	-3.8	-0.9	106.45	-22.7	-10.3	-3.8	106.20	-29.6	-16.1	-7.2	106.00	-35.3	-21.5	-10.9	105.68	-40.4	-26.7	-18.8	105.50	-41.4	-25.6	-23.6	105.40	-41.4	-23.7	-26.0	105.25	-40.9	-19.3	-29.3	105.00	-42.9	-19.4	-34.0	104.92	-43.7	-19.9	-35.6	104.41	-48.8	-24.5	-46.7	103.41	-60.4	-43.0	-79.7	102.45	-73.3	-71.4	-133.6	102.40	-73.9	-72.5	-137.2	101.70	-46.6	0.6	-160.5	101.45	-39.6	19.5	-157.9	100.45	-23.3	62.2	-113.0	99.45	-23.0	60.7	-48.2	98.45	-35.9	21.9	-4.0	98.10	-41.7	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	-12.1	-3.8	-0.9	106.45	-22.7	-10.3	-3.8	106.20	-29.6	-16.1	-7.2	106.00	-35.3	-21.5	-10.9	105.68	-40.4	-26.7	-18.8	105.50	-41.4	-25.6	-23.6	105.40	-41.4	-23.7	-26.0	105.25	-40.9	-19.3	-29.3	105.00	-42.9	-19.4	-34.0	104.92	-43.7	-19.9	-35.6	104.41	-48.8	-24.5	-46.7	103.41	-60.4	-43.0	-79.7	102.45	-73.3	-71.4	-133.6	102.40	-73.9	-72.5	-137.2	101.70	-46.6	0.6	-160.5	101.45	-39.6	19.5	-157.9	100.45	-23.3	62.2	-113.0	99.45	-23.0	60.7	-48.2	98.45	-35.9	21.9	-4.0	98.10	-41.7	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	107.45	0.0	0.0	0.0	106.89	0.0	0.0	0.0	106.45	0.0	0.0	0.0	106.20	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.68	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.40	0.0	0.0	0.0	105.25	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.92	0.0	0.0	0.0	104.41	0.0	0.0	0.0	103.41	0.0	0.0	0.0	102.45	0.0	0.0	0.0	102.40	0.0	0.0	0.0
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>101.700.00.00.0.0</div><div>101.450.00.00.0.0</div><div>100.450.00.00.0.0</div><div>99.450.00.00.0.0</div><div>98.450.00.00.0.0</div><div>98.100.00.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>107.45-11.2--</div><div>107.45-11.2--</div><div>107.45-11.2--</div><div>107.40-11.1--</div><div>106.95-10.4--</div><div>106.89-10.3--</div><div>106.89-10.3--</div><div>106.84-10.2--</div><div>106.50-9.6--</div><div>106.45-9.6--</div><div>106.45-9.6--</div><div>106.40-9.5--</div><div>106.25-9.2--</div><div>106.20-9.1--</div><div>106.20-9.1--</div><div>106.15-9.1--</div><div>106.05-8.9--</div><div>106.00-8.80.000.000.00</div><div>106.00-8.80.000.000.00</div><div>105.95-8.70.000.005.06</div><div>105.73-8.43.0225.3125.31</div><div>105.68-8.33.0225.0530.37</div><div>105.68-8.33.6630.3730.37</div><div>105.64-8.23.6630.1034.67</div><div>105.55-8.15.3643.2643.25</div><div>105.50-8.05.3642.8647.55</div><div>105.50-8.05.9547.5547.55</div><div>105.45-7.95.9547.0752.30</div><div>105.45-7.96.6152.3152.30</div><div>105.40-7.86.6151.7757.06</div><div>105.40-7.87.2957.0657.06</div><div>105.35-7.77.2956.4761.81</div><div>105.30-7.78.6866.5766.57</div><div>105.25-7.68.6865.8771.32</div><div>105.25-7.67.2454.9754.96</div><div>105.20-7.57.2454.3857.54</div><div>105.05-7.35.0036.3265.28</div><div>105.00-7.25.0035.9267.85</div><div>105.00-7.25.0035.9267.85</div><div>104.96-7.15.0035.5968.93</div><div>104.96-7.15.0035.5968.93</div><div>104.92-7.15.0035.2570.00</div><div>104.92-7.15.0035.2570.00</div><div>104.87-7.05.0034.8571.30</div><div>104.46-6.35.0031.6681.69</div><div>104.41-6.35.0031.2782.98</div><div>104.41-6.35.0031.2782.98</div><div>104.36-6.25.0030.8784.28</div><div>103.46-4.85.0024.00107.65</div><div>103.41-4.75.0023.63108.94</div><div>103.41-4.75.0023.63108.94</div><div>103.36-4.75.0023.27110.24</div><div>102.50-3.55.0017.35132.31</div><div>102.45-3.45.0017.02133.61</div><div>102.45-3.45.0017.02241.28</div><div>102.40-3.35.0016.70244.74</div><div>102.40-3.350.00167.02244.74</div><div>102.35-3.350.00163.84248.19</div><div>101.75-2.650.00128.12289.64</div><div>101.70-2.550.00125.37293.10</div></div></div></div>					
Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/10	
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Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



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<table><tr><td>101.70</td><td>-2.5</td><td>50.00</td><td>125.37</td><td>293.10</td></tr><tr><td>101.65</td><td>-2.5</td><td>50.00</td><td>122.64</td><td>296.55</td></tr><tr><td>101.50</td><td>-2.3</td><td>50.00</td><td>114.67</td><td>306.91</td></tr><tr><td>101.45</td><td>-2.2</td><td>50.00</td><td>112.08</td><td>310.37</td></tr><tr><td>101.45</td><td>-2.2</td><td>50.00</td><td>112.08</td><td>310.37</td></tr><tr><td>101.40</td><td>-2.2</td><td>50.00</td><td>109.53</td><td>313.82</td></tr><tr><td>100.50</td><td>-1.4</td><td>50.00</td><td>68.86</td><td>376.00</td></tr><tr><td>100.45</td><td>-1.3</td><td>50.00</td><td>66.87</td><td>379.45</td></tr><tr><td>100.45</td><td>-1.3</td><td>50.00</td><td>66.87</td><td>379.45</td></tr><tr><td>100.40</td><td>-1.3</td><td>50.00</td><td>64.90</td><td>382.91</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>32.76</td><td>445.08</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>31.11</td><td>448.54</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>31.11</td><td>448.54</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>29.48</td><td>451.99</td></tr><tr><td>98.50</td><td>0.0</td><td>50.00</td><td>1.15</td><td>514.17</td></tr><tr><td>98.45</td><td>0.0</td><td>50.00</td><td>-0.39</td><td>517.63</td></tr><tr><td>98.45</td><td>0.0</td><td>50.00</td><td>-0.39</td><td>517.63</td></tr><tr><td>98.40</td><td>0.0</td><td>50.00</td><td>-1.93</td><td>521.08</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-9.64</td><td>538.35</td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-11.18</td><td>541.81</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03529918 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 7.90 m Profillänge = 9.35 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G''k + Eav,k >= Bv,k G,k = 176.93 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 61.08 kN/m (Eah,k = 348.46 kN/m) Bv,k = 142.77 Summe V,k = 95.23 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>105.25</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.25</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 239.25 / 1.40 = 170.89 kN/m Rd = Rb,d + Rs1,d = 1035.94 kN/m</p> <p>Einwirkungen Vd = Gd - G'k + Eav,d + Pv,d = 212.32 - 0.00 + 70.24 + 0.00 = 282.55 kN/m ==> µ = Vd / Rd = 282.55 / 1035.94 = 0.27</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			101.70	-2.5	50.00	125.37	293.10	101.65	-2.5	50.00	122.64	296.55	101.50	-2.3	50.00	114.67	306.91	101.45	-2.2	50.00	112.08	310.37	101.45	-2.2	50.00	112.08	310.37	101.40	-2.2	50.00	109.53	313.82	100.50	-1.4	50.00	68.86	376.00	100.45	-1.3	50.00	66.87	379.45	100.45	-1.3	50.00	66.87	379.45	100.40	-1.3	50.00	64.90	382.91	99.50	-0.7	50.00	32.76	445.08	99.45	-0.6	50.00	31.11	448.54	99.45	-0.6	50.00	31.11	448.54	99.40	-0.6	50.00	29.48	451.99	98.50	0.0	50.00	1.15	514.17	98.45	0.0	50.00	-0.39	517.63	98.45	0.0	50.00	-0.39	517.63	98.40	0.0	50.00	-1.93	521.08	98.15	0.2	50.00	-9.64	538.35	98.10	0.2	50.00	-11.18	541.81	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	98.10	55.00	s3: Flussskies, -sand
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Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2111																																																																																																																				
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																				

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 12_BS 9_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</p> <p>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 102.45 5.000 5.000 102.45 80.00 50.000 50.000</p> <p>Ausnutzungsgrad mue = 295.299 / 379.669 = 0.778 Bettungslager Bh,d = 295.299 kN/m Erdwiderstand Eph,d = 379.669 kN/m</p>		
Schnitt:	Anlage I2 Schnitt 9R	Seite Anlage I2/12
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr. 2112 für Standsicherheit Dipl.-Ing. A. Forner
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
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<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-99.49</td><td>-86.16</td><td>-86.16</td><td>-8.05</td><td>6.900E+4</td><td>2.100E+7</td><td>-109.86</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.9</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.1</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.4</td><td>0.1</td><td>-99.49</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Rechtes Ufer\10_BS 9_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0077</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.25</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.45</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>106.198</td><td>105.500</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>28.127</td><td>28.127</td><td>0.00</td></tr><tr><td>105.450</td><td>105.250</td><td>28.127</td><td>28.127</td><td>0.50</td></tr><tr><td>105.250</td><td>105.000</td><td>28.127</td><td>28.127</td><td>2.50</td></tr><tr><td>105.000</td><td>104.450</td><td>23.439</td><td>23.439</td><td>5.00</td></tr><tr><td>104.450</td><td>104.400</td><td>23.439</td><td>23.439</td><td>5.00</td></tr><tr><td>104.400</td><td>103.400</td><td>23.439</td><td>23.439</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-99.49	-86.16	-86.16	-8.05	6.900E+4	2.100E+7	-109.86	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.9	0.0	-99.49	0.00	0.00	-0.90	106.95	-9.1	0.0	-99.49	0.00	0.00	-0.90	106.95	-9.1	0.0	-99.49	0.00	0.00	-0.80	106.95	-9.2	0.0	-99.49	0.00	0.00	-0.70	106.95	-9.3	0.0	-99.49	0.00	0.00	-0.60	106.95	-9.5	0.0	-99.49	0.00	0.00	-0.50	106.95	-9.6	0.0	-99.49	0.00	0.00	-0.40	106.95	-9.8	0.0	-99.49	0.00	0.00	-0.30	106.95	-9.9	0.0	-99.49	0.00	0.00	-0.20	106.95	-10.1	0.0	-99.49	0.00	0.00	-0.10	106.95	-10.2	0.0	-99.49	0.00	0.00	0.00	106.95	-10.4	0.1	-99.49	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0077	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	28.127	28.127	0.00	106.950	106.886	28.127	28.127	0.00	106.886	106.450	28.127	28.127	0.00	106.450	106.198	28.127	28.127	0.00	106.198	105.500	28.127	28.127	0.00	105.500	105.450	28.127	28.127	0.00	105.450	105.250	28.127	28.127	0.50	105.250	105.000	28.127	28.127	2.50	105.000	104.450	23.439	23.439	5.00	104.450	104.400	23.439	23.439	5.00	104.400	103.400	23.439	23.439	5.00	<div>Schnitt: Anlage I2 Schnitt 9R</div> <div>Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>	<div>Seite Anlage I2/13</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																								
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Statisch geprüft

12/13

für

Standicherheit

Dipl.-Ing. A. Fortner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																													
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<table><tr><td>103.400</td><td>102.550</td><td>23.439</td><td>23.439</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>41.512</td><td>41.938</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.400</td><td>31.065</td><td>31.270</td><td>5.00</td><td>5.00</td></tr><tr><td>102.400</td><td>101.800</td><td>31.270</td><td>33.732</td><td>5.00</td><td>5.00</td></tr><tr><td>101.800</td><td>101.450</td><td>33.732</td><td>35.168</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>35.168</td><td>39.271</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.271</td><td>43.373</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>43.373</td><td>47.476</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>47.476</td><td>48.912</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>48.912</td><td>123.146</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>102.40</td><td>-3.14</td><td>-5.27</td></tr><tr><td>102.40</td><td>101.80</td><td>-5.27</td><td>-30.78</td></tr><tr><td>101.80</td><td>101.45</td><td>-30.78</td><td>-45.66</td></tr><tr><td>101.45</td><td>100.45</td><td>-45.66</td><td>-88.17</td></tr><tr><td>100.45</td><td>99.45</td><td>-88.17</td><td>-130.68</td></tr><tr><td>99.45</td><td>98.45</td><td>-130.68</td><td>-173.20</td></tr><tr><td>98.45</td><td>98.10</td><td>-173.20</td><td>-188.08</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.08</td><td>-957.32</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-16.8</td><td>-16.2</td><td>-4.0</td><td>-99.5</td></tr><tr><td>106.95</td><td>-16.8</td><td>83.3</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.9</td><td>81.2</td><td>1.2</td><td></td></tr><tr><td>106.45</td><td>-33.5</td><td>67.1</td><td>33.6</td><td></td></tr><tr><td>106.20</td><td>-42.0</td><td>59.0</td><td>49.5</td><td></td></tr><tr><td>105.50</td><td>-65.4</td><td>36.4</td><td>82.8</td><td></td></tr><tr><td>105.45</td><td>-67.1</td><td>34.8</td><td>84.5</td><td></td></tr><tr><td>105.25</td><td>-73.8</td><td>28.0</td><td>90.8</td><td></td></tr><tr><td>105.00</td><td>-81.4</td><td>18.7</td><td>96.7</td><td></td></tr><tr><td>104.45</td><td>-97.3</td><td>0.6</td><td>102.0</td><td></td></tr><tr><td>104.40</td><td>-98.8</td><td>-1.0</td><td>102.0</td><td></td></tr><tr><td>103.40</td><td>-127.8</td><td>-34.0</td><td>84.5</td><td></td></tr><tr><td>102.55</td><td>-152.4</td><td>-62.0</td><td>43.7</td><td></td></tr><tr><td>102.45</td><td>-154.8</td><td>-66.7</td><td>37.2</td><td></td></tr><tr><td>102.40</td><td>-155.8</td><td>-68.5</td><td>33.8</td><td></td></tr><tr><td>101.80</td><td>-161.3</td><td>-75.6</td><td>-10.7</td><td></td></tr><tr><td>101.45</td><td>-159.4</td><td>-67.3</td><td>-36.0</td><td></td></tr><tr><td>100.45</td><td>-134.2</td><td>2.3</td><td>-73.0</td><td></td></tr><tr><td>99.45</td><td>-117.8</td><td>45.3</td><td>-43.6</td><td></td></tr><tr><td>98.45</td><td>-125.4</td><td>22.8</td><td>-4.2</td><td></td></tr><tr><td>98.10</td><td>-132.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.400	102.550	23.439	23.439	5.00	5.00	102.550	102.450	41.512	41.938	5.00	5.00	102.450	102.400	31.065	31.270	5.00	5.00	102.400	101.800	31.270	33.732	5.00	5.00	101.800	101.450	33.732	35.168	5.00	5.00	101.450	100.449	35.168	39.271	5.00	5.00	100.449	99.449	39.271	43.373	5.00	5.00	99.449	98.449	43.373	47.476	5.00	5.00	98.449	98.099	47.476	48.912	5.00	5.00	98.099	80.000	48.912	123.146	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	102.40	-3.14	-5.27	102.40	101.80	-5.27	-30.78	101.80	101.45	-30.78	-45.66	101.45	100.45	-45.66	-88.17	100.45	99.45	-88.17	-130.68	99.45	98.45	-130.68	-173.20	98.45	98.10	-173.20	-188.08	98.10	80.00	-188.08	-957.32	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-16.8	-16.2	-4.0	-99.5	106.95	-16.8	83.3	-4.0		106.89	-18.9	81.2	1.2		106.45	-33.5	67.1	33.6		106.20	-42.0	59.0	49.5		105.50	-65.4	36.4	82.8		105.45	-67.1	34.8	84.5		105.25	-73.8	28.0	90.8		105.00	-81.4	18.7	96.7		104.45	-97.3	0.6	102.0		104.40	-98.8	-1.0	102.0		103.40	-127.8	-34.0	84.5		102.55	-152.4	-62.0	43.7		102.45	-154.8	-66.7	37.2		102.40	-155.8	-68.5	33.8		101.80	-161.3	-75.6	-10.7		101.45	-159.4	-67.3	-36.0		100.45	-134.2	2.3	-73.0		99.45	-117.8	45.3	-43.6		98.45	-125.4	22.8	-4.2		98.10	-132.2	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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<div><div><div>101.450.00.00.0.0</div><div>100.450.000.00.0.0</div><div>99.450.000.00.0.0</div><div>98.450.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div><div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-4.7</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-4.7</td><td>2.77</td><td>13.02</td><td>13.02</td></tr><tr><td>102.45</td><td>-4.6</td><td>2.77</td><td>12.85</td><td>14.31</td></tr><tr><td>102.45</td><td>-4.6</td><td>1.10</td><td>5.11</td><td>5.10</td></tr><tr><td>102.40</td><td>-4.6</td><td>1.10</td><td>5.04</td><td>8.56</td></tr><tr><td>102.40</td><td>-4.6</td><td>1.87</td><td>8.56</td><td>8.56</td></tr><tr><td>102.35</td><td>-4.5</td><td>1.87</td><td>8.44</td><td>12.01</td></tr><tr><td>101.85</td><td>-3.9</td><td>11.92</td><td>46.56</td><td>46.56</td></tr><tr><td>101.80</td><td>-3.8</td><td>11.92</td><td>45.82</td><td>50.01</td></tr><tr><td>101.80</td><td>-3.8</td><td>13.01</td><td>50.01</td><td>50.01</td></tr><tr><td>101.75</td><td>-3.8</td><td>13.01</td><td>49.21</td><td>53.47</td></tr><tr><td>101.50</td><td>-3.5</td><td>20.37</td><td>70.74</td><td>70.74</td></tr><tr><td>101.45</td><td>-3.4</td><td>20.37</td><td>69.49</td><td>74.19</td></tr><tr><td>101.45</td><td>-3.4</td><td>21.75</td><td>74.20</td><td>74.19</td></tr><tr><td>101.40</td><td>-3.3</td><td>21.75</td><td>72.86</td><td>77.65</td></tr><tr><td>100.50</td><td>-2.3</td><td>50.00</td><td>113.97</td><td>139.82</td></tr><tr><td>100.45</td><td>-2.2</td><td>50.00</td><td>111.12</td><td>143.28</td></tr><tr><td>100.45</td><td>-2.2</td><td>50.00</td><td>111.12</td><td>143.28</td></tr></table></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.4	-	-	-	107.40	-9.3	-	-	-	107.00	-9.0	-	-	-	106.95	-9.0	-	-	-	106.95	-9.0	-	-	-	106.89	-8.9	-	-	-	106.89	-8.9	-	-	-	106.84	-8.9	-	-	-	106.50	-8.7	-	-	-	106.45	-8.6	-	-	-	106.45	-8.6	-	-	-	106.40	-8.6	-	-	-	106.25	-8.5	-	-	-	106.20	-8.4	-	-	-	106.20	-8.4	-	-	-	106.15	-8.4	-	-	-	105.55	-7.9	-	-	-	105.50	-7.9	-	-	-	105.50	-7.9	-	-	-	105.45	-7.8	-	-	-	105.45	-7.8	-	-	-	105.40	-7.8	-	-	-	105.30	-7.7	-	-	-	105.25	-7.6	-	-	-	105.25	-7.6	-	-	-	105.20	-7.6	-	-	-	105.05	-7.5	-	-	-	105.00	-7.4	-	-	-	105.00	-7.4	-	-	-	104.95	-7.4	-	-	-	104.50	-7.0	-	-	-	104.45	-6.9	-	-	-	104.45	-6.9	-	-	-	104.40	-6.9	-	-	-	104.40	-6.9	-	-	-	104.35	-6.8	-	-	-	103.45	-5.8	-	-	-	103.40	-5.8	-	-	-	103.40	-5.8	-	-	-	103.35	-5.7	-	-	-	102.60	-4.8	-	-	-	102.55	-4.8	0.00	0.00	0.00	102.55	-4.8	0.00	0.00	11.73	102.50	-4.7	0.00	0.00	13.02	102.50	-4.7	2.77	13.02	13.02	102.45	-4.6	2.77	12.85	14.31	102.45	-4.6	1.10	5.11	5.10	102.40	-4.6	1.10	5.04	8.56	102.40	-4.6	1.87	8.56	8.56	102.35	-4.5	1.87	8.44	12.01	101.85	-3.9	11.92	46.56	46.56	101.80	-3.8	11.92	45.82	50.01	101.80	-3.8	13.01	50.01	50.01	101.75	-3.8	13.01	49.21	53.47	101.50	-3.5	20.37	70.74	70.74	101.45	-3.4	20.37	69.49	74.19	101.45	-3.4	21.75	74.20	74.19	101.40	-3.3	21.75	72.86	77.65	100.50	-2.3	50.00	113.97	139.82	100.45	-2.2	50.00	111.12	143.28	100.45	-2.2	50.00	111.12	143.28
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102.35	-4.5	1.87	8.44	12.01																																																																																																																																																																																																																																																																																																																												
101.85	-3.9	11.92	46.56	46.56																																																																																																																																																																																																																																																																																																																												
101.80	-3.8	11.92	45.82	50.01																																																																																																																																																																																																																																																																																																																												
101.80	-3.8	13.01	50.01	50.01																																																																																																																																																																																																																																																																																																																												
101.75	-3.8	13.01	49.21	53.47																																																																																																																																																																																																																																																																																																																												
101.50	-3.5	20.37	70.74	70.74																																																																																																																																																																																																																																																																																																																												
101.45	-3.4	20.37	69.49	74.19																																																																																																																																																																																																																																																																																																																												
101.45	-3.4	21.75	74.20	74.19																																																																																																																																																																																																																																																																																																																												
101.40	-3.3	21.75	72.86	77.65																																																																																																																																																																																																																																																																																																																												
100.50	-2.3	50.00	113.97	139.82																																																																																																																																																																																																																																																																																																																												
100.45	-2.2	50.00	111.12	143.28																																																																																																																																																																																																																																																																																																																												
100.45	-2.2	50.00	111.12	143.28																																																																																																																																																																																																																																																																																																																												
Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/16																																																																																																																																																																																																																																																																																																																												
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2116																																																																																																																																																																																																																																																																																																																												
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																												

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

100.40	-2.2	50.00	108.28	146.73
99.50	-1.2	50.00	59.29	208.91
99.45	-1.1	50.00	56.66	212.36
99.45	-1.1	50.00	56.66	212.36
99.40	-1.1	50.00	54.05	215.82
98.50	-0.2	50.00	7.91	277.99
98.45	-0.1	50.00	5.37	281.45
98.45	-0.1	50.00	5.37	281.45
98.40	-0.1	50.00	2.84	284.90
98.15	0.2	50.00	-9.84	302.17
98.10	0.2	50.00	-12.37	305.63

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k}$: -0.05807032
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe t_g = 4.45 m
Profillänge = 9.35 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{k,k} - G'_{k,k} + E_{av,k} \geq B_{v,k}$
 $G_{k,k} = 176.93 \text{ kN/m}$
 $G'_{k,k} = 0.00 \text{ kN/m}$
 $P_{v,k} = 0.00 \text{ kN/m}$
 $E_{av,k} = 53.51 \text{ kN/m}$ ($E_{ah,k} = 304.51 \text{ kN/m}$)
 $B_{v,k} = 101.52$
Summe $V_{k,k} = 128.91 \text{ kN/m}$ (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88 \text{ m}$
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$

Mantelreibung

von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung
102.55	102.45	0.00	S2: Auelehm
102.45	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 239.25 / 1.40 = 170.89 \text{ kN/m}$
 $R_{d,d} = R_{b,d} + R_{s1,d} = 1035.94 \text{ kN/m}$

Einwirkungen
 $V_{d,d} = G_{d,d} - G'_{d,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 61.53 + 0.00 = 273.85 \text{ kN/m}$
 $\Rightarrow \mu = V_{d,d} / R_{d,d} = 273.85 / 1035.94 = 0.26$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage I2 Schnitt 9R	Seite Anlage I2/17
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 2117
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 13_BS 9_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.50 1.75 1.25 0.29 0.28 0.69 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 1.75 107.45 107.45 107.45 105.68 104.92 nein Steuerparameter = 0.50</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.35 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 102.45 5.000 5.000 102.45 80.00 50.000 50.000</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/18
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 2118
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																												
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<div>Ausnutzungsgrad $\mu_{ue} = 319.910 / 379.669 = 0.843$ Bettungslager $B_{h,d} = 319.910 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 379.669 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>$N_{d'}$</td><td>$N(g+q+w)_k$</td><td>$N(g+w)_k$</td><td>$N_{w,k}$</td><td>EA</td><td>EI</td><td>$N_{d'}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-125.01</td><td>-108.34</td><td>-108.34</td><td>-8.21</td><td>6.900E+4</td><td>2.100E+7</td><td>-138.14</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>$w_{x,d}$</td><td>$w_{y,d}$</td><td>$N_{d'}$</td><td>$Q_{d'}$</td><td>$M_{d'}$</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.4</td><td>0.0</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.5</td><td>0.1</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.7</td><td>0.1</td><td>-125.01</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Rechtes Ufer\10_BS 9_LF1.1 (ohne Lasten).vrb eingelesen. Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0077</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{m',k}$</td><td>$\phi_{i,k}$</td><td>$c(pas)_k$</td><td>$c(akt)_k$</td><td>$d(p)/\phi_i$</td><td>$d(a)/\phi_i$</td><td>q_c</td><td>$c_{u,k}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.25</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.45</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>$\phi_{i,k}$</td><td>δ</td><td>θ</td><td>$k_{agh}(40^\circ)$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td>Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>107.448</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>106.450</td><td>106.198</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>106.198</td><td>105.681</td><td>34.346</td><td>34.346</td><td>0.00</td></tr><tr><td>105.681</td><td>105.500</td><td>34.346</td><td>34.346</td><td>0.00</td></tr></table>								Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-125.01	-108.34	-108.34	-8.21	6.900E+4	2.100E+7	-138.14	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.9	0.0	-125.01	0.00	0.00	-0.90	106.95	-9.1	0.0	-125.01	0.00	0.00	-0.90	106.95	-9.1	0.0	-125.01	0.00	0.00	-0.80	106.95	-9.3	0.0	-125.01	0.00	0.00	-0.70	106.95	-9.5	0.0	-125.01	0.00	0.00	-0.60	106.95	-9.6	0.0	-125.01	0.00	0.00	-0.50	106.95	-9.8	0.0	-125.01	0.00	0.00	-0.40	106.95	-10.0	0.0	-125.01	0.00	0.00	-0.30	106.95	-10.2	0.0	-125.01	0.00	0.00	-0.20	106.95	-10.4	0.0	-125.01	0.00	0.00	-0.10	106.95	-10.5	0.1	-125.01	0.00	0.00	0.00	106.95	-10.7	0.1	-125.01	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0077	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	107.448	34.346	34.346	0.00	107.448	106.950	34.346	34.346	0.00	106.950	106.886	34.346	34.346	0.00	106.886	106.450	34.346	34.346	0.00	106.450	106.198	34.346	34.346	0.00	106.198	105.681	34.346	34.346	0.00	105.681	105.500	34.346	34.346	0.00	Schnitt:		Anlage I2	Schnitt 9R	Seite Anlage I2/19	
Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																																																								
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]																																																																																																																																																																																																																																																																																								
1	106.95	0.00	1.00	-125.01	-108.34	-108.34	-8.21	6.900E+4	2.100E+7	-138.14																																																																																																																																																																																																																																																																																								
x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$																																																																																																																																																																																																																																																																																												
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]																																																																																																																																																																																																																																																																																												
-1.00	106.95	-8.9	0.0	-125.01	0.00	0.00																																																																																																																																																																																																																																																																																												
-0.90	106.95	-9.1	0.0	-125.01	0.00	0.00																																																																																																																																																																																																																																																																																												
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-0.30	106.95	-10.2	0.0	-125.01	0.00	0.00																																																																																																																																																																																																																																																																																												
-0.20	106.95	-10.4	0.0	-125.01	0.00	0.00																																																																																																																																																																																																																																																																																												
-0.10	106.95	-10.5	0.1	-125.01	0.00	0.00																																																																																																																																																																																																																																																																																												
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Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																								
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																								
1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																								
2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																								
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																								
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																											
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																											
1	105.25	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																											
2	102.45	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																											
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																											
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																														
107.450	107.448	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
107.448	106.950	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
106.950	106.886	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
106.886	106.450	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
106.450	106.198	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
106.198	105.681	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
105.681	105.500	34.346	34.346	0.00																																																																																																																																																																																																																																																																																														
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Statisch geprüft für Standsicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																		
<table><tr><td>105.500</td><td>105.400</td><td>34.346</td><td>34.346</td><td>0.00</td><td>1.00</td></tr><tr><td>105.400</td><td>105.250</td><td>34.346</td><td>34.346</td><td>1.00</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>34.346</td><td>34.346</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.917</td><td>28.622</td><td>28.622</td><td>5.00</td><td>5.00</td></tr><tr><td>104.917</td><td>104.400</td><td>28.622</td><td>28.622</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>28.622</td><td>28.622</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>28.622</td><td>28.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.550</td><td>28.622</td><td>28.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>46.518</td><td>46.944</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.400</td><td>34.632</td><td>34.837</td><td>5.00</td><td>5.00</td></tr><tr><td>102.400</td><td>101.800</td><td>34.837</td><td>37.298</td><td>5.00</td><td>5.00</td></tr><tr><td>101.800</td><td>101.450</td><td>37.298</td><td>38.734</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.734</td><td>42.837</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>42.837</td><td>46.940</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.449</td><td>46.940</td><td>51.043</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>98.099</td><td>51.043</td><td>52.479</td><td>5.00</td><td>5.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.479</td><td>126.712</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.40</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>102.40</td><td>-3.14</td><td>-5.27</td></tr><tr><td>102.40</td><td>101.80</td><td>-5.27</td><td>-30.78</td></tr><tr><td>101.80</td><td>101.45</td><td>-30.78</td><td>-45.66</td></tr><tr><td>101.45</td><td>100.45</td><td>-45.66</td><td>-88.17</td></tr><tr><td>100.45</td><td>99.45</td><td>-88.17</td><td>-130.68</td></tr><tr><td>99.45</td><td>98.45</td><td>-130.68</td><td>-173.20</td></tr><tr><td>98.45</td><td>98.10</td><td>-173.20</td><td>-188.08</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.08</td><td>-957.32</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-18.1</td><td>-19.7</td><td>-4.9</td><td>-125.0</td></tr><tr><td>106.95</td><td>-18.1</td><td>105.3</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.4</td><td>102.7</td><td>1.7</td><td></td></tr><tr><td>106.45</td><td>-36.1</td><td>85.5</td><td>42.8</td><td></td></tr><tr><td>106.20</td><td>-45.3</td><td>75.5</td><td>63.1</td><td></td></tr><tr><td>105.68</td><td>-64.0</td><td>55.1</td><td>96.9</td><td></td></tr><tr><td>105.50</td><td>-70.5</td><td>48.0</td><td>106.2</td><td></td></tr><tr><td>105.40</td><td>-74.1</td><td>44.0</td><td>110.8</td><td></td></tr><tr><td>105.25</td><td>-79.5</td><td>37.7</td><td>116.9</td><td></td></tr><tr><td>105.00</td><td>-87.6</td><td>26.7</td><td>125.0</td><td></td></tr><tr><td>104.92</td><td>-90.2</td><td>23.5</td><td>127.1</td><td></td></tr><tr><td>104.40</td><td>-106.0</td><td>3.4</td><td>134.0</td><td></td></tr><tr><td>104.30</td><td>-109.0</td><td>-0.5</td><td>134.1</td><td></td></tr><tr><td>103.40</td><td>-136.5</td><td>-35.5</td><td>117.9</td><td></td></tr><tr><td>102.55</td><td>-162.5</td><td>-68.6</td><td>73.7</td><td></td></tr><tr><td>102.45</td><td>-165.0</td><td>-73.8</td><td>66.5</td><td></td></tr><tr><td>102.40</td><td>-166.0</td><td>-75.8</td><td>62.8</td><td></td></tr><tr><td>101.80</td><td>-171.5</td><td>-85.4</td><td>13.1</td><td></td></tr><tr><td>101.45</td><td>-169.5</td><td>-78.6</td><td>-15.9</td><td></td></tr></table>								105.500	105.400	34.346	34.346	0.00	1.00	105.400	105.250	34.346	34.346	1.00	2.50	105.250	105.000	34.346	34.346	2.50	5.00	105.000	104.917	28.622	28.622	5.00	5.00	104.917	104.400	28.622	28.622	5.00	5.00	104.400	104.300	28.622	28.622	5.00	5.00	104.300	103.400	28.622	28.622	5.00	5.00	103.400	102.550	28.622	28.622	5.00	5.00	102.550	102.450	46.518	46.944	5.00	5.00	102.450	102.400	34.632	34.837	5.00	5.00	102.400	101.800	34.837	37.298	5.00	5.00	101.800	101.450	37.298	38.734	5.00	5.00	101.450	100.449	38.734	42.837	5.00	5.00	100.449	99.449	42.837	46.940	5.00	5.00	99.449	98.449	46.940	51.043	5.00	5.00	98.449	98.099	51.043	52.479	5.00	5.00	98.099	80.000	52.479	126.712	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.40	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	102.40	-3.14	-5.27	102.40	101.80	-5.27	-30.78	101.80	101.45	-30.78	-45.66	101.45	100.45	-45.66	-88.17	100.45	99.45	-88.17	-130.68	99.45	98.45	-130.68	-173.20	98.45	98.10	-173.20	-188.08	98.10	80.00	-188.08	-957.32	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-18.1	-19.7	-4.9	-125.0	106.95	-18.1	105.3	-4.9		106.89	-20.4	102.7	1.7		106.45	-36.1	85.5	42.8		106.20	-45.3	75.5	63.1		105.68	-64.0	55.1	96.9		105.50	-70.5	48.0	106.2		105.40	-74.1	44.0	110.8		105.25	-79.5	37.7	116.9		105.00	-87.6	26.7	125.0		104.92	-90.2	23.5	127.1		104.40	-106.0	3.4	134.0		104.30	-109.0	-0.5	134.1		103.40	-136.5	-35.5	117.9		102.55	-162.5	-68.6	73.7		102.45	-165.0	-73.8	66.5		102.40	-166.0	-75.8	62.8		101.80	-171.5	-85.4	13.1		101.45	-169.5	-78.6	-15.9	
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3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																																		
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98.45	98.10	-173.20	-188.08																																																																																																																																																																																																																																																																																																																					
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107.45	-0.1	-0.1	0.0																																																																																																																																																																																																																																																																																																																					
106.95	-18.1	-19.7	-4.9	-125.0																																																																																																																																																																																																																																																																																																																				
106.95	-18.1	105.3	-4.9																																																																																																																																																																																																																																																																																																																					
106.89	-20.4	102.7	1.7																																																																																																																																																																																																																																																																																																																					
106.45	-36.1	85.5	42.8																																																																																																																																																																																																																																																																																																																					
106.20	-45.3	75.5	63.1																																																																																																																																																																																																																																																																																																																					
105.68	-64.0	55.1	96.9																																																																																																																																																																																																																																																																																																																					
105.50	-70.5	48.0	106.2																																																																																																																																																																																																																																																																																																																					
105.40	-74.1	44.0	110.8																																																																																																																																																																																																																																																																																																																					
105.25	-79.5	37.7	116.9																																																																																																																																																																																																																																																																																																																					
105.00	-87.6	26.7	125.0																																																																																																																																																																																																																																																																																																																					
104.92	-90.2	23.5	127.1																																																																																																																																																																																																																																																																																																																					
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102.55	-162.5	-68.6	73.7																																																																																																																																																																																																																																																																																																																					
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101.80	-171.5	-85.4	13.1																																																																																																																																																																																																																																																																																																																					
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>100.45</div><div>-143.2</div><div>-10.1</div><div>-66.0</div><div></div><div></div></div><div><div>99.45</div><div>-121.2</div><div>42.9</div><div>-43.4</div><div></div><div></div></div><div><div>98.45</div><div>-126.0</div><div>23.5</div><div>-4.4</div><div></div><div></div></div><div><div>98.10</div><div>-132.8</div><div>0.0</div><div>0.0</div><div></div><div></div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div></div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div><div></div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div><div></div></div><div><div>106.95</div><div>-15.7</div><div>-17.2</div><div>-4.3</div><div>-108.3</div><div></div></div><div><div>106.95</div><div>-15.7</div><div>91.2</div><div>-4.3</div><div></div><div></div></div><div><div>106.89</div><div>-17.7</div><div>89.0</div><div>1.5</div><div></div><div></div></div><div><div>106.45</div><div>-31.4</div><div>74.0</div><div>37.0</div><div></div><div></div></div><div><div>106.20</div><div>-39.4</div><div>65.3</div><div>54.6</div><div></div><div></div></div><div><div>105.68</div><div>-55.6</div><div>47.6</div><div>83.8</div><div></div><div></div></div><div><div>105.50</div><div>-61.3</div><div>41.4</div><div>91.8</div><div></div><div></div></div><div><div>105.40</div><div>-64.4</div><div>37.9</div><div>95.8</div><div></div><div></div></div><div><div>105.25</div><div>-69.1</div><div>32.5</div><div>101.0</div><div></div><div></div></div><div><div>105.00</div><div>-76.2</div><div>22.9</div><div>108.0</div><div></div><div></div></div><div><div>104.92</div><div>-78.4</div><div>20.1</div><div>109.8</div><div></div><div></div></div><div><div>104.40</div><div>-92.1</div><div>2.8</div><div>115.7</div><div></div><div></div></div><div><div>104.30</div><div>-94.8</div><div>-0.6</div><div>115.8</div><div></div><div></div></div><div><div>103.40</div><div>-118.7</div><div>-30.8</div><div>101.7</div><div></div><div></div></div><div><div>102.55</div><div>-141.3</div><div>-59.4</div><div>63.3</div><div></div><div></div></div><div><div>102.45</div><div>-143.6</div><div>-64.0</div><div>57.1</div><div></div><div></div></div><div><div>102.40</div><div>-144.4</div><div>-65.7</div><div>53.9</div><div></div><div></div></div><div><div>101.80</div><div>-149.3</div><div>-73.9</div><div>10.8</div><div></div><div></div></div><div><div>101.45</div><div>-147.5</div><div>-68.0</div><div>-14.2</div><div></div><div></div></div><div><div>100.45</div><div>-124.6</div><div>-8.6</div><div>-57.5</div><div></div><div></div></div><div><div>99.45</div><div>-105.5</div><div>37.3</div><div>-37.8</div><div></div><div></div></div><div><div>98.45</div><div>-109.7</div><div>20.4</div><div>-3.8</div><div></div><div></div></div><div><div>98.10</div><div>-115.6</div><div>0.0</div><div>0.0</div><div></div><div></div></div></div> <div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div></div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div><div></div></div></div><div><div>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div></div><div><div>107.45</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div><div></div></div><div><div>106.95</div><div>-15.7</div><div>-17.2</div><div>-4.3</div><div>-108.3</div><div></div></div><div><div>106.95</div><div>-15.7</div><div>91.2</div><div>-4.3</div><div></div><div></div></div><div><div>106.89</div><div>-17.7</div><div>89.0</div><div>1.5</div><div></div><div></div></div><div><div>106.45</div><div>-31.4</div><div>74.0</div><div>37.0</div><div></div><div></div></div><div><div>106.20</div><div>-39.4</div><div>65.3</div><div>54.6</div><div></div><div></div></div><div><div>105.68</div><div>-55.6</div><div>47.6</div><div>83.8</div><div></div><div></div></div><div><div>105.50</div><div>-61.3</div><div>41.4</div><div>91.8</div><div></div><div></div></div><div><div>105.40</div><div>-64.4</div><div>37.9</div><div>95.8</div><div></div><div></div></div><div><div>105.25</div><div>-69.1</div><div>32.5</div><div>101.0</div><div></div><div></div></div><div><div>105.00</div><div>-76.2</div><div>22.9</div><div>108.0</div><div></div><div></div></div><div><div>104.92</div><div>-78.4</div><div>20.1</div><div>109.8</div><div></div><div></div></div><div><div>104.40</div><div>-92.1</div><div>2.8</div><div>115.7</div><div></div><div></div></div><div><div>104.30</div><div>-94.8</div><div>-0.6</div><div>115.8</div><div></div><div></div></div><div><div>103.40</div><div>-118.7</div><div>-30.8</div><div>101.7</div><div></div><div></div></div><div><div>102.55</div><div>-141.3</div><div>-59.4</div><div>63.3</div><div></div><div></div></div><div><div>102.45</div><div>-143.6</div><div>-64.0</div><div>57.1</div><div></div><div></div></div><div><div>102.40</div><div>-144.4</div><div>-65.7</div><div>53.9</div><div></div><div></div></div><div><div>101.80</div><div>-149.3</div><div>-73.9</div><div>10.8</div><div></div><div></div></div><div><div>101.45</div><div>-147.5</div><div>-68.0</div><div>-14.2</div><div></div><div></div></div><div><div>100.45</div><div>-124.6</div><div>-8.6</div><div>-57.5</div><div></div><div></div></div><div><div>99.45</div><div>-105.5</div><div>37.3</div><div>-37.8</div><div></div><div></div></div><div><div>98.45</div><div>-109.7</div><div>20.4</div><div>-3.8</div><div></div><div></div></div><div><div>98.10</div><div>-115.6</div><div>0.0</div><div>0.0</div><div></div><div></div></div></div> 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Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/21
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Förmel



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																		
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																		
<table><tr><td>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.68</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.92</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.30</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.80</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> 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<table><tr><td>104.30</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.3</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-5.2</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-5.2</td><td>2.50</td><td>13.02</td><td>13.02</td></tr><tr><td>102.45</td><td>-5.1</td><td>2.50</td><td>12.86</td><td>14.31</td></tr><tr><td>102.45</td><td>-5.1</td><td>0.99</td><td>5.11</td><td>5.10</td></tr><tr><td>102.40</td><td>-5.1</td><td>0.99</td><td>5.04</td><td>8.56</td></tr><tr><td>102.40</td><td>-5.1</td><td>1.69</td><td>8.56</td><td>8.56</td></tr><tr><td>102.35</td><td>-5.0</td><td>1.69</td><td>8.45</td><td>12.01</td></tr><tr><td>101.85</td><td>-4.4</td><td>10.69</td><td>46.56</td><td>46.56</td></tr><tr><td>101.80</td><td>-4.3</td><td>10.69</td><td>45.85</td><td>50.01</td></tr><tr><td>101.80</td><td>-4.3</td><td>11.66</td><td>50.01</td><td>50.01</td></tr><tr><td>101.75</td><td>-4.2</td><td>11.66</td><td>49.24</td><td>53.47</td></tr><tr><td>101.50</td><td>-3.9</td><td>18.18</td><td>70.74</td><td>70.74</td></tr><tr><td>101.45</td><td>-3.8</td><td>18.18</td><td>69.53</td><td>74.19</td></tr><tr><td>101.45</td><td>-3.8</td><td>19.39</td><td>74.19</td><td>74.19</td></tr><tr><td>101.40</td><td>-3.8</td><td>19.39</td><td>72.91</td><td>77.65</td></tr><tr><td>100.50</td><td>-2.6</td><td>50.00</td><td>129.54</td><td>139.82</td></tr><tr><td>100.45</td><td>-2.5</td><td>50.00</td><td>126.39</td><td>143.28</td></tr><tr><td>100.45</td><td>-2.5</td><td>50.00</td><td>126.39</td><td>143.28</td></tr><tr><td>100.40</td><td>-2.5</td><td>50.00</td><td>123.26</td><td>146.73</td></tr><tr><td>99.50</td><td>-1.4</td><td>50.00</td><td>68.81</td><td>208.91</td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>65.89</td><td>212.36</td></tr><tr><td>99.45</td><td>-1.3</td><td>50.00</td><td>65.89</td><td>212.36</td></tr><tr><td>99.40</td><td>-1.3</td><td>50.00</td><td>62.97</td><td>215.82</td></tr><tr><td>98.50</td><td>-0.2</td><td>50.00</td><td>11.33</td><td>277.99</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.49</td><td>281.45</td></tr><tr><td>98.45</td><td>-0.2</td><td>50.00</td><td>8.49</td><td>281.45</td></tr><tr><td>98.40</td><td>-0.1</td><td>50.00</td><td>5.65</td><td>284.90</td></tr><tr><td>98.15</td><td>0.2</td><td>50.00</td><td>-8.55</td><td>302.17</td></tr><tr><td>98.10</td><td>0.2</td><td>50.00</td><td>-11.39</td><td>305.63</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06504815 Theoretischer Fußpunkt = 98.099 m</p> <p>Einbindetiefe tg = 4.45 m Profillänge = 9.35 m</p>			104.30	-7.3	-	-	-	104.30	-7.3	-	-	-	104.25	-7.2	-	-	-	103.45	-6.4	-	-	-	103.40	-6.3	-	-	-	103.40	-6.3	-	-	-	103.35	-6.3	-	-	-	102.60	-5.3	-	-	-	102.55	-5.3	0.00	0.00	0.00	102.55	-5.3	0.00	0.00	11.73	102.50	-5.2	0.00	0.00	13.02	102.50	-5.2	2.50	13.02	13.02	102.45	-5.1	2.50	12.86	14.31	102.45	-5.1	0.99	5.11	5.10	102.40	-5.1	0.99	5.04	8.56	102.40	-5.1	1.69	8.56	8.56	102.35	-5.0	1.69	8.45	12.01	101.85	-4.4	10.69	46.56	46.56	101.80	-4.3	10.69	45.85	50.01	101.80	-4.3	11.66	50.01	50.01	101.75	-4.2	11.66	49.24	53.47	101.50	-3.9	18.18	70.74	70.74	101.45	-3.8	18.18	69.53	74.19	101.45	-3.8	19.39	74.19	74.19	101.40	-3.8	19.39	72.91	77.65	100.50	-2.6	50.00	129.54	139.82	100.45	-2.5	50.00	126.39	143.28	100.45	-2.5	50.00	126.39	143.28	100.40	-2.5	50.00	123.26	146.73	99.50	-1.4	50.00	68.81	208.91	99.45	-1.3	50.00	65.89	212.36	99.45	-1.3	50.00	65.89	212.36	99.40	-1.3	50.00	62.97	215.82	98.50	-0.2	50.00	11.33	277.99	98.45	-0.2	50.00	8.49	281.45	98.45	-0.2	50.00	8.49	281.45	98.40	-0.1	50.00	5.65	284.90	98.15	0.2	50.00	-8.55	302.17	98.10	0.2	50.00	-11.39	305.63
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Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																			
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_{,k} = 176.93 \text{ kN/m}$</p> <p>$G'_{,k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 61.08 \text{ kN/m}$ ($E_{ah,k} = 348.46 \text{ kN/m}$)</p> <p>$B_{v,k} = 110.03$</p> <p>Summe $V_{,k} = 127.98 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.98 bis 95.46 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.10 m = 1.000 m²/m $\implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 239.25 / 1.40 = 170.89 \text{ kN/m}$</p> <p>$R_{,d} = R_{b,d} + R_{s1,d} = 1035.94 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 212.32 - 0.00 + 70.24 + 0.00 = 282.55 \text{ kN/m}$</p> <p>$\implies \mu = V_{,d} / R_{,d} = 282.55 / 1035.94 = 0.27$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.45	0.00	S2: Auelehm											
102.45	98.10	55.00	s3: Flussskies, -sand											
Schnitt:	Anlage I2 Schnitt 9R	Seite Anlage I2/24												
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 21/24												
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025												



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 14_BS 9_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.70 108.70 108.69 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(links) x(rechts) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 40.00 0.00 2.00 108.70 108.70 108.70 106.64 105.74 ja Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 2125
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 171.767 / 264.349 = 0.650$</div> <div>Bettungslager $B_{h,d} = 171.767 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 264.349 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge $N_{d'}$ $N(g+q+w)_k$ $N(g+w)_k$ $N_{w,k}$ EA EI $N_{d'}$</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -365.86 -305.81 -224.96 -49.50 3.900E+7 2.100E+7 -408.09 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y $w_{x,d}$ $w_{y,d}$ $N_{d'}$ $Q_{d'}$ $M_{d'}$</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -7.1 0.0 -366.28 0.00 0.00</div> <div>-7.47 103.72 -7.1 0.0 -366.28 0.00 0.00</div> <div>-7.47 103.72 -7.1 0.0 -366.28 0.00 0.00</div> <div>-6.64 103.72 -7.1 0.0 -366.28 0.00 0.00</div> <div>-5.81 103.72 -7.2 0.0 -366.28 0.00 0.00</div> <div>-4.98 103.72 -7.2 0.0 -366.28 0.00 0.00</div> <div>-4.15 103.72 -7.2 0.0 -366.28 0.00 0.00</div> <div>-3.32 103.72 -7.2 0.0 -366.28 0.00 0.00</div> <div>-2.49 103.72 -7.2 0.1 -366.28 0.00 0.00</div> <div>-1.66 103.72 -7.2 0.1 -366.28 0.00 0.00</div> <div>-0.83 103.72 -7.2 0.1 -366.28 0.00 0.00</div> <div>0.00 103.72 -7.2 0.1 -366.28 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0062</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{a,k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.25 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.45 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.25 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.45 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.700 108.698 0.000 14.416 0.00 0.00</div> <div>108.698 108.694 14.416 19.528 0.00 0.00</div> <div>108.694 107.700 19.528 26.888 0.00 0.00</div>							
Schnitt:		Anlage I2		Schnitt 9R		Seite Anlage I2/26	
Kapitel:		5		LF 3 (BS-T, mit Lasten)		Archiv Nr. 2126	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025			

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																						
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<table><tr><td>107.700</td><td>107.450</td><td>26.888</td><td>28.739</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>106.700</td><td>28.739</td><td>34.292</td><td>0.00</td><td>0.00</td></tr><tr><td>106.700</td><td>106.644</td><td>34.292</td><td>34.710</td><td>0.00</td><td>0.00</td></tr><tr><td>106.644</td><td>105.737</td><td>34.710</td><td>25.836</td><td>0.00</td><td>0.00</td></tr><tr><td>105.737</td><td>105.700</td><td>25.836</td><td>26.109</td><td>0.00</td><td>0.00</td></tr><tr><td>105.700</td><td>105.500</td><td>26.109</td><td>27.589</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>27.589</td><td>28.564</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>104.650</td><td>35.030</td><td>37.583</td><td>2.50</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>37.583</td><td>41.540</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>41.540</td><td>41.838</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.650</td><td>41.838</td><td>46.093</td><td>18.50</td><td>28.50</td></tr><tr><td>102.650</td><td>102.550</td><td>46.093</td><td>46.518</td><td>28.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.450</td><td>46.518</td><td>46.944</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>101.700</td><td>34.632</td><td>37.709</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.709</td><td>41.811</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>41.811</td><td>45.914</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>45.914</td><td>50.017</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>50.017</td><td>52.479</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>52.479</td><td>126.712</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.65</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>101.70</td><td>-3.14</td><td>-35.03</td></tr><tr><td>101.70</td><td>100.70</td><td>-35.03</td><td>-77.54</td></tr><tr><td>100.70</td><td>99.70</td><td>-77.54</td><td>-120.06</td></tr><tr><td>99.70</td><td>98.70</td><td>-120.06</td><td>-162.57</td></tr><tr><td>98.70</td><td>98.10</td><td>-162.57</td><td>-188.08</td></tr><tr><td>98.10</td><td>80.00</td><td>-188.08</td><td>-957.32</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.70</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td></tr><tr><td>107.45</td><td>-40.9</td><td>-37.5</td><td>-22.0</td><td></td></tr><tr><td>107.45</td><td>-95.5</td><td>-37.5</td><td>-57.0</td><td></td></tr><tr><td>106.70</td><td>-122.3</td><td>-66.5</td><td>-95.7</td><td></td></tr><tr><td>106.64</td><td>-124.4</td><td>-68.8</td><td>-99.5</td><td></td></tr><tr><td>105.74</td><td>-156.0</td><td>-101.5</td><td>-177.6</td><td></td></tr><tr><td>105.70</td><td>-157.2</td><td>-102.6</td><td>-181.3</td><td></td></tr><tr><td>105.50</td><td>-163.8</td><td>-108.7</td><td>-202.4</td><td></td></tr><tr><td>105.25</td><td>-172.2</td><td>-117.2</td><td>-230.7</td><td></td></tr><tr><td>104.65</td><td>-192.0</td><td>-146.2</td><td>-309.4</td><td></td></tr><tr><td>103.72</td><td>-223.6</td><td>-203.2</td><td>-470.7</td><td>-366.3</td></tr><tr><td>103.72</td><td>-223.6</td><td>163.1</td><td>-470.7</td><td></td></tr><tr><td>103.65</td><td>-226.0</td><td>158.2</td><td>-459.5</td><td></td></tr><tr><td>102.65</td><td>-261.3</td><td>79.4</td><td>-339.2</td><td></td></tr><tr><td>102.55</td><td>-264.9</td><td>70.6</td><td>-331.7</td><td></td></tr><tr><td>102.45</td><td>-267.4</td><td>66.0</td><td>-324.9</td><td></td></tr><tr><td>101.70</td><td>-273.9</td><td>59.4</td><td>-280.4</td><td></td></tr><tr><td>100.70</td><td>-261.2</td><td>100.1</td><td>-201.9</td><td></td></tr></table>								107.700	107.450	26.888	28.739	0.00	0.00	107.450	106.700	28.739	34.292	0.00	0.00	106.700	106.644	34.292	34.710	0.00	0.00	106.644	105.737	34.710	25.836	0.00	0.00	105.737	105.700	25.836	26.109	0.00	0.00	105.700	105.500	26.109	27.589	0.00	0.00	105.500	105.250	27.589	28.564	0.00	2.50	105.250	104.650	35.030	37.583	2.50	8.50	104.650	103.720	37.583	41.540	8.50	17.80	103.720	103.650	41.540	41.838	17.80	18.50	103.650	102.650	41.838	46.093	18.50	28.50	102.650	102.550	46.093	46.518	28.50	29.50	102.550	102.450	46.518	46.944	0.00	0.00	102.450	101.700	34.632	37.709	0.00	0.00	101.700	100.699	37.709	41.811	0.00	0.00	100.699	99.699	41.811	45.914	0.00	0.00	99.699	98.699	45.914	50.017	0.00	0.00	98.699	98.099	50.017	52.479	0.00	0.00	98.099	80.000	52.479	126.712	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.65	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	101.70	-3.14	-35.03	101.70	100.70	-35.03	-77.54	100.70	99.70	-77.54	-120.06	99.70	98.70	-120.06	-162.57	98.70	98.10	-162.57	-188.08	98.10	80.00	-188.08	-957.32	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.70	-0.1	0.0	0.0		108.69	-0.2	-0.1	0.0		107.70	-32.3	-29.0	-13.7		107.45	-40.9	-37.5	-22.0		107.45	-95.5	-37.5	-57.0		106.70	-122.3	-66.5	-95.7		106.64	-124.4	-68.8	-99.5		105.74	-156.0	-101.5	-177.6		105.70	-157.2	-102.6	-181.3		105.50	-163.8	-108.7	-202.4		105.25	-172.2	-117.2	-230.7		104.65	-192.0	-146.2	-309.4		103.72	-223.6	-203.2	-470.7	-366.3	103.72	-223.6	163.1	-470.7		103.65	-226.0	158.2	-459.5		102.65	-261.3	79.4	-339.2		102.55	-264.9	70.6	-331.7		102.45	-267.4	66.0	-324.9		101.70	-273.9	59.4	-280.4		100.70	-261.2	100.1	-201.9	
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106.70	-122.3	-66.5	-95.7																																																																																																																																																																																																																																																																																																																									
106.64	-124.4	-68.8	-99.5																																																																																																																																																																																																																																																																																																																									
105.74	-156.0	-101.5	-177.6																																																																																																																																																																																																																																																																																																																									
105.70	-157.2	-102.6	-181.3																																																																																																																																																																																																																																																																																																																									
105.50	-163.8	-108.7	-202.4																																																																																																																																																																																																																																																																																																																									
105.25	-172.2	-117.2	-230.7																																																																																																																																																																																																																																																																																																																									
104.65	-192.0	-146.2	-309.4																																																																																																																																																																																																																																																																																																																									
103.72	-223.6	-203.2	-470.7	-366.3																																																																																																																																																																																																																																																																																																																								
103.72	-223.6	163.1	-470.7																																																																																																																																																																																																																																																																																																																									
103.65	-226.0	158.2	-459.5																																																																																																																																																																																																																																																																																																																									
102.65	-261.3	79.4	-339.2																																																																																																																																																																																																																																																																																																																									
102.55	-264.9	70.6	-331.7																																																																																																																																																																																																																																																																																																																									
102.45	-267.4	66.0	-324.9																																																																																																																																																																																																																																																																																																																									
101.70	-273.9	59.4	-280.4																																																																																																																																																																																																																																																																																																																									
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Dipl.-Ing. A. Forner

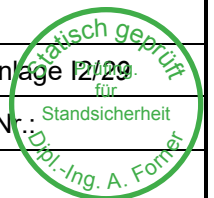


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.70 -262.4 101.1 -96.7</div><div>98.70 -279.8 51.7 -16.3</div><div>98.10 -286.3 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>108.70 0.0 0.0 0.0</div><div>108.70 0.0 0.0 0.0</div><div>108.69 -0.1 -0.1 0.0</div><div>107.70 -27.4 -23.1 -10.9</div><div>107.45 -34.6 -30.1 -17.6</div><div>107.45 -80.1 -30.1 -46.7</div><div>106.70 -102.9 -53.7 -77.9</div><div>106.64 -104.7 -55.7 -81.0</div><div>105.74 -131.8 -83.1 -144.5</div><div>105.70 -132.9 -84.1 -147.6</div><div>105.50 -138.6 -89.5 -164.9</div><div>105.25 -145.9 -96.8 -188.2</div><div>104.65 -163.1 -121.9 -253.5</div><div>103.72 -190.6 -170.9 -388.7 -305.8</div><div>103.72 -190.6 134.9 -388.7</div><div>103.65 -192.7 130.7 -379.4</div><div>102.65 -223.4 63.3 -281.2</div><div>102.55 -226.5 55.7 -275.3</div><div>102.45 -228.8 51.7 -269.9</div><div>101.70 -234.3 46.3 -235.4</div><div>100.70 -222.7 83.5 -171.8</div><div>99.70 -223.1 86.2 -82.9</div><div>98.70 -237.9 44.5 -14.1</div><div>98.10 -243.8 0.0 0.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>108.70 0.0 0.0 0.0</div><div>108.70 0.0 0.0 0.0</div><div>108.69 -0.1 0.0 0.0</div><div>107.70 -21.7 -7.6 -3.2</div><div>107.45 -27.5 -10.6 -5.4</div><div>107.45 -73.0 -10.6 -34.5</div><div>106.70 -91.6 -22.6 -46.7</div><div>106.64 -93.0 -23.7 -48.0</div><div>105.74 -117.6 -44.0 -78.3</div><div>105.70 -118.7 -45.0 -79.9</div><div>105.50 -124.4 -50.4 -89.4</div><div>105.25 -131.7 -57.7 -102.9</div><div>104.65 -148.9 -82.8 -144.8</div><div>103.72 -176.3 -131.8 -243.6 -225.0</div><div>103.72 -176.3 93.2 -243.6</div><div>103.65 -178.4 89.0 -237.3</div><div>102.65 -209.2 21.5 -180.8</div><div>102.55 -212.3 14.0 -179.0</div><div>102.45 -214.5 10.0 -177.9</div><div>101.70 -219.1 6.9 -174.1</div><div>100.70 -202.2 57.3 -144.0</div><div>99.70 -197.3 73.5 -74.2</div><div>98.70 -209.8 41.1 -13.1</div><div>98.10 -217.0 0.0 0.0</div></div></div><div><div>Schnittgrößen (q,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>108.70 0.0 0.0 0.0</div><div>108.70 0.0 0.0 0.0</div><div>108.69 0.0 -0.1 0.0</div><div>107.70 -5.7 -15.6 -7.8</div><div>107.45 -7.1 -19.5 -12.2</div><div>106.70 -11.3 -31.2 -31.1</div><div>106.64 -11.7 -32.0 -32.9</div><div>105.74 -14.2 -39.1 -66.2</div></div></div></div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/28
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2128
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																									
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td><td></td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td><td></td></tr><tr><td>108.70</td><td>-22.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.70</td><td>-22.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.70</td><td>-22.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.69</td><td>-22.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.69</td><td>-22.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>108.64</td><td>-22.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.75</td><td>-18.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.70</td><td>-18.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.70</td><td>-18.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.65</td><td>-18.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.50</td><td>-18.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.45</td><td>-17.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.45</td><td>-17.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.40</td><td>-17.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.75</td><td>-15.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.70</td><td>-15.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.70</td><td>-15.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.64</td><td>-15.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.64</td><td>-15.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.59</td><td>-14.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.79</td><td>-12.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.74</td><td>-12.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.74</td><td>-12.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.70</td><td>-11.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.70</td><td>-11.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.65</td><td>-11.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.55</td><td>-11.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-11.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-11.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.45</td><td>-11.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.30</td><td>-10.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.25</td><td>-10.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.25</td><td>-10.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.20</td><td>-10.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.70</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.65</td><td>-8.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.65</td><td>-8.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>104.60</td><td>-8.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.77</td><td>-6.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.72</td><td>-6.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.72</td><td>-6.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.70</td><td>-6.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.70</td><td>-6.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.65</td><td>-6.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.65</td><td>-6.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>103.60</td><td>-6.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.70</td><td>-4.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.65</td><td>-4.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.65</td><td>-4.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>102.60</td><td>-4.0</td><td>-</td><td>-</td><td>-</td><td></td></tr></table>						105.70	-14.2	-39.1	-67.7			105.50	-14.2	-39.1	-75.5			105.25	-14.2	-39.1	-85.3			104.65	-14.2	-39.1	-108.7			103.72	-14.2	-39.1	-145.1	-89.2		103.72	-14.2	41.7	-145.1			103.65	-14.2	41.7	-142.2			102.65	-14.2	41.7	-100.4			102.55	-14.2	41.7	-96.2			102.45	-14.3	41.7	-92.1			101.70	-15.2	39.3	-61.4			100.70	-20.4	26.2	-27.8			99.70	-25.8	12.7	-8.6			98.70	-28.1	3.4	-0.9			98.10	-26.8	0.0	0.0			Tiefe	w	ks	sig,Bh,k	eph,k		[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]		108.70	-22.2	-	-	-		108.70	-22.2	-	-	-		108.70	-22.2	-	-	-		108.69	-22.2	-	-	-		108.69	-22.2	-	-	-		108.64	-22.1	-	-	-		107.75	-18.9	-	-	-		107.70	-18.7	-	-	-		107.70	-18.7	-	-	-		107.65	-18.6	-	-	-		107.50	-18.0	-	-	-		107.45	-17.9	-	-	-		107.45	-17.9	-	-	-		107.40	-17.7	-	-	-		106.75	-15.4	-	-	-		106.70	-15.3	-	-	-		106.70	-15.3	-	-	-		106.64	-15.1	-	-	-		106.64	-15.1	-	-	-		106.59	-14.9	-	-	-		105.79	-12.2	-	-	-		105.74	-12.1	-	-	-		105.74	-12.1	-	-	-		105.70	-11.9	-	-	-		105.70	-11.9	-	-	-		105.65	-11.8	-	-	-		105.55	-11.5	-	-	-		105.50	-11.3	-	-	-		105.50	-11.3	-	-	-		105.45	-11.1	-	-	-		105.30	-10.7	-	-	-		105.25	-10.5	-	-	-		105.25	-10.5	-	-	-		105.20	-10.4	-	-	-		104.70	-8.9	-	-	-		104.65	-8.7	-	-	-		104.65	-8.7	-	-	-		104.60	-8.6	-	-	-		103.77	-6.4	-	-	-		103.72	-6.3	-	-	-		103.72	-6.3	-	-	-		103.70	-6.2	-	-	-		103.70	-6.2	-	-	-		103.65	-6.1	-	-	-		103.65	-6.1	-	-	-		103.60	-6.0	-	-	-		102.70	-4.1	-	-	-		102.65	-4.1	-	-	-		102.65	-4.1	-	-	-		102.60	-4.0	-	-	-		102.60	-4.0	-	-	-	
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):									
Auftraggeber: Stadtverwaltung Leipzig											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>102.55</div><div>-3.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div>102.55</div><div>-3.9</div><div>0.00</div><div>0.00</div><div>11.73</div></div> <div><div>102.50</div><div>-3.8</div><div>0.00</div><div>0.00</div><div>13.02</div></div> <div>102.50</div> <div>-3.8</div> <div>3.43</div> <div>13.02</div> <div>13.02</div> <div><div>102.45</div><div>-3.7</div><div>3.43</div><div>12.73</div><div>14.31</div></div> <div>102.45</div> <div>-3.7</div> <div>1.37</div> <div>5.10</div> <div>5.10</div> <div><div>102.40</div><div>-3.6</div><div>1.37</div><div>4.99</div><div>8.56</div></div> <div>101.75</div> <div>-2.6</div> <div>20.23</div> <div>53.47</div> <div>53.47</div> <div><div>101.70</div><div>-2.6</div><div>20.23</div><div>52.08</div><div>56.92</div></div> <div>101.70</div> <div>-2.6</div> <div>22.12</div> <div>56.92</div> <div>56.92</div> <div><div>101.65</div><div>-2.5</div><div>22.12</div><div>55.42</div><div>60.37</div></div> <div>100.75</div> <div>-1.4</div> <div>50.00</div> <div>72.30</div> <div>122.55</div> <div><div>100.70</div><div>-1.4</div><div>50.00</div><div>69.75</div><div>126.01</div></div> <div>100.70</div> <div>-1.4</div> <div>50.00</div> <div>69.75</div> <div>126.01</div> <div><div>100.65</div><div>-1.3</div><div>50.00</div><div>67.24</div><div>129.46</div></div> <div>99.75</div> <div>-0.5</div> <div>50.00</div> <div>27.22</div> <div>191.64</div> <div><div>99.70</div><div>-0.5</div><div>50.00</div><div>25.23</div><div>195.09</div></div> <div>99.70</div> <div>-0.5</div> <div>50.00</div> <div>25.23</div> <div>195.09</div> <div><div>99.65</div><div>-0.5</div><div>50.00</div><div>23.25</div><div>198.55</div></div> <div>98.75</div> <div>0.2</div> <div>50.00</div> <div>-10.32</div> <div>260.72</div> <div><div>98.70</div><div>0.2</div><div>50.00</div><div>-12.12</div><div>264.18</div></div> <div>98.70</div> <div>0.2</div> <div>50.00</div> <div>-12.12</div> <div>264.18</div> <div><div>98.65</div><div>0.3</div><div>50.00</div><div>-13.91</div><div>267.63</div></div> <div>98.15</div> <div>0.6</div> <div>50.00</div> <div>-31.78</div> <div>302.17</div> <div><div>98.10</div><div>0.7</div><div>50.00</div><div>-33.56</div><div>305.63</div></div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04087173 Theoretischer Fußpunkt = 98.099 m</div> <div>Einbindetiefe tg = 4.45 m Profillänge = 10.60 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 200.58 kN/m G',k = 0.00 kN/m Pv,k = 45.50 kN/m Eav,k = 70.62 kN/m (Eah,k = 400.76 kN/m) Bv,k = 61.22 Summe V,k = 255.48 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.98 bis 95.46 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 102.45 0.00 S2: Auelehm 102.45 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 239.25 / 1.40 = 170.89 kN/m Rd = Rb,d + Rs1,d = 1035.94 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 240.70 - 0.00 + 82.28 + 54.60 = 377.58 kN/m ==> µ = V,d / Rd = 377.58 / 1035.94 = 0.36</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div> <tr><td colspan="2">Schnitt: Anlage I2 Schnitt 9R</td><td>Seite Anlage I2/30</td></tr> <tr><td colspan="2">Kapitel: 5 LF 3 (BS-T, mit Lasten)</td><td>Archiv Nr. 12/30</td></tr> <tr><td colspan="2">Vorgang: Genehmigungstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/30	Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 12/30	Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/30									
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 12/30									
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025									

Statisch geprüf

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 15_BS 9_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.70 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 5.00 0.00 108.70 108.70 108.69 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(links) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.10 0.00 0.00 0.00 45.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/31
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2131
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 257.113 / 307.852 = 0.835$</div> <div>Bettungslager $B_{h,d} = 257.113 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 307.852 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge $N_{d'}$ $N(g+q+w)_k$ $N(g+w)_k$ $N_{w,k}$ EA EI $N_{d'}$</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -251.23 -194.63 -194.63 -49.62 3.900E+7 2.100E+7 -248.15 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y $w_{x,d}$ $w_{y,d}$ $N_{d'}$ $Q_{d'}$ $M_{d'}$</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-7.47 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-7.47 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-6.64 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-5.81 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-4.98 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-4.15 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-3.32 103.72 -7.9 0.0 -251.87 0.00 0.00</div> <div>-2.49 103.72 -7.9 0.1 -251.87 0.00 0.00</div> <div>-1.66 103.72 -7.9 0.1 -251.87 0.00 0.00</div> <div>-0.83 103.72 -8.0 0.1 -251.87 0.00 0.00</div> <div>0.00 103.72 -8.0 0.1 -251.87 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0062</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.25 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.45 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.25 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.45 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.700 108.694 0.000 1.992 0.00 0.00</div> <div>108.694 107.700 1.992 9.352 0.00 0.00</div> <div>107.700 107.450 9.352 11.203 0.00 0.00</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/32
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr. 2132
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



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<table><tr><td>107.450</td><td>106.700</td><td>11.203</td><td>16.756</td><td>0.00</td><td>0.00</td></tr><tr><td>106.700</td><td>105.650</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>24.530</td><td>25.641</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>25.641</td><td>26.615</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>104.650</td><td>32.527</td><td>35.080</td><td>2.50</td><td>8.50</td></tr><tr><td>104.650</td><td>103.720</td><td>35.080</td><td>39.037</td><td>8.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.650</td><td>39.037</td><td>39.335</td><td>17.80</td><td>18.50</td></tr><tr><td>103.650</td><td>102.650</td><td>39.335</td><td>43.590</td><td>18.50</td><td>28.50</td></tr><tr><td>102.650</td><td>102.550</td><td>43.590</td><td>44.015</td><td>28.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.450</td><td>44.015</td><td>44.441</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.100</td><td>32.848</td><td>34.284</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.700</td><td>34.284</td><td>35.925</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>35.925</td><td>40.028</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.699</td><td>40.028</td><td>44.131</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>98.699</td><td>44.131</td><td>48.234</td><td>0.00</td><td>0.00</td></tr><tr><td>98.699</td><td>98.099</td><td>48.234</td><td>50.695</td><td>0.00</td><td>0.00</td></tr><tr><td>98.099</td><td>80.000</td><td>50.695</td><td>124.929</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.70</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.65</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-12.42</td><td>-13.90</td></tr><tr><td>102.45</td><td>102.10</td><td>-14.24</td><td>-28.06</td></tr><tr><td>102.10</td><td>101.70</td><td>-28.06</td><td>-43.85</td></tr><tr><td>101.70</td><td>100.70</td><td>-43.85</td><td>-83.33</td></tr><tr><td>100.70</td><td>99.70</td><td>-83.33</td><td>-122.81</td></tr><tr><td>99.70</td><td>98.70</td><td>-122.81</td><td>-162.28</td></tr><tr><td>98.70</td><td>98.10</td><td>-162.28</td><td>-185.97</td></tr><tr><td>98.10</td><td>80.00</td><td>-185.97</td><td>-900.26</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.70</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-34.0</td><td>-10.5</td><td>-5.0</td><td></td></tr><tr><td>107.45</td><td>-95.4</td><td>-10.5</td><td>-44.3</td><td></td></tr><tr><td>106.70</td><td>-118.4</td><td>-23.8</td><td>-56.8</td><td></td></tr><tr><td>105.65</td><td>-153.8</td><td>-51.5</td><td>-95.4</td><td></td></tr><tr><td>105.50</td><td>-159.1</td><td>-56.3</td><td>-103.5</td><td></td></tr><tr><td>105.25</td><td>-168.2</td><td>-65.0</td><td>-118.7</td><td></td></tr><tr><td>104.65</td><td>-189.6</td><td>-95.3</td><td>-166.4</td><td></td></tr><tr><td>103.72</td><td>-223.8</td><td>-155.8</td><td>-281.9</td><td>-251.9</td></tr><tr><td>103.72</td><td>-223.8</td><td>96.1</td><td>-281.9</td><td></td></tr><tr><td>103.65</td><td>-226.4</td><td>90.9</td><td>-275.4</td><td></td></tr><tr><td>102.65</td><td>-264.7</td><td>6.3</td><td>-225.2</td><td></td></tr><tr><td>102.55</td><td>-268.7</td><td>-3.2</td><td>-225.1</td><td></td></tr><tr><td>102.45</td><td>-271.0</td><td>-7.6</td><td>-225.7</td><td></td></tr><tr><td>102.10</td><td>-273.4</td><td>-7.3</td><td>-228.6</td><td></td></tr><tr><td>101.70</td><td>-270.7</td><td>5.6</td><td>-229.3</td><td></td></tr><tr><td>100.70</td><td>-247.2</td><td>76.7</td><td>-188.7</td><td></td></tr><tr><td>99.70</td><td>-242.2</td><td>96.2</td><td>-96.7</td><td></td></tr><tr><td>98.70</td><td>-259.0</td><td>53.3</td><td>-17.0</td><td></td></tr><tr><td>98.10</td><td>-267.3</td><td>0.0</td><td>0.0</td><td></td></tr></table>								107.450	106.700	11.203	16.756	0.00	0.00	106.700	105.650	16.756	24.530	0.00	0.00	105.650	105.500	24.530	25.641	0.00	0.00	105.500	105.250	25.641	26.615	0.00	2.50	105.250	104.650	32.527	35.080	2.50	8.50	104.650	103.720	35.080	39.037	8.50	17.80	103.720	103.650	39.037	39.335	17.80	18.50	103.650	102.650	39.335	43.590	18.50	28.50	102.650	102.550	43.590	44.015	28.50	29.50	102.550	102.450	44.015	44.441	0.00	0.00	102.450	102.100	32.848	34.284	0.00	0.00	102.100	101.700	34.284	35.925	0.00	0.00	101.700	100.699	35.925	40.028	0.00	0.00	100.699	99.699	40.028	44.131	0.00	0.00	99.699	98.699	44.131	48.234	0.00	0.00	98.699	98.099	48.234	50.695	0.00	0.00	98.099	80.000	50.695	124.929	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.70	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.65	102.55	0.00	0.00	102.55	102.45	-12.42	-13.90	102.45	102.10	-14.24	-28.06	102.10	101.70	-28.06	-43.85	101.70	100.70	-43.85	-83.33	100.70	99.70	-83.33	-122.81	99.70	98.70	-122.81	-162.28	98.70	98.10	-162.28	-185.97	98.10	80.00	-185.97	-900.26	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.70	0.0	0.0	0.0		108.69	-0.1	0.0	0.0		107.70	-26.7	-7.2	-2.8		107.45	-34.0	-10.5	-5.0		107.45	-95.4	-10.5	-44.3		106.70	-118.4	-23.8	-56.8		105.65	-153.8	-51.5	-95.4		105.50	-159.1	-56.3	-103.5		105.25	-168.2	-65.0	-118.7		104.65	-189.6	-95.3	-166.4		103.72	-223.8	-155.8	-281.9	-251.9	103.72	-223.8	96.1	-281.9		103.65	-226.4	90.9	-275.4		102.65	-264.7	6.3	-225.2		102.55	-268.7	-3.2	-225.1		102.45	-271.0	-7.6	-225.7		102.10	-273.4	-7.3	-228.6		101.70	-270.7	5.6	-229.3		100.70	-247.2	76.7	-188.7		99.70	-242.2	96.2	-96.7		98.70	-259.0	53.3	-17.0		98.10	-267.3	0.0	0.0	
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101.70	100.70	-43.85	-83.33																																																																																																																																																																																																																																																																																																																						
100.70	99.70	-83.33	-122.81																																																																																																																																																																																																																																																																																																																						
99.70	98.70	-122.81	-162.28																																																																																																																																																																																																																																																																																																																						
98.70	98.10	-162.28	-185.97																																																																																																																																																																																																																																																																																																																						
98.10	80.00	-185.97	-900.26																																																																																																																																																																																																																																																																																																																						
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107.45	-34.0	-10.5	-5.0																																																																																																																																																																																																																																																																																																																						
107.45	-95.4	-10.5	-44.3																																																																																																																																																																																																																																																																																																																						
106.70	-118.4	-23.8	-56.8																																																																																																																																																																																																																																																																																																																						
105.65	-153.8	-51.5	-95.4																																																																																																																																																																																																																																																																																																																						
105.50	-159.1	-56.3	-103.5																																																																																																																																																																																																																																																																																																																						
105.25	-168.2	-65.0	-118.7																																																																																																																																																																																																																																																																																																																						
104.65	-189.6	-95.3	-166.4																																																																																																																																																																																																																																																																																																																						
103.72	-223.8	-155.8	-281.9	-251.9																																																																																																																																																																																																																																																																																																																					
103.72	-223.8	96.1	-281.9																																																																																																																																																																																																																																																																																																																						
103.65	-226.4	90.9	-275.4																																																																																																																																																																																																																																																																																																																						
102.65	-264.7	6.3	-225.2																																																																																																																																																																																																																																																																																																																						
102.55	-268.7	-3.2	-225.1																																																																																																																																																																																																																																																																																																																						
102.45	-271.0	-7.6	-225.7																																																																																																																																																																																																																																																																																																																						
102.10	-273.4	-7.3	-228.6																																																																																																																																																																																																																																																																																																																						
101.70	-270.7	5.6	-229.3																																																																																																																																																																																																																																																																																																																						
100.70	-247.2	76.7	-188.7																																																																																																																																																																																																																																																																																																																						
99.70	-242.2	96.2	-96.7																																																																																																																																																																																																																																																																																																																						
98.70	-259.0	53.3	-17.0																																																																																																																																																																																																																																																																																																																						
98.10	-267.3	0.0	0.0																																																																																																																																																																																																																																																																																																																						
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																							
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<div><div>Schnittgrößen 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(g+w,k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>107.70</td><td>-21.0</td><td>-5.6</td><td>-2.2</td><td></td><td></td></tr><tr><td>107.45</td><td>-26.6</td><td>-8.2</td><td>-3.9</td><td></td><td></td></tr><tr><td>107.45</td><td>-72.1</td><td>-8.2</td><td>-33.0</td><td></td><td></td></tr><tr><td>106.70</td><td>-90.2</td><td>-18.7</td><td>-42.9</td><td></td><td></td></tr><tr><td>105.65</td><td>-117.9</td><td>-40.4</td><td>-73.1</td><td></td><td></td></tr><tr><td>105.50</td><td>-122.1</td><td>-44.1</td><td>-79.5</td><td></td><td></td></tr><tr><td>105.25</td><td>-129.2</td><td>-51.0</td><td>-91.4</td><td></td><td></td></tr><tr><td>104.65</td><td>-146.0</td><td>-74.6</td><td>-128.8</td><td></td><td></td></tr><tr><td>103.72</td><td>-172.9</td><td>-121.3</td><td>-218.9</td><td>-194.6</td><td></td></tr><tr><td>103.72</td><td>-172.9</td><td>73.4</td><td>-218.9</td><td></td><td></td></tr><tr><td>103.65</td><td>-174.9</td><td>69.4</td><td>-213.9</td><td></td><td></td></tr><tr><td>102.65</td><td>-205.0</td><td>4.4</td><td>-175.8</td><td></td><td></td></tr><tr><td>102.55</td><td>-208.0</td><td>-2.9</td><td>-175.7</td><td></td><td></td></tr><tr><td>102.45</td><td>-210.1</td><td>-6.3</td><td>-176.2</td><td></td><td></td></tr><tr><td>102.10</td><td>-211.9</td><td>-6.1</td><td>-178.6</td><td></td><td></td></tr><tr><td>101.70</td><td>-209.9</td><td>4.1</td><td>-179.4</td><td></td><td></td></tr><tr><td>100.70</td><td>-191.5</td><td>59.9</td><td>-147.8</td><td></td><td></td></tr><tr><td>99.70</td><td>-187.6</td><td>75.3</td><td>-75.8</td><td></td><td></td></tr><tr><td>98.70</td><td>-200.8</td><td>41.8</td><td>-13.3</td><td></td><td></td></tr><tr><td>98.10</td><td>-207.4</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table><div><div>Schnittgrößen 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98.10	-207.4	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																								
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108.69	-0.1	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																								
107.70	-21.0	-5.6	-2.2																																																																																																																																																																																																																																																																																																																																																																																																								
107.45	-26.6	-8.2	-3.9																																																																																																																																																																																																																																																																																																																																																																																																								
107.45	-72.1	-8.2	-33.0																																																																																																																																																																																																																																																																																																																																																																																																								
106.70	-90.2	-18.7	-42.9																																																																																																																																																																																																																																																																																																																																																																																																								
105.65	-117.9	-40.4	-73.1																																																																																																																																																																																																																																																																																																																																																																																																								
105.50	-122.1	-44.1	-79.5																																																																																																																																																																																																																																																																																																																																																																																																								
105.25	-129.2	-51.0	-91.4																																																																																																																																																																																																																																																																																																																																																																																																								
104.65	-146.0	-74.6	-128.8																																																																																																																																																																																																																																																																																																																																																																																																								
103.72	-172.9	-121.3	-218.9	-194.6																																																																																																																																																																																																																																																																																																																																																																																																							
103.72	-172.9	73.4	-218.9																																																																																																																																																																																																																																																																																																																																																																																																								
103.65	-174.9	69.4	-213.9																																																																																																																																																																																																																																																																																																																																																																																																								
102.65	-205.0	4.4	-175.8																																																																																																																																																																																																																																																																																																																																																																																																								
102.55	-208.0	-2.9	-175.7																																																																																																																																																																																																																																																																																																																																																																																																								
102.45	-210.1	-6.3	-176.2																																																																																																																																																																																																																																																																																																																																																																																																								
102.10	-211.9	-6.1	-178.6																																																																																																																																																																																																																																																																																																																																																																																																								
101.70	-209.9	4.1	-179.4																																																																																																																																																																																																																																																																																																																																																																																																								
100.70	-191.5	59.9	-147.8																																																																																																																																																																																																																																																																																																																																																																																																								
99.70	-187.6	75.3	-75.8																																																																																																																																																																																																																																																																																																																																																																																																								
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>101.700.00.00.0.0</div><div>100.700.000.00.0.0</div><div>99.700.000.00.0.0</div><div>98.700.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>108.70-18.3-- --</div><div>108.70-18.3-- --</div><div>108.70-18.3-- --</div><div>108.69-18.3-- --</div><div>108.69-18.3-- --</div><div>108.64-18.2-- --</div><div>107.75-15.9-- --</div><div>107.70-15.8-- --</div><div>107.70-15.8-- --</div><div>107.65-15.6-- --</div><div>107.50-15.3-- --</div><div>107.45-15.1-- --</div><div>107.45-15.1-- --</div><div>107.40-15.0-- --</div><div>106.75-13.3-- --</div><div>106.70-13.2-- --</div><div>106.70-13.2-- --</div><div>106.65-13.1-- --</div><div>105.70-10.7-- --</div><div>105.65-10.6-- --</div><div>105.65-10.6-- --</div><div>105.60-10.5-- --</div><div>105.55-10.3-- --</div><div>105.50-10.2-- --</div><div>105.50-10.2-- --</div><div>105.45-10.1-- --</div><div>105.30-9.7-- --</div><div>105.25-9.6-- --</div><div>105.25-9.6-- --</div><div>105.20-9.5-- --</div><div>104.70-8.3-- --</div><div>104.65-8.2-- --</div><div>104.65-8.2-- --</div><div>104.60-8.1-- --</div><div>103.77-6.3-- --</div><div>103.72-6.2-- --</div><div>103.72-6.2-- --</div><div>103.70-6.2-- --</div><div>103.70-6.2-- --</div><div>103.65-6.1-- --</div><div>103.65-6.1-- --</div><div>103.60-6.0-- --</div><div>102.70-4.4-- --</div><div>102.65-4.3-- --</div><div>102.65-4.3-- --</div><div>102.60-4.2-- --</div><div>102.60-4.2-- --</div><div>102.55-4.10.000.000.00</div><div>102.55-4.10.000.0021.74</div><div>102.50-4.10.000.0023.03</div><div>102.50-4.15.0020.2723.03</div><div>102.45-4.05.0019.8724.32</div><div>102.45-4.05.0019.8724.92</div><div>102.40-3.95.0019.4728.38</div><div>102.15-3.513.0145.6545.65</div><div>102.10-3.413.0144.6849.10</div><div>102.10-3.414.3049.1149.10</div><div>102.05-3.414.3048.0552.56</div><div>101.75-2.924.9873.2973.28</div><div>101.70-2.924.9871.5876.74</div><div>101.70-2.926.7876.7476.74</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage I2 Schnitt 9R</td><td colspan="2">Seite Anlage I2/35</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">6 LF 4 (BS-P, mit Lasten)</td><td colspan="2">Archiv Nr.: 2135</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/35		Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2135		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/35																			
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2135																			
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

101.65	-2.8	26.78	74.93	80.19
100.75	-1.7	50.00	85.21	142.37
100.70	-1.6	50.00	82.50	145.82
100.70	-1.6	50.00	82.50	145.82
100.65	-1.6	50.00	79.82	149.28
99.75	-0.7	50.00	36.20	211.46
99.70	-0.7	50.00	33.98	214.91
99.70	-0.7	50.00	33.98	214.91
99.65	-0.6	50.00	31.78	218.36
98.75	0.1	50.00	-5.99	280.54
98.70	0.2	50.00	-8.02	284.00
98.70	0.2	50.00	-8.02	284.00
98.65	0.2	50.00	-10.05	287.45
98.15	0.6	50.00	-30.30	321.99
98.10	0.6	50.00	-32.33	325.45

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.04633438$
 Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
 Profillänge = 10.60 m

Nachweis Summe V
 Nachweis des mobilisierten Erdwiderstands
 Bedingung: $P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$
 $G_{k} = 200.58$ kN/m
 $G'_{k} = 0.00$ kN/m
 $P_{v,k} = 45.50$ kN/m
 $E_{av,k} = 59.79$ kN/m ($E_{ah,k} = 340.18$ kN/m)
 $B_{v,k} = 80.15$
 Summe $V_{k} = 225.72$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
 (Erfahrungswerte nach EA Pfähle)
 Verfahren 2: EAU Bild E 4-3 (rechts)
 Bohrpfahlwand $D = 0.88$ m
 Verhältniswert (min, max) = 0.00
 Spitzendruck $q_{c,m} = 7.50$ MN/m²
 (gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	102.45	0.00	S2: Auelehm
102.45	98.10	55.00	s3: Flussskies, -sand

 Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 239.25 / 1.40 = 170.89$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1035.94$ kN/m

Einwirkungen
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 270.79 - 0.00 + 76.24 + 61.43 = 408.45$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 408.45 / 1035.94 = 0.39$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage I2	Schnitt 9R	Seite Anlage I2/36
Kapitel: 6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																														
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																														
<div><div>7</div><div>LF 5 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 16_BS 9_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 108.70 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (rechts) = 105.50 mNHN Grundwasserstand (links) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Lasten (einseitig begrenzt)</p> <table><tr><th>Nr.</th><th>sigma</th><th>x(links)</th><th>Tiefe</th><th>y(oben)</th><th>y(unten)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>10.00</td><td>0.00</td><td>108.70</td><td>108.70</td><td>108.69</td><td>nein</td></tr></table> <p>Passivseite</p> <p>Lasten (einseitig begrenzt)</p> <table><tr><th>Nr.</th><th>sigma</th><th>x(links)</th><th>Tiefe</th><th>y(oben)</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>1</td><td>3.30</td><td>0.00</td><td>102.55</td><td>102.55</td></tr></table> <p>Zusatzdrücke</p> <table><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td>Wasserdruck</td></tr></table> <p>Kraftränder</p> <p>Momente (im Uhrzeigersinn positiv) Horizontalkräfte (nach rechts positiv) Vertikalkräfte (nach unten positiv)</p> <table><tr><th>Nr.</th><th>Tiefe</th><th>M,g,k</th><th>M,q,k</th><th>H,g,k</th><th>H,q,k</th><th>V,g,k</th><th>V,q,k</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN·m/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>107.45</td><td>-29.10</td><td>0.00</td><td>0.00</td><td>0.00</td><td>45.50</td><td>0.00</td></tr></table> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.60 m</p>			Nr.	sigma	x(links)	Tiefe	y(oben)	y(unten)	Verkehrslast	[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]	1	10.00	0.00	108.70	108.70	108.69	nein	Nr.	sigma	x(links)	Tiefe	y(oben)	[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	1	3.30	0.00	102.55	102.55	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	29.50	105.50	102.55	Wasserdruck	Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	107.45	-29.10	0.00	0.00	0.00	45.50	0.00
Nr.	sigma	x(links)	Tiefe	y(oben)	y(unten)	Verkehrslast																																																																										
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1	3.30	0.00	102.55	102.55																																																																												
Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ																																																																											
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]																																																																											
1	0.00	29.50	105.50	102.55	Wasserdruck																																																																											
Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k																																																																									
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]																																																																									
1	107.45	-29.10	0.00	0.00	0.00	45.50	0.00																																																																									
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/37																																																																														
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr. 2137																																																																														
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																														

Statisch geprüft

21.06.2024

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 231.339 / 331.533 = 0.698$</div> <div>Bettungslager $B_{h,d} = 231.339 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 331.533 \text{ kN/m}$</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge $N_{d'}$ $N(g+q+w)_k$ $N(g+w)_k$ $N_{w,k}$ EA EI $N_{d'}$</div> <div>[-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m]</div> <div>1 103.72 0.00 8.30 -250.12 -215.71 -215.71 -49.63 3.900E+7 2.100E+7 -275.03 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max $M_{d'}$ [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y $w_{x,d}$ $w_{y,d}$ $N_{d'}$ $Q_{d'}$ $M_{d'}$</div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -7.1 0.0 -250.55 0.00 0.00</div> <div>-7.47 103.72 -7.1 0.0 -250.55 0.00 0.00</div> <div>-7.47 103.72 -7.1 0.0 -250.55 0.00 0.00</div> <div>-6.64 103.72 -7.1 0.0 -250.55 0.00 0.00</div> <div>-5.81 103.72 -7.1 0.0 -250.55 0.00 0.00</div> <div>-4.98 103.72 -7.2 0.0 -250.55 0.00 0.00</div> <div>-4.15 103.72 -7.2 0.0 -250.55 0.00 0.00</div> <div>-3.32 103.72 -7.2 0.0 -250.55 0.00 0.00</div> <div>-2.49 103.72 -7.2 0.1 -250.55 0.00 0.00</div> <div>-1.66 103.72 -7.2 0.1 -250.55 0.00 0.00</div> <div>-0.83 103.72 -7.2 0.1 -250.55 0.00 0.00</div> <div>0.00 103.72 -7.2 0.1 -250.55 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0062</div> <div>Bodenkennwerte</div> <div>Schicht UK $\gamma_{m,k}$ $\gamma_{m',k}$ $\phi_{i,k}$ $c(pas)_k$ $c(akt)_k$ $d(p)/\phi_i$ $d(a)/\phi_i$ q_c $c_{u,k}$</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.25 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.45 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK k_{agh} k_{ach} $\phi_{i,k}$ δ θ $k_{agh}(40^\circ)$</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.25 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.45 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q]_k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>108.700 108.694 0.000 3.941 0.00 0.00</div> <div>108.694 107.700 3.941 11.301 0.00 0.00</div> <div>107.700 107.450 11.301 13.152 0.00 0.00</div>		
Schnitt: Anlage I2 Schnitt 9R		Seite Anlage I2/9R
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr. 2138
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
107.450	106.700	13.152	18.705	0.00	0.00
106.700	105.650	18.705	26.479	0.00	0.00
105.650	105.500	26.479	27.589	0.00	0.00
105.500	105.250	27.589	28.564	0.00	2.50
105.250	104.650	35.030	37.583	2.50	8.50
104.650	103.720	37.583	41.540	8.50	17.80
103.720	103.650	41.540	41.838	17.80	18.50
103.650	102.650	41.838	46.093	18.50	28.50
102.650	102.550	46.093	46.518	28.50	29.50
102.550	102.450	46.518	46.944	0.00	0.00
102.450	102.100	34.632	36.068	0.00	0.00
102.100	101.700	36.068	37.709	0.00	0.00
101.700	100.699	37.709	41.811	0.00	0.00
100.699	99.699	41.811	45.914	0.00	0.00
99.699	98.699	45.914	50.017	0.00	0.00
98.699	98.099	50.017	52.479	0.00	0.00
98.099	80.000	52.479	126.712	0.00	0.00
Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 108.70 102.55					
Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgH kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 2 102.45 3.034 3.911 22.500 -15.01 23.23 3 80.00 6.006 6.054 32.500 -21.68 16.35					
Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.65 102.55 0.00 0.00 102.55 102.45 -13.38 -14.97 102.45 102.10 -15.34 -30.22 102.10 101.70 -30.22 -47.22 101.70 100.70 -47.22 -89.74 100.70 99.70 -89.74 -132.25 99.70 98.70 -132.25 -174.77 98.70 98.10 -174.77 -200.28 98.10 80.00 -200.28 -969.51					
Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 108.70 0.0 0.0 0.0 108.69 -0.1 0.0 0.0 107.70 -24.9 -8.7 -3.6 107.45 -31.7 -12.2 -6.2 107.45 -86.3 -12.2 -41.2 106.70 -107.6 -26.0 -55.2 105.65 -140.4 -53.3 -96.0 105.50 -145.3 -57.9 -104.3 105.25 -153.7 -66.4 -119.8 104.65 -173.5 -95.4 -168.0 103.72 -205.1 -152.4 -282.1 -250.6 103.72 -205.1 98.2 -282.1 103.65 -207.5 93.3 -275.4 102.65 -242.8 14.5 -220.1 102.55 -246.4 5.7 -219.0 102.45 -248.5 1.5 -218.7 102.10 -250.7 1.0 -218.6 101.70 -248.3 11.9 -216.4 100.70 -227.3 73.4 -174.1 99.70 -223.0 88.4 -88.2 98.70 -238.1 48.4 -15.4 98.10 -246.0 0.0 0.0					
Schnitt: Anlage I2 Schnitt 9R				Seite Anlage I2/39	
Kapitel: 7 LF 5 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025		



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																							
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<div><div><div>Schnittgrößen ([g+q+w],k)</div><table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th><th></th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th></th></tr></thead><tbody><tr><td>108.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.69</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>107.70</td><td>-21.7</td><td>-7.6</td><td>-3.2</td><td></td><td></td></tr><tr><td>107.45</td><td>-27.5</td><td>-10.6</td><td>-5.4</td><td></td><td></td></tr><tr><td>107.45</td><td>-73.0</td><td>-10.6</td><td>-34.5</td><td></td><td></td></tr><tr><td>106.70</td><td>-91.6</td><td>-22.6</td><td>-46.7</td><td></td><td></td></tr><tr><td>105.65</td><td>-120.1</td><td>-46.3</td><td>-82.2</td><td></td><td></td></tr><tr><td>105.50</td><td>-124.4</td><td>-50.4</td><td>-89.4</td><td></td><td></td></tr><tr><td>105.25</td><td>-131.7</td><td>-57.7</td><td>-102.9</td><td></td><td></td></tr><tr><td>104.65</td><td>-148.9</td><td>-82.8</td><td>-144.8</td><td></td><td></td></tr><tr><td>103.72</td><td>-176.3</td><td>-131.8</td><td>-243.6</td><td>-215.7</td><td></td></tr><tr><td>103.72</td><td>-176.3</td><td>83.9</td><td>-243.6</td><td></td><td></td></tr><tr><td>103.65</td><td>-178.4</td><td>79.7</td><td>-237.9</td><td></td><td></td></tr><tr><td>102.65</td><td>-209.2</td><td>12.3</td><td>-190.7</td><td></td><td></td></tr><tr><td>102.55</td><td>-212.3</td><td>4.7</td><td>-189.9</td><td></td><td></td></tr><tr><td>102.45</td><td>-214.4</td><td>1.1</td><td>-189.6</td><td></td><td></td></tr><tr><td>102.10</td><td>-216.2</td><td>0.6</td><td>-189.6</td><td></td><td></td></tr><tr><td>101.70</td><td>-214.2</td><td>10.1</td><td>-187.8</td><td></td><td></td></tr><tr><td>100.70</td><td>-196.0</td><td>63.6</td><td>-151.2</td><td></td><td></td></tr><tr><td>99.70</td><td>-192.2</td><td>76.8</td><td>-76.6</td><td></td><td></td></tr><tr><td>98.70</td><td>-205.4</td><td>42.1</td><td>-13.4</td><td></td><td></td></tr><tr><td>98.10</td><td>-212.3</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table></div><div><div>Schnittgrößen 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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>101.700.00.00.0.0</div><div>100.700.000.00.0.0</div><div>99.700.000.00.0.0</div><div>98.700.000.00.0.0</div><div>98.100.000.00.0.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>108.70-18.8-- --</div><div>108.70-18.8-- --</div><div>108.70-18.8-- --</div><div>108.69-18.8-- --</div><div>108.69-18.8-- --</div><div>108.64-18.7-- --</div><div>107.75-16.3-- --</div><div>107.70-16.2-- --</div><div>107.70-16.2-- --</div><div>107.65-16.0-- --</div><div>107.50-15.6-- --</div><div>107.45-15.5-- --</div><div>107.45-15.5-- --</div><div>107.40-15.3-- --</div><div>106.75-13.6-- --</div><div>106.70-13.5-- --</div><div>106.70-13.5-- --</div><div>106.65-13.3-- --</div><div>105.70-10.9-- --</div><div>105.65-10.7-- --</div><div>105.65-10.7-- --</div><div>105.60-10.6-- --</div><div>105.55-10.5-- --</div><div>105.50-10.4-- --</div><div>105.50-10.4-- --</div><div>105.45-10.2-- --</div><div>105.30-9.9-- --</div><div>105.25-9.7-- --</div><div>105.25-9.7-- --</div><div>105.20-9.6-- --</div><div>104.70-8.4-- --</div><div>104.65-8.3-- --</div><div>104.65-8.3-- --</div><div>104.60-8.2-- --</div><div>103.77-6.3-- --</div><div>103.72-6.2-- --</div><div>103.72-6.2-- --</div><div>103.70-6.2-- --</div><div>103.70-6.2-- --</div><div>103.65-6.1-- --</div><div>103.65-6.1-- --</div><div>103.60-6.0-- --</div><div>102.70-4.4-- --</div><div>102.65-4.3-- --</div><div>102.65-4.3-- --</div><div>102.60-4.2-- --</div><div>102.60-4.2-- --</div><div>102.55-4.10.000.000.00</div><div>102.55-4.10.000.0021.74</div><div>102.50-4.00.000.0023.03</div><div>102.50-4.05.0020.1323.03</div><div>102.45-3.95.0019.7224.32</div><div>102.45-3.95.0019.7224.92</div><div>102.40-3.95.0019.3328.38</div><div>102.15-3.513.1245.6545.65</div><div>102.10-3.413.1244.6749.10</div><div>102.10-3.414.4249.1149.10</div><div>102.05-3.314.4248.0452.56</div><div>101.75-2.925.2373.2973.28</div><div>101.70-2.825.2371.5776.74</div><div>101.70-2.827.0576.7476.74</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage I2 Schnitt 9R</td><td colspan="2">Seite Anlage I2/41</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">7 LF 5 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.: 2141</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/41		Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2141		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage I2 Schnitt 9R		Seite Anlage I2/41																			
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2141																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

101.65	-2.8	27.05	74.92	80.19
100.75	-1.7	50.00	84.33	142.37
100.70	-1.6	50.00	81.66	145.82
100.70	-1.6	50.00	81.66	145.82
100.65	-1.6	50.00	79.02	149.28
99.75	-0.7	50.00	36.21	211.46
99.70	-0.7	50.00	34.04	214.91
99.70	-0.7	50.00	34.04	214.91
99.65	-0.6	50.00	31.88	218.36
98.75	0.1	50.00	-5.00	280.54
98.70	0.1	50.00	-6.99	284.00
98.70	0.1	50.00	-6.99	284.00
98.65	0.2	50.00	-8.97	287.45
98.15	0.6	50.00	-28.73	321.99
98.10	0.6	50.00	-30.70	325.45

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.04519964$
Theoretischer Fußpunkt = 98.099 m

Einbindetiefe $t_g = 4.45$ m
Profillänge = 10.60 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$
 $G_{k} = 200.58$ kN/m
 $G'_{k} = 0.00$ kN/m
 $P_{v,k} = 45.50$ kN/m
 $E_{av,k} = 63.50$ kN/m ($E_{ah,k} = 361.66$ kN/m)
 $B_{v,k} = 79.93$
Summe $V_{k} = 229.65$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 98.98 bis 95.46 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	102.45	0.00	S2: Auelehm
102.45	98.10	55.00	s3: Flussskies, -sand

Mantelfläche bis 98.10 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 239.25 / 1.40 = 170.89$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1035.94$ kN/m

Einwirkungen
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 240.70 - 0.00 + 73.02 + 54.60 = 368.32$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 368.32 / 1035.94 = 0.36$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage I2	Schnitt 9R	Seite Anlage I2/42
Kapitel: 7	LF 5 (BS-T, mit Lasten)	Archiv Nr.: 2142
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Anlage J2 Schnitt 1L</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 10_BS 1_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.00 1.35 1.35 0.00 0.00 0.74 0.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 106.00 103.94 10.000 10.000 103.94 102.84 5.000 5.000 102.84 80.00 50.000 50.000</div> <div>Ausnutzungsgrad mue = 371.969 / 1195.926 = 0.311 Bettungslager Bh,d = 371.969 kN/m Erdwiderstand Eph,d = 1195.926 kN/m</div>		
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/1
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

Ing. für Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																															
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.707</td><td>0.000</td><td>15.498</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>15.499</td><td>17.769</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>106.000</td><td>17.769</td><td>20.731</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>20.731</td><td>24.433</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>24.433</td><td>24.628</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>24.628</td><td>26.381</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.445</td><td>26.381</td><td>28.545</td><td>5.00</td><td>5.00</td></tr><tr><td>104.445</td><td>103.940</td><td>28.545</td><td>30.512</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.440</td><td>37.533</td><td>39.660</td><td>5.00</td><td>5.00</td></tr><tr><td>103.440</td><td>102.840</td><td>39.660</td><td>42.213</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.441</td><td>31.261</td><td>32.898</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.092</td><td>32.898</td><td>34.331</td><td>5.00</td><td>5.00</td></tr><tr><td>102.092</td><td>101.443</td><td>34.331</td><td>36.992</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>36.992</td><td>41.085</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.447</td><td>41.085</td><td>45.178</td><td>5.00</td><td>5.00</td></tr><tr><td>99.447</td><td>98.549</td><td>45.178</td><td>48.862</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>48.862</td><td>124.941</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>103.94</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.84</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.40</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.00</td><td>-32.19</td><td>-58.52</td></tr><tr><td>105.00</td><td>104.44</td><td>-58.52</td><td>-75.62</td></tr><tr><td>104.44</td><td>103.94</td><td>-75.62</td><td>-91.17</td></tr><tr><td>103.94</td><td>103.44</td><td>-62.48</td><td>-70.41</td></tr><tr><td>103.44</td><td>102.84</td><td>-70.41</td><td>-79.93</td></tr><tr><td>102.84</td><td>102.44</td><td>-143.95</td><td>-160.92</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.707	0.000	15.498	0.00	0.00	106.707	106.400	15.499	17.769	0.00	0.00	106.400	106.000	17.769	20.731	0.00	0.00	106.000	105.500	20.731	24.433	0.00	0.00	105.500	105.450	24.433	24.628	0.00	0.50	105.450	105.000	24.628	26.381	0.50	5.00	105.000	104.445	26.381	28.545	5.00	5.00	104.445	103.940	28.545	30.512	5.00	5.00	103.940	103.440	37.533	39.660	5.00	5.00	103.440	102.840	39.660	42.213	5.00	5.00	102.840	102.441	31.261	32.898	5.00	5.00	102.441	102.092	32.898	34.331	5.00	5.00	102.092	101.443	34.331	36.992	5.00	5.00	101.443	100.445	36.992	41.085	5.00	5.00	100.445	99.447	41.085	45.178	5.00	5.00	99.447	98.549	45.178	48.862	5.00	5.00	98.549	80.000	48.862	124.941	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	103.94	5.005	5.388	30.000	-20.01	18.10	2	102.84	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.40	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.00	-32.19	-58.52	105.00	104.44	-58.52	-75.62	104.44	103.94	-75.62	-91.17	103.94	103.44	-62.48	-70.41	103.44	102.84	-70.41	-79.93	102.84	102.44	-143.95	-160.92	<div>Schnitt: Anlage J2 Schnitt 1L</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage J2/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																							
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3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																							
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103.940	103.440	37.533	39.660	5.00	5.00																																																																																																																																																																																																																																																																																																												
103.440	102.840	39.660	42.213	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.840	102.441	31.261	32.898	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.441	102.092	32.898	34.331	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.092	101.443	34.331	36.992	5.00	5.00																																																																																																																																																																																																																																																																																																												
101.443	100.445	36.992	41.085	5.00	5.00																																																																																																																																																																																																																																																																																																												
100.445	99.447	41.085	45.178	5.00	5.00																																																																																																																																																																																																																																																																																																												
99.447	98.549	45.178	48.862	5.00	5.00																																																																																																																																																																																																																																																																																																												
98.549	80.000	48.862	124.941	5.00	5.00																																																																																																																																																																																																																																																																																																												
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106.40	106.00	0.00	0.00																																																																																																																																																																																																																																																																																																														
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.44 102.09 -160.92 -175.77</div><div>102.09 101.44 -175.77 -203.34</div><div>101.44 100.44 -203.34 -245.75</div><div>100.44 99.45 -245.75 -288.17</div><div>99.45 98.55 -288.17 -326.34</div><div>98.55 80.00 -326.34 -1114.70</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.71 -18.6 -6.6 -1.6</div><div>106.40 -27.4 -12.5 -4.6</div><div>106.00 -39.3 -21.3 -11.3</div><div>105.50 -46.1 -22.0 -23.2</div><div>105.45 -46.3 -21.0 -24.2</div><div>105.00 -48.4 -14.4 -32.0</div><div>104.44 -51.9 -11.8 -39.1</div><div>103.94 -56.1 -13.1 -45.2</div><div>103.44 -64.8 -30.1 -55.9</div><div>102.84 -75.6 -53.5 -80.8</div><div>102.44 -65.3 -22.7 -95.8</div><div>102.09 -58.2 -1.2 -99.9</div><div>101.44 -49.3 26.5 -90.9</div><div>100.44 -44.7 42.3 -54.1</div><div>99.45 -48.9 31.0 -15.4</div><div>98.55 -59.4 0.0 0.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.71 -16.2 -5.8 -1.4</div><div>106.40 -23.8 -10.9 -4.0</div><div>106.00 -34.2 -18.6 -9.8</div><div>105.50 -40.1 -19.2 -20.1</div><div>105.45 -40.3 -18.3 -21.1</div><div>105.00 -42.1 -12.6 -27.9</div><div>104.44 -45.2 -10.2 -34.0</div><div>103.94 -48.8 -11.4 -39.3</div><div>103.44 -56.4 -26.1 -48.6</div><div>102.84 -65.8 -46.3 -70.2</div><div>102.44 -56.8 -19.6 -83.2</div><div>102.09 -50.7 -1.0 -86.7</div><div>101.44 -42.9 23.0 -78.8</div><div>100.44 -38.9 36.7 -46.9</div><div>99.45 -42.6 26.9 -13.3</div><div>98.55 -51.7 0.0 0.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe N Q M</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div><div>107.45 0.0 0.0 0.0</div><div>106.71 -16.2 -5.8 -1.4</div><div>106.40 -23.8 -10.9 -4.0</div><div>106.00 -34.2 -18.6 -9.8</div><div>105.50 -40.1 -19.2 -20.1</div><div>105.45 -40.3 -18.3 -21.1</div><div>105.00 -42.1 -12.6 -27.9</div><div>104.44 -45.2 -10.2 -34.0</div><div>103.94 -48.8 -11.4 -39.3</div><div>103.44 -56.4 -26.1 -48.6</div><div>102.84 -65.8 -46.3 -70.2</div><div>102.44 -56.8 -19.6 -83.2</div><div>102.09 -50.7 -1.0 -86.7</div><div>101.44 -42.9 23.0 -78.8</div><div>100.44 -38.9 36.7 -46.9</div><div>99.45 -42.6 26.9 -13.3</div><div>98.55 -51.7 0.0 0.0</div></div></div><div><div>Schnittgrößen (q,k)</div></div></div>		
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 12/0
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																		
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<table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.94</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.84</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></tbody></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.76</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-4.7</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-4.4</td><td>9.79</td><td>42.79</td><td>42.79</td></tr><tr><td>105.50</td><td>-4.3</td><td>9.79</td><td>42.37</td><td>47.55</td></tr><tr><td>105.50</td><td>-4.3</td><td>10.00</td><td>43.30</td><td>47.55</td></tr><tr><td>105.45</td><td>-4.3</td><td>10.00</td><td>42.86</td><td>52.30</td></tr><tr><td>105.45</td><td>-4.3</td><td>10.00</td><td>42.86</td><td>52.30</td></tr><tr><td>105.40</td><td>-4.2</td><td>10.00</td><td>42.43</td><td>57.06</td></tr><tr><td>105.05</td><td>-3.9</td><td>10.00</td><td>39.43</td><td>90.34</td></tr><tr><td>105.00</td><td>-3.9</td><td>10.00</td><td>39.00</td><td>95.10</td></tr><tr><td>105.00</td><td>-3.9</td><td>10.00</td><td>39.00</td><td>95.10</td></tr><tr><td>104.95</td><td>-3.9</td><td>10.00</td><td>38.58</td><td>97.62</td></tr><tr><td>104.50</td><td>-3.5</td><td>10.00</td><td>34.79</td><td>120.36</td></tr><tr><td>104.44</td><td>-3.4</td><td>10.00</td><td>34.37</td><td>122.89</td></tr><tr><td>104.44</td><td>-3.4</td><td>10.00</td><td>34.37</td><td>122.89</td></tr><tr><td>104.39</td><td>-3.4</td><td>10.00</td><td>33.96</td><td>125.41</td></tr><tr><td>103.99</td><td>-3.1</td><td>10.00</td><td>30.72</td><td>145.63</td></tr><tr><td>103.94</td><td>-3.0</td><td>10.00</td><td>30.32</td><td>148.15</td></tr><tr><td>103.94</td><td>-3.0</td><td>5.00</td><td>15.16</td><td>101.53</td></tr><tr><td>103.89</td><td>-3.0</td><td>5.00</td><td>14.96</td><td>102.82</td></tr><tr><td>103.49</td><td>-2.7</td><td>5.00</td><td>13.42</td><td>113.13</td></tr><tr><td>103.44</td><td>-2.6</td><td>5.00</td><td>13.24</td><td>114.42</td></tr><tr><td>103.44</td><td>-2.6</td><td>5.00</td><td>13.24</td><td>114.42</td></tr><tr><td>103.39</td><td>-2.6</td><td>5.00</td><td>13.05</td><td>115.71</td></tr><tr><td>102.89</td><td>-2.2</td><td>5.00</td><td>11.24</td><td>128.60</td></tr><tr><td>102.84</td><td>-2.2</td><td>5.00</td><td>11.07</td><td>129.89</td></tr><tr><td>102.84</td><td>-2.2</td><td>50.00</td><td>110.68</td><td>233.92</td></tr><tr><td>102.79</td><td>-2.2</td><td>50.00</td><td>108.96</td><td>237.37</td></tr><tr><td>102.49</td><td>-2.0</td><td>50.00</td><td>99.00</td><td>258.05</td></tr><tr><td>102.44</td><td>-1.9</td><td>50.00</td><td>97.39</td><td>261.49</td></tr><tr><td>102.44</td><td>-1.9</td><td>50.00</td><td>97.39</td><td>261.49</td></tr><tr><td>102.39</td><td>-1.9</td><td>50.00</td><td>95.81</td><td>264.94</td></tr><tr><td>102.14</td><td>-1.8</td><td>50.00</td><td>88.16</td><td>282.17</td></tr><tr><td>102.09</td><td>-1.7</td><td>50.00</td><td>86.68</td><td>285.62</td></tr><tr><td>102.09</td><td>-1.7</td><td>50.00</td><td>86.68</td><td>285.62</td></tr></tbody></table>						Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	0.0	0.0	0.0	106.40	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.44	0.0	0.0	0.0	103.94	0.0	0.0	0.0	103.44	0.0	0.0	0.0	102.84	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.55	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-6.1	-	-	-	107.40	-6.0	-	-	-	106.76	-5.4	-	-	-	106.71	-5.4	-	-	-	106.71	-5.4	-	-	-	106.66	-5.3	-	-	-	106.45	-5.2	-	-	-	106.40	-5.1	-	-	-	106.40	-5.1	-	-	-	106.35	-5.1	-	-	-	106.05	-4.8	-	-	-	106.00	-4.8	0.00	0.00	0.00	106.00	-4.8	0.00	0.00	0.00	105.95	-4.7	0.00	0.00	4.75	105.55	-4.4	9.79	42.79	42.79	105.50	-4.3	9.79	42.37	47.55	105.50	-4.3	10.00	43.30	47.55	105.45	-4.3	10.00	42.86	52.30	105.45	-4.3	10.00	42.86	52.30	105.40	-4.2	10.00	42.43	57.06	105.05	-3.9	10.00	39.43	90.34	105.00	-3.9	10.00	39.00	95.10	105.00	-3.9	10.00	39.00	95.10	104.95	-3.9	10.00	38.58	97.62	104.50	-3.5	10.00	34.79	120.36	104.44	-3.4	10.00	34.37	122.89	104.44	-3.4	10.00	34.37	122.89	104.39	-3.4	10.00	33.96	125.41	103.99	-3.1	10.00	30.72	145.63	103.94	-3.0	10.00	30.32	148.15	103.94	-3.0	5.00	15.16	101.53	103.89	-3.0	5.00	14.96	102.82	103.49	-2.7	5.00	13.42	113.13	103.44	-2.6	5.00	13.24	114.42	103.44	-2.6	5.00	13.24	114.42	103.39	-2.6	5.00	13.05	115.71	102.89	-2.2	5.00	11.24	128.60	102.84	-2.2	5.00	11.07	129.89	102.84	-2.2	50.00	110.68	233.92	102.79	-2.2	50.00	108.96	237.37	102.49	-2.0	50.00	99.00	258.05	102.44	-1.9	50.00	97.39	261.49	102.44	-1.9	50.00	97.39	261.49	102.39	-1.9	50.00	95.81	264.94	102.14	-1.8	50.00	88.16	282.17	102.09	-1.7	50.00	86.68	285.62	102.09	-1.7	50.00	86.68	285.62
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Statisch geprüft

12.11.24

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																											
Auftraggeber: Stadtverwaltung Leipzig		-																																																																											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																											
<table><tr><td>102.04</td><td>-1.7</td><td>50.00</td><td>85.23</td><td>289.06</td></tr><tr><td>101.49</td><td>-1.4</td><td>50.00</td><td>70.39</td><td>326.97</td></tr><tr><td>101.44</td><td>-1.4</td><td>50.00</td><td>69.15</td><td>330.42</td></tr><tr><td>101.44</td><td>-1.4</td><td>50.00</td><td>69.15</td><td>330.42</td></tr><tr><td>101.39</td><td>-1.4</td><td>50.00</td><td>67.92</td><td>333.87</td></tr><tr><td>100.49</td><td>-1.0</td><td>50.00</td><td>48.35</td><td>395.90</td></tr><tr><td>100.44</td><td>-0.9</td><td>50.00</td><td>47.38</td><td>399.35</td></tr><tr><td>100.44</td><td>-0.9</td><td>50.00</td><td>47.38</td><td>399.35</td></tr><tr><td>100.39</td><td>-0.9</td><td>50.00</td><td>46.42</td><td>402.79</td></tr><tr><td>99.50</td><td>-0.6</td><td>50.00</td><td>30.40</td><td>464.82</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.56</td><td>468.27</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.56</td><td>468.27</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>28.72</td><td>471.72</td></tr><tr><td>98.60</td><td>-0.3</td><td>50.00</td><td>15.49</td><td>526.86</td></tr><tr><td>98.55</td><td>-0.3</td><td>50.00</td><td>14.66</td><td>530.30</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.01890371 Theoretischer Fußpunkt = 98.549 m</p> <p>Einbindetiefe tg = 7.45 m Profillänge = 8.90 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k >= Bv,k G,k = 168.41 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 53.29 kN/m (Eah,k = 288.48 kN/m) Bv,k = 123.87 Summe V,k = 97.83 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 106.00 103.94 0.00 S1: Auffüllungen 103.94 102.84 0.00 S2: Auelehm 102.84 98.55 55.00 s3: Flussskies, -sand Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 235.95 / 1.40 = 168.54 kN/m R,d = Rb,d + Rs1,d = 1033.58 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 202.10 - 0.00 + 61.28 + 0.00 = 263.38 kN/m ==> µ = V,d / R,d = 263.38 / 1033.58 = 0.25</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.04	-1.7	50.00	85.23	289.06	101.49	-1.4	50.00	70.39	326.97	101.44	-1.4	50.00	69.15	330.42	101.44	-1.4	50.00	69.15	330.42	101.39	-1.4	50.00	67.92	333.87	100.49	-1.0	50.00	48.35	395.90	100.44	-0.9	50.00	47.38	399.35	100.44	-0.9	50.00	47.38	399.35	100.39	-0.9	50.00	46.42	402.79	99.50	-0.6	50.00	30.40	464.82	99.45	-0.6	50.00	29.56	468.27	99.45	-0.6	50.00	29.56	468.27	99.40	-0.6	50.00	28.72	471.72	98.60	-0.3	50.00	15.49	526.86	98.55	-0.3	50.00	14.66	530.30
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Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/5																																																																											
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 12/15g.																																																																											
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																											

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 11_BS 1_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.00 1.35 1.35 0.00 0.00 0.74 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 106.00 103.94 10.000 10.000 103.94 102.84 5.000 5.000 102.84 80.00 50.000 50.000</div> <div>Ausnutzungsgrad mue = 410.176 / 1195.926 = 0.343 Bettungslager Bh,d = 410.176 kN/m Erdwiderstand Eph,d = 1195.926 kN/m</div>		
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 12/16
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																														
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.707</td><td>0.000</td><td>19.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>19.395</td><td>21.666</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>106.000</td><td>21.666</td><td>24.628</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>24.628</td><td>28.330</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>28.330</td><td>28.525</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>28.525</td><td>30.278</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.445</td><td>30.278</td><td>32.442</td><td>5.00</td><td>5.00</td></tr><tr><td>104.445</td><td>103.940</td><td>32.442</td><td>34.409</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.440</td><td>42.539</td><td>44.666</td><td>5.00</td><td>5.00</td></tr><tr><td>103.440</td><td>102.840</td><td>44.666</td><td>47.219</td><td>5.00</td><td>5.00</td></tr><tr><td>102.840</td><td>102.441</td><td>34.828</td><td>36.465</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.092</td><td>36.465</td><td>37.898</td><td>5.00</td><td>5.00</td></tr><tr><td>102.092</td><td>101.443</td><td>37.898</td><td>40.558</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>40.558</td><td>44.652</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.447</td><td>44.652</td><td>48.745</td><td>5.00</td><td>5.00</td></tr><tr><td>99.447</td><td>98.549</td><td>48.745</td><td>52.429</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>52.429</td><td>128.508</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>103.94</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.84</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.40</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.19</td></tr><tr><td>105.45</td><td>105.00</td><td>-32.19</td><td>-58.52</td></tr><tr><td>105.00</td><td>104.44</td><td>-58.52</td><td>-75.62</td></tr><tr><td>104.44</td><td>103.94</td><td>-75.62</td><td>-91.17</td></tr><tr><td>103.94</td><td>103.44</td><td>-62.48</td><td>-70.41</td></tr><tr><td>103.44</td><td>102.84</td><td>-70.41</td><td>-79.93</td></tr><tr><td>102.84</td><td>102.44</td><td>-143.95</td><td>-160.92</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.707	0.000	19.395	0.00	0.00	106.707	106.400	19.395	21.666	0.00	0.00	106.400	106.000	21.666	24.628	0.00	0.00	106.000	105.500	24.628	28.330	0.00	0.00	105.500	105.450	28.330	28.525	0.00	0.50	105.450	105.000	28.525	30.278	0.50	5.00	105.000	104.445	30.278	32.442	5.00	5.00	104.445	103.940	32.442	34.409	5.00	5.00	103.940	103.440	42.539	44.666	5.00	5.00	103.440	102.840	44.666	47.219	5.00	5.00	102.840	102.441	34.828	36.465	5.00	5.00	102.441	102.092	36.465	37.898	5.00	5.00	102.092	101.443	37.898	40.558	5.00	5.00	101.443	100.445	40.558	44.652	5.00	5.00	100.445	99.447	44.652	48.745	5.00	5.00	99.447	98.549	48.745	52.429	5.00	5.00	98.549	80.000	52.429	128.508	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	103.94	5.005	5.388	30.000	-20.01	18.10	2	102.84	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.40	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.19	105.45	105.00	-32.19	-58.52	105.00	104.44	-58.52	-75.62	104.44	103.94	-75.62	-91.17	103.94	103.44	-62.48	-70.41	103.44	102.84	-70.41	-79.93	102.84	102.44	-143.95	-160.92	<div>Statisch geprüft</div> <div>für</div> <div>Standicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																						
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102.441	102.092	36.465	37.898	5.00	5.00																																																																																																																																																																																																																																																																																																											
102.092	101.443	37.898	40.558	5.00	5.00																																																																																																																																																																																																																																																																																																											
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																															

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.44102.09-160.92-175.77</div><div>102.09101.44-175.77-203.34</div><div>101.44100.44-203.34-245.75</div><div>100.4499.45-245.75-288.17</div><div>99.4598.55-288.17-326.34</div><div>98.5580.00-326.34-1114.70</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-19.3-8.5-2.1</div><div>106.40-28.6-15.7-5.8</div><div>106.00-41.2-26.4-14.2</div><div>105.50-48.0-29.3-29.2</div><div>105.45-48.1-28.3-30.6</div><div>105.00-48.8-19.9-41.2</div><div>104.44-50.9-15.8-50.9</div><div>103.94-53.9-16.2-58.8</div><div>103.44-62.3-34.8-71.5</div><div>102.84-72.8-60.4-99.8</div><div>102.44-59.8-24.5-116.5</div><div>102.09-50.70.6-120.5</div><div>101.44-39.032.7-108.8</div><div>100.44-31.950.7-64.3</div><div>99.45-35.536.8-18.2</div><div>98.55-46.80.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-16.8-7.4-1.8</div><div>106.40-24.9-13.7-5.1</div><div>106.00-35.8-22.9-12.3</div><div>105.50-41.8-25.5-25.4</div><div>105.45-41.9-24.6-26.6</div><div>105.00-42.5-17.4-35.9</div><div>104.44-44.3-13.7-44.3</div><div>103.94-46.9-14.1-51.2</div><div>103.44-54.2-30.1-62.1</div><div>102.84-63.3-52.3-86.7</div><div>102.44-52.0-21.1-101.1</div><div>102.09-44.10.6-104.6</div><div>101.44-33.928.4-94.4</div><div>100.44-27.844.0-55.8</div><div>99.45-30.931.9-15.8</div><div>98.55-40.80.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-16.8-7.4-1.8</div><div>106.40-24.9-13.7-5.1</div><div>106.00-35.8-22.9-12.3</div><div>105.50-41.8-25.5-25.4</div><div>105.45-41.9-24.6-26.6</div><div>105.00-42.5-17.4-35.9</div><div>104.44-44.3-13.7-44.3</div><div>103.94-46.9-14.1-51.2</div><div>103.44-54.2-30.1-62.1</div><div>102.84-63.3-52.3-86.7</div><div>102.44-52.0-21.1-101.1</div><div>102.09-44.10.6-104.6</div><div>101.44-33.928.4-94.4</div><div>100.44-27.844.0-55.8</div><div>99.45-30.931.9-15.8</div><div>98.55-40.80.00.0</div></div></div></div>		
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/8
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 12/8
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

12/8

Stand sicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																													
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<div>Schnittgrößen (q,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.94</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.84</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></tbody></table> <div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-5.2</td><td>8.29</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-5.1</td><td>8.29</td><td>42.36</td><td>47.55</td></tr><tr><td>105.50</td><td>-5.1</td><td>9.31</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-5.1</td><td>9.31</td><td>47.06</td><td>52.30</td></tr><tr><td>105.45</td><td>-5.1</td><td>10.00</td><td>50.55</td><td>52.30</td></tr><tr><td>105.40</td><td>-5.0</td><td>10.00</td><td>50.02</td><td>57.06</td></tr><tr><td>105.05</td><td>-4.6</td><td>10.00</td><td>46.35</td><td>90.34</td></tr><tr><td>105.00</td><td>-4.6</td><td>10.00</td><td>45.84</td><td>95.10</td></tr><tr><td>105.00</td><td>-4.6</td><td>10.00</td><td>45.84</td><td>95.10</td></tr><tr><td>104.95</td><td>-4.5</td><td>10.00</td><td>45.31</td><td>97.62</td></tr><tr><td>104.50</td><td>-4.1</td><td>10.00</td><td>40.70</td><td>120.36</td></tr><tr><td>104.44</td><td>-4.0</td><td>10.00</td><td>40.20</td><td>122.89</td></tr><tr><td>104.44</td><td>-4.0</td><td>10.00</td><td>40.20</td><td>122.89</td></tr><tr><td>104.39</td><td>-4.0</td><td>10.00</td><td>39.69</td><td>125.41</td></tr><tr><td>103.99</td><td>-3.6</td><td>10.00</td><td>35.75</td><td>145.63</td></tr><tr><td>103.94</td><td>-3.5</td><td>10.00</td><td>35.27</td><td>148.15</td></tr><tr><td>103.94</td><td>-3.5</td><td>5.00</td><td>17.63</td><td>101.53</td></tr><tr><td>103.89</td><td>-3.5</td><td>5.00</td><td>17.40</td><td>102.82</td></tr><tr><td>103.49</td><td>-3.1</td><td>5.00</td><td>15.53</td><td>113.13</td></tr><tr><td>103.44</td><td>-3.1</td><td>5.00</td><td>15.30</td><td>114.42</td></tr><tr><td>103.44</td><td>-3.1</td><td>5.00</td><td>15.30</td><td>114.42</td></tr><tr><td>103.39</td><td>-3.0</td><td>5.00</td><td>15.08</td><td>115.71</td></tr><tr><td>102.89</td><td>-2.6</td><td>5.00</td><td>12.90</td><td>128.60</td></tr><tr><td>102.84</td><td>-2.5</td><td>5.00</td><td>12.69</td><td>129.89</td></tr><tr><td>102.84</td><td>-2.5</td><td>50.00</td><td>126.86</td><td>233.92</td></tr><tr><td>102.79</td><td>-2.5</td><td>50.00</td><td>124.79</td><td>237.37</td></tr><tr><td>102.49</td><td>-2.3</td><td>50.00</td><td>112.79</td><td>258.05</td></tr><tr><td>102.44</td><td>-2.2</td><td>50.00</td><td>110.86</td><td>261.49</td></tr><tr><td>102.44</td><td>-2.2</td><td>50.00</td><td>110.86</td><td>261.49</td></tr><tr><td>102.39</td><td>-2.2</td><td>50.00</td><td>108.95</td><td>264.94</td></tr><tr><td>102.14</td><td>-2.0</td><td>50.00</td><td>99.74</td><td>282.17</td></tr><tr><td>102.09</td><td>-2.0</td><td>50.00</td><td>97.97</td><td>285.62</td></tr></tbody></table>						Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	0.0	0.0	0.0	106.40	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.44	0.0	0.0	0.0	103.94	0.0	0.0	0.0	103.44	0.0	0.0	0.0	102.84	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.55	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-7.2	-	-	-	107.40	-7.2	-	-	-	106.75	-6.5	-	-	-	106.71	-6.4	-	-	-	106.71	-6.4	-	-	-	106.66	-6.4	-	-	-	106.45	-6.1	-	-	-	106.40	-6.1	-	-	-	106.40	-6.1	-	-	-	106.35	-6.0	-	-	-	106.05	-5.7	-	-	-	106.00	-5.6	0.00	0.00	0.00	106.00	-5.6	0.00	0.00	0.00	105.95	-5.6	0.00	0.00	4.75	105.55	-5.2	8.29	42.80	42.79	105.50	-5.1	8.29	42.36	47.55	105.50	-5.1	9.31	47.55	47.55	105.45	-5.1	9.31	47.06	52.30	105.45	-5.1	10.00	50.55	52.30	105.40	-5.0	10.00	50.02	57.06	105.05	-4.6	10.00	46.35	90.34	105.00	-4.6	10.00	45.84	95.10	105.00	-4.6	10.00	45.84	95.10	104.95	-4.5	10.00	45.31	97.62	104.50	-4.1	10.00	40.70	120.36	104.44	-4.0	10.00	40.20	122.89	104.44	-4.0	10.00	40.20	122.89	104.39	-4.0	10.00	39.69	125.41	103.99	-3.6	10.00	35.75	145.63	103.94	-3.5	10.00	35.27	148.15	103.94	-3.5	5.00	17.63	101.53	103.89	-3.5	5.00	17.40	102.82	103.49	-3.1	5.00	15.53	113.13	103.44	-3.1	5.00	15.30	114.42	103.44	-3.1	5.00	15.30	114.42	103.39	-3.0	5.00	15.08	115.71	102.89	-2.6	5.00	12.90	128.60	102.84	-2.5	5.00	12.69	129.89	102.84	-2.5	50.00	126.86	233.92	102.79	-2.5	50.00	124.79	237.37	102.49	-2.3	50.00	112.79	258.05	102.44	-2.2	50.00	110.86	261.49	102.44	-2.2	50.00	110.86	261.49	102.39	-2.2	50.00	108.95	264.94	102.14	-2.0	50.00	99.74	282.17	102.09	-2.0	50.00	97.97	285.62
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																	
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<table><tr><td>102.09</td><td>-2.0</td><td>50.00</td><td>97.97</td><td>285.62</td></tr><tr><td>102.04</td><td>-1.9</td><td>50.00</td><td>96.21</td><td>289.06</td></tr><tr><td>101.49</td><td>-1.6</td><td>50.00</td><td>78.36</td><td>326.97</td></tr><tr><td>101.44</td><td>-1.5</td><td>50.00</td><td>76.86</td><td>330.42</td></tr><tr><td>101.44</td><td>-1.5</td><td>50.00</td><td>76.86</td><td>330.42</td></tr><tr><td>101.39</td><td>-1.5</td><td>50.00</td><td>75.39</td><td>333.87</td></tr><tr><td>100.49</td><td>-1.0</td><td>50.00</td><td>51.80</td><td>395.90</td></tr><tr><td>100.44</td><td>-1.0</td><td>50.00</td><td>50.63</td><td>399.35</td></tr><tr><td>100.44</td><td>-1.0</td><td>50.00</td><td>50.63</td><td>399.35</td></tr><tr><td>100.39</td><td>-1.0</td><td>50.00</td><td>49.47</td><td>402.79</td></tr><tr><td>99.50</td><td>-0.6</td><td>50.00</td><td>30.12</td><td>464.82</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.11</td><td>468.27</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.11</td><td>468.27</td></tr><tr><td>99.40</td><td>-0.6</td><td>50.00</td><td>28.09</td><td>471.72</td></tr><tr><td>98.60</td><td>-0.2</td><td>50.00</td><td>12.08</td><td>526.86</td></tr><tr><td>98.55</td><td>-0.2</td><td>50.00</td><td>11.08</td><td>530.30</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02287406 Theoretischer Fußpunkt = 98.549 m</p> <p>Einbindetiefe tg = 7.45 m Profillänge = 8.90 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 168.41 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 59.33 kN/m (Eah,k = 321.71 kN/m) Bv,k = 136.46 Summe V,k = 91.28 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>106.00</td><td>103.94</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>103.94</td><td>102.84</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.84</td><td>98.55</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 235.95 / 1.40 = 168.54 kN/m R,d = Rb,d + R,s1,d = 1033.58 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 202.10 - 0.00 + 68.22 + 0.00 = 270.32 kN/m ==> µ = V,d / R,d = 270.32 / 1033.58 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						102.09	-2.0	50.00	97.97	285.62	102.04	-1.9	50.00	96.21	289.06	101.49	-1.6	50.00	78.36	326.97	101.44	-1.5	50.00	76.86	330.42	101.44	-1.5	50.00	76.86	330.42	101.39	-1.5	50.00	75.39	333.87	100.49	-1.0	50.00	51.80	395.90	100.44	-1.0	50.00	50.63	399.35	100.44	-1.0	50.00	50.63	399.35	100.39	-1.0	50.00	49.47	402.79	99.50	-0.6	50.00	30.12	464.82	99.45	-0.6	50.00	29.11	468.27	99.45	-0.6	50.00	29.11	468.27	99.40	-0.6	50.00	28.09	471.72	98.60	-0.2	50.00	12.08	526.86	98.55	-0.2	50.00	11.08	530.30	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	103.94	0.00	S1: Auffüllungen	103.94	102.84	0.00	S2: Auelehm	102.84	98.55	55.00	s3: Flusskies, -sand
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Schnitt:		Anlage J2 Schnitt 1L		Seite Anlage J2/10																																																																																																	
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Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																	

Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																							
Auftraggeber: Stadtverwaltung Leipzig																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 12_BS 1_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><th>Nr.</th><th>x1</th><th>x2</th><th>dh</th><th>a</th><th>x</th><th>y</th><th>Auflast</th><th>Verkehr</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[kN/m²]</th><th>[-]</th></tr><tr><td>1</td><td>0.00</td><td>1.35</td><td>1.35</td><td>0.00</td><td>0.00</td><td>0.74</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</p> <p>Bettungsmodule</p> <table><tr><th>von</th><th>bis</th><th>ks(oben)</th><th>ks(unten)</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[MN/m³]</th><th>[MN/m³]</th></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad $\mu_e = 267.179 / 340.177 = 0.785$ Bettungslager $B_{h,d} = 267.179$ kN/m Erdwiderstand $E_{ph,d} = 340.177$ kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.00	1.35	1.35	0.00	0.00	0.74	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
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1	0.00	1.35	1.35	0.00	0.00	0.74	0.00	nein																																	
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Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 12/11																																							
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																							

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																							
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>N_d</th><th>N(g+q+w)_k</th><th>N(g+w)_k</th><th>N_{w,k}</th><th>EA</th><th>EI</th><th>N_{d'}</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-104.79</td><td>-90.78</td><td>-90.78</td><td>-7.88</td><td>6.900E+4</td><td>2.100E+7</td><td>-115.74</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>w_{x,d}</th><th>w_{y,d}</th><th>N_d</th><th>Q_d</th><th>M_d</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>106.95</td><td>-6.5</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.6</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.6</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-6.8</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-6.9</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-7.1</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-7.2</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-7.4</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-7.5</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-7.7</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-7.8</td><td>0.0</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-8.0</td><td>0.1</td><td>-104.79</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 1\Linkes Ufer\10_BS 1_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>106.95</td><td>-0.0056</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>γ_{m,k}</th><th>γ_{m',k}</th><th>φ_{i,k}</th><th>c(pas)_k</th><th>c(akt)_k</th><th>d(p)/φ_i</th><th>d(a)/φ_i</th><th>q_c</th><th>c_{u,k}</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>φ_{i,k}</th><th>delta</th><th>theta</th><th>k_{agh}(40°)</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>107.450</td><td>106.950</td><td>28.009</td><td>28.009</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.707</td><td>28.009</td><td>28.009</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>28.009</td><td>28.009</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>105.500</td><td>28.009</td><td>28.009</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>28.009</td><td>28.009</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>28.009</td><td>28.009</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.250</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</td><td>103.940</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.400</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.840</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-104.79	-90.78	-90.78	-7.88	6.900E+4	2.100E+7	-115.74	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-6.5	0.0	-104.79	0.00	0.00	-0.90	106.95	-6.6	0.0	-104.79	0.00	0.00	-0.90	106.95	-6.6	0.0	-104.79	0.00	0.00	-0.80	106.95	-6.8	0.0	-104.79	0.00	0.00	-0.70	106.95	-6.9	0.0	-104.79	0.00	0.00	-0.60	106.95	-7.1	0.0	-104.79	0.00	0.00	-0.50	106.95	-7.2	0.0	-104.79	0.00	0.00	-0.40	106.95	-7.4	0.0	-104.79	0.00	0.00	-0.30	106.95	-7.5	0.0	-104.79	0.00	0.00	-0.20	106.95	-7.7	0.0	-104.79	0.00	0.00	-0.10	106.95	-7.8	0.0	-104.79	0.00	0.00	0.00	106.95	-8.0	0.1	-104.79	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0056	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	28.009	28.009	0.00	0.00	106.950	106.707	28.009	28.009	0.00	0.00	106.707	106.400	28.009	28.009	0.00	0.00	106.400	105.500	28.009	28.009	0.00	0.00	105.500	105.450	28.009	28.009	0.00	0.50	105.450	105.000	28.009	28.009	0.50	5.00	105.000	104.400	23.341	23.341	5.00	5.00	104.400	104.250	23.341	23.341	5.00	5.00	104.250	103.940	23.341	23.341	5.00	5.00	103.940	103.400	23.341	23.341	5.00	5.00	103.400	102.840	23.341	23.341	5.00	5.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																															
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Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																							

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

102.840	102.550	23.341	23.341	5.00	5.00
102.550	102.450	32.451	32.861	5.00	5.00
102.450	101.850	32.861	35.323	5.00	5.00
101.850	101.450	35.323	36.964	5.00	5.00
101.450	100.449	36.964	41.067	5.00	5.00
100.449	99.449	41.067	45.170	5.00	5.00
99.449	98.549	45.170	48.862	5.00	5.00
98.549	80.000	48.862	124.941	5.00	5.00

Hydrodynamische Wasserdruckspannung
(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)

w(oben)	w(unten)	z(oben)	z(unten)
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]
0.00	0.00	107.45	102.55

Passive Erddruckbeiwerte
bestimmt nach: DIN 4085:2017

Schicht	UK	kpgh	kpch	phi,k	delta	theta
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]
3	80.00	6.006	6.054	32.500	-21.68	16.35

Passive Erddruckordinaten (Bemessungswerte)
Teilsicherheit Erdwiderstand = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

von	bis	oben	unten
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]
102.84	102.55	0.00	0.00
102.55	102.45	0.00	-4.25
102.45	101.85	-4.25	-29.76
101.85	101.45	-29.76	-46.77
101.45	100.45	-46.77	-89.28
100.45	99.45	-89.28	-131.80
99.45	98.55	-131.80	-170.06
98.55	80.00	-170.06	-958.43

Schnittgrößen (Bemessungswerte)

Tiefe	N	Q	M	A(h)
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]
107.45	0.0	0.0	0.0	
106.95	-16.7	-16.1	-4.0	-104.8
106.95	-16.7	88.7	-4.0	
106.71	-24.9	80.8	16.6	
106.40	-35.2	71.0	39.9	
105.50	-65.3	42.0	90.7	
105.45	-67.0	40.4	92.8	
105.00	-82.1	24.4	107.4	
104.40	-101.0	4.7	116.1	
104.25	-105.7	-0.3	116.5	
103.94	-115.5	-10.4	114.8	
103.40	-131.1	-28.2	104.4	
102.84	-147.3	-46.6	83.4	
102.55	-156.7	-56.1	68.6	
102.45	-159.5	-60.3	62.7	
101.85	-165.5	-69.6	22.4	
101.45	-163.3	-60.9	-4.0	
100.45	-140.1	1.8	-35.8	
99.45	-129.6	27.7	-16.0	
98.55	-138.8	0.0	0.0	

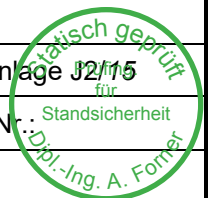
Schnitt: Anlage J2	Schnitt 1L	Seite Anlage J2/13
Kapitel: 3	LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 12/13
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																					
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																							
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																					
<div>Schnittgrößen ([g+q+w],k)</div> <table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-14.6</td><td>-14.0</td><td>-3.5</td><td>-90.8</td></tr><tr><td>106.95</td><td>-14.6</td><td>76.8</td><td>-3.5</td><td></td></tr><tr><td>106.71</td><td>-21.6</td><td>70.0</td><td>14.3</td><td></td></tr><tr><td>106.40</td><td>-30.6</td><td>61.4</td><td>34.5</td><td></td></tr><tr><td>105.50</td><td>-56.8</td><td>36.2</td><td>78.4</td><td></td></tr><tr><td>105.45</td><td>-58.2</td><td>34.7</td><td>80.1</td><td></td></tr><tr><td>105.00</td><td>-71.4</td><td>20.9</td><td>92.7</td><td></td></tr><tr><td>104.40</td><td>-87.8</td><td>3.9</td><td>100.2</td><td></td></tr><tr><td>104.25</td><td>-91.9</td><td>-0.4</td><td>100.5</td><td></td></tr><tr><td>103.94</td><td>-100.4</td><td>-9.1</td><td>99.0</td><td></td></tr><tr><td>103.40</td><td>-114.0</td><td>-24.4</td><td>89.9</td><td></td></tr><tr><td>102.84</td><td>-128.1</td><td>-40.3</td><td>71.8</td><td></td></tr><tr><td>102.55</td><td>-136.3</td><td>-48.5</td><td>58.9</td><td></td></tr><tr><td>102.45</td><td>-138.7</td><td>-52.1</td><td>53.9</td><td></td></tr><tr><td>101.85</td><td>-144.0</td><td>-60.1</td><td>19.0</td><td></td></tr><tr><td>101.45</td><td>-142.0</td><td>-52.6</td><td>-3.9</td><td></td></tr><tr><td>100.45</td><td>-121.8</td><td>1.7</td><td>-31.2</td><td></td></tr><tr><td>99.45</td><td>-112.7</td><td>24.1</td><td>-13.9</td><td></td></tr><tr><td>98.55</td><td>-120.7</td><td>0.0</td><td>0.0</td><td></td></tr></table> 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Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																																			
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m²]	107.45	-7.1	-	-	-	107.40	-7.1	-	-	-	107.00	-6.9	-	-	-	106.95	-6.9	-	-	-	106.95	-6.9	-	-	-	106.90	-6.9	-	-	-	106.76	-6.8	-	-	-	106.71	-6.8	-	-	-	106.71	-6.8	-	-	-	106.66	-6.8	-	-	-	106.45	-6.7	-	-	-	106.40	-6.7	-	-	-	106.40	-6.7	-	-	-	106.35	-6.7	-	-	-	105.55	-6.3	-	-	-	105.50	-6.3	-	-	-	105.50	-6.3	-	-	-	105.45	-6.2	-	-	-	105.45	-6.2	-	-	-	105.40	-6.2	-	-	-	105.05	-6.0	-	-	-	105.00	-6.0	-	-	-	105.00	-6.0	-	-	-	104.95	-5.9	-	-	-	104.45	-5.6	-	-	-	104.40	-5.6	-	-	-	104.40	-5.6	-	-	-	104.35	-5.6	-	-	-	104.30	-5.5	-	-	-	104.25	-5.5	-	-	-	104.25	-5.5	-	-	-	104.20	-5.4	-	-	-	103.95	-5.3	-	-	-	103.94	-5.2	-	-	-	103.94	-5.2	-	-	-	103.89	-5.2	-	-	-	103.45	-4.8	-	-	-	103.40	-4.8	-	-	-	103.40	-4.8	-	-	-	103.35	-4.8	-	-	-	102.90	-4.4	-	-	-	102.84	-4.3	-	-	-	102.84	-4.3	-	-	-	102.79	-4.3	-	-	-	102.60	-4.1	-	-	-	102.55	-4.0	0.00	0.00	0.00	102.55	-4.0	0.00	0.00	0.00	102.50	-4.0	0.00	0.00	3.45	102.50	-4.0	0.87	3.45	3.45	102.45	-3.9	0.87	3.41	6.91	102.45	-3.9	1.76	6.91	6.91	102.40	-3.9	1.76	6.82	10.36	101.90	-3.4	13.33	44.91	44.91	101.85	-3.3	13.33	44.23	48.36	101.85	-3.3	14.57	48.36	48.36	101.80	-3.3	14.57	47.62	51.82	101.50	-3.0	24.51	72.55	72.54	101.45	-2.9	24.51	71.29	76.00	101.45	-2.9	26.13	76.00	76.00	101.40	-2.9	26.13	74.66	79.45	100.50	-1.9	50.00	97.27	141.63	100.45	-1.9	50.00	94.79	145.08	100.45	-1.9	50.00	94.79	145.08	100.40	-1.8	50.00	92.32	148.54	99.50	-1.0	50.00	48.86	210.72	99.45	-0.9	50.00	46.49	214.17	99.45	-0.9	50.00	46.49	214.17
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>99.40-0.950.0044.12217.63</div><div>98.60-0.150.006.45272.90</div><div>98.55-0.150.004.10276.35</div></div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05383346 Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 4.00 m Profillänge = 8.90 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 168.41 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 53.29 \text{ kN/m}$ ($E_{ah,k} = 288.48 \text{ kN/m}$) $B_{v,k} = 91.91$ Summe $V_{,k} = 129.79 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 99.43 bis 95.91 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table><div>Mantelfläche bis 98.55 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1022.19 \text{ kN/m}$</div></div><div>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 202.10 - 0.00 + 61.28 + 0.00 = 263.38 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 263.38 / 1022.19 = 0.26$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.55	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/16								
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 12/16								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																							
Auftraggeber: Stadtverwaltung Leipzig																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>4</div><div>LF 2.2 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 13_BS 1_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>1.35</td><td>1.35</td><td>0.00</td><td>0.00</td><td>0.74</td><td>10.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad $\mu_e = 287.750 / 340.177 = 0.846$ Bettungslager $B_{h,d} = 287.750$ kN/m Erdwiderstand $E_{ph,d} = 340.177$ kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.00	1.35	1.35	0.00	0.00	0.74	10.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																	
1	0.00	1.35	1.35	0.00	0.00	0.74	10.00	nein																																	
von	bis	ks(oben)	ks(unten)																																						
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																						
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Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/17																																							
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 12/17																																							
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																							

statistisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																									
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																									
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-122.42</td><td>-106.11</td><td>-106.11</td><td>-8.00</td><td>6.900E+4</td><td>2.100E+7</td><td>-135.29</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-6.5</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.6</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.6</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-6.8</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-7.0</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-7.2</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-7.3</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-7.5</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-7.7</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-7.9</td><td>0.0</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-8.0</td><td>0.1</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-8.2</td><td>0.1</td><td>-122.42</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 1\Linkes Ufer\10_BS 1_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0056</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>32.229</td><td>32.229</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.707</td><td>32.229</td><td>32.229</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>32.229</td><td>32.229</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>105.500</td><td>32.229</td><td>32.229</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>32.229</td><td>32.229</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.000</td><td>32.229</td><td>32.229</td><td>0.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.200</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>104.200</td><td>103.940</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>103.940</td><td>103.400</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.840</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-122.42	-106.11	-106.11	-8.00	6.900E+4	2.100E+7	-135.29	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-6.5	0.0	-122.42	0.00	0.00	-0.90	106.95	-6.6	0.0	-122.42	0.00	0.00	-0.90	106.95	-6.6	0.0	-122.42	0.00	0.00	-0.80	106.95	-6.8	0.0	-122.42	0.00	0.00	-0.70	106.95	-7.0	0.0	-122.42	0.00	0.00	-0.60	106.95	-7.2	0.0	-122.42	0.00	0.00	-0.50	106.95	-7.3	0.0	-122.42	0.00	0.00	-0.40	106.95	-7.5	0.0	-122.42	0.00	0.00	-0.30	106.95	-7.7	0.0	-122.42	0.00	0.00	-0.20	106.95	-7.9	0.0	-122.42	0.00	0.00	-0.10	106.95	-8.0	0.1	-122.42	0.00	0.00	0.00	106.95	-8.2	0.1	-122.42	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0056	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	32.229	32.229	0.00	0.00	106.950	106.707	32.229	32.229	0.00	0.00	106.707	106.400	32.229	32.229	0.00	0.00	106.400	105.500	32.229	32.229	0.00	0.00	105.500	105.450	32.229	32.229	0.00	0.50	105.450	105.000	32.229	32.229	0.50	5.00	105.000	104.400	26.857	26.857	5.00	5.00	104.400	104.200	26.857	26.857	5.00	5.00	104.200	103.940	26.857	26.857	5.00	5.00	103.940	103.400	26.857	26.857	5.00	5.00	103.400	102.840	26.857	26.857	5.00	5.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																					
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]																																																																																																																																																																																																																																																																																																																					
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<table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte)</p> <p>Teilsicherheit Erdwiderstand = 1.30</p> <p>Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.84</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.80</td></tr><tr><td>99.45</td><td>98.55</td><td>-131.80</td><td>-170.06</td></tr><tr><td>98.55</td><td>80.00</td><td>-170.06</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-17.6</td><td>-18.5</td><td>-4.6</td><td>-122.4</td></tr><tr><td>106.95</td><td>-17.6</td><td>103.9</td><td>-4.6</td><td></td></tr><tr><td>106.71</td><td>-26.2</td><td>94.9</td><td>19.5</td><td></td></tr><tr><td>106.40</td><td>-37.0</td><td>83.5</td><td>46.9</td><td></td></tr><tr><td>105.50</td><td>-68.8</td><td>50.1</td><td>107.0</td><td></td></tr><tr><td>105.45</td><td>-70.5</td><td>48.3</td><td>109.5</td><td></td></tr><tr><td>105.00</td><td>-86.4</td><td>30.1</td><td>127.2</td><td></td></tr><tr><td>104.40</td><td>-106.2</td><td>8.0</td><td>138.7</td><td></td></tr><tr><td>104.20</td><td>-112.8</td><td>0.6</td><td>139.5</td><td></td></tr><tr><td>103.94</td><td>-121.4</td><td>-9.0</td><td>138.4</td><td></td></tr><tr><td>103.40</td><td>-137.6</td><td>-28.9</td><td>128.2</td><td></td></tr><tr><td>102.84</td><td>-154.4</td><td>-49.6</td><td>106.2</td><td></td></tr><tr><td>102.55</td><td>-164.3</td><td>-60.3</td><td>90.3</td><td></td></tr><tr><td>102.45</td><td>-167.2</td><td>-64.8</td><td>84.1</td><td></td></tr><tr><td>101.85</td><td>-173.2</td><td>-76.6</td><td>40.3</td><td></td></tr><tr><td>101.45</td><td>-170.9</td><td>-69.6</td><td>10.7</td><td></td></tr><tr><td>100.45</td><td>-145.8</td><td>-6.2</td><td>-31.0</td><td></td></tr><tr><td>99.45</td><td>-131.2</td><td>26.1</td><td>-15.6</td><td></td></tr><tr><td>98.55</td><td>-138.3</td><td>0.0</td><td>0.0</td><td></td></tr></table>								102.840	102.550	26.857	26.857	5.00	5.00	102.550	102.450	36.017	36.428	5.00	5.00	102.450	101.850	36.428	38.889	5.00	5.00	101.850	101.450	38.889	40.530	5.00	5.00	101.450	100.449	40.530	44.633	5.00	5.00	100.449	99.449	44.633	48.736	5.00	5.00	99.449	98.549	48.736	52.429	5.00	5.00	98.549	80.000	52.429	128.508	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.84	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.80	99.45	98.55	-131.80	-170.06	98.55	80.00	-170.06	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-17.6	-18.5	-4.6	-122.4	106.95	-17.6	103.9	-4.6		106.71	-26.2	94.9	19.5		106.40	-37.0	83.5	46.9		105.50	-68.8	50.1	107.0		105.45	-70.5	48.3	109.5		105.00	-86.4	30.1	127.2		104.40	-106.2	8.0	138.7		104.20	-112.8	0.6	139.5		103.94	-121.4	-9.0	138.4		103.40	-137.6	-28.9	128.2		102.84	-154.4	-49.6	106.2		102.55	-164.3	-60.3	90.3		102.45	-167.2	-64.8	84.1		101.85	-173.2	-76.6	40.3		101.45	-170.9	-69.6	10.7		100.45	-145.8	-6.2	-31.0		99.45	-131.2	26.1	-15.6		98.55	-138.3	0.0	0.0	
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Statisch geprüft

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Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																					
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.95</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.89</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.90</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.79</td><td>-4.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-4.3</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-4.3</td><td>0.80</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.3</td><td>0.80</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-4.3</td><td>1.61</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-4.2</td><td>1.61</td><td>6.83</td><td>10.36</td></tr><tr><td>101.90</td><td>-3.7</td><td>12.14</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-3.6</td><td>12.14</td><td>44.25</td><td>48.36</td></tr><tr><td>101.85</td><td>-3.6</td><td>13.27</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-3.6</td><td>13.27</td><td>47.64</td><td>51.82</td></tr><tr><td>101.50</td><td>-3.3</td><td>22.22</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.2</td><td>22.22</td><td>71.33</td><td>76.00</td></tr><tr><td>101.45</td><td>-3.2</td><td>23.68</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-3.2</td><td>23.68</td><td>74.70</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.2</td><td>50.00</td><td>108.72</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.04</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.04</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.1</td><td>50.00</td><td>103.36</td><td>148.54</td></tr><tr><td>99.50</td><td>-1.1</td><td>50.00</td><td>56.10</td><td>210.72</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>53.52</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.1</td><td>50.00</td><td>53.52</td><td>214.17</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-7.3	-	-	-	107.40	-7.3	-	-	-	107.00	-7.2	-	-	-	106.95	-7.1	-	-	-	106.95	-7.1	-	-	-	106.90	-7.1	-	-	-	106.75	-7.1	-	-	-	106.71	-7.1	-	-	-	106.71	-7.1	-	-	-	106.66	-7.0	-	-	-	106.45	-7.0	-	-	-	106.40	-7.0	-	-	-	106.40	-7.0	-	-	-	106.35	-6.9	-	-	-	105.55	-6.6	-	-	-	105.50	-6.6	-	-	-	105.50	-6.6	-	-	-	105.45	-6.6	-	-	-	105.45	-6.6	-	-	-	105.40	-6.5	-	-	-	105.05	-6.4	-	-	-	105.00	-6.3	-	-	-	105.00	-6.3	-	-	-	104.95	-6.3	-	-	-	104.45	-6.0	-	-	-	104.40	-6.0	-	-	-	104.40	-6.0	-	-	-	104.35	-5.9	-	-	-	104.25	-5.9	-	-	-	104.20	-5.8	-	-	-	104.20	-5.8	-	-	-	104.15	-5.8	-	-	-	103.95	-5.6	-	-	-	103.94	-5.6	-	-	-	103.94	-5.6	-	-	-	103.89	-5.6	-	-	-	103.45	-5.2	-	-	-	103.40	-5.2	-	-	-	103.40	-5.2	-	-	-	103.35	-5.1	-	-	-	102.90	-4.7	-	-	-	102.84	-4.7	-	-	-	102.84	-4.7	-	-	-	102.79	-4.6	-	-	-	102.60	-4.4	-	-	-	102.55	-4.4	0.00	0.00	0.00	102.55	-4.4	0.00	0.00	0.00	102.50	-4.3	0.00	0.00	3.45	102.50	-4.3	0.80	3.45	3.45	102.45	-4.3	0.80	3.41	6.91	102.45	-4.3	1.61	6.91	6.91	102.40	-4.2	1.61	6.83	10.36	101.90	-3.7	12.14	44.91	44.91	101.85	-3.6	12.14	44.25	48.36	101.85	-3.6	13.27	48.36	48.36	101.80	-3.6	13.27	47.64	51.82	101.50	-3.3	22.22	72.54	72.54	101.45	-3.2	22.22	71.33	76.00	101.45	-3.2	23.68	76.00	76.00	101.40	-3.2	23.68	74.70	79.45	100.50	-2.2	50.00	108.72	141.63	100.45	-2.1	50.00	106.04	145.08	100.45	-2.1	50.00	106.04	145.08	100.40	-2.1	50.00	103.36	148.54	99.50	-1.1	50.00	56.10	210.72	99.45	-1.1	50.00	53.52	214.17	99.45	-1.1	50.00	53.52	214.17
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Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 12/24																																																																																																																																																																																																																																																																																																																																																										
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p> 99.40 -1.0 50.00 50.94 217.63 98.60 -0.2 50.00 9.84 272.90 98.55 -0.1 50.00 7.28 276.35 </p> <p> Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.05873581 Theoretischer Fußpunkt = 98.549 m </p> <p> Einbindetiefe t_g = 4.00 m Profillänge = 8.90 m </p> <p> Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$ $G_{i,k}$ = 168.41 kN/m $G'_{i,k}$ = 0.00 kN/m $P_{v,k}$ = 0.00 kN/m $E_{av,k}$ = 59.33 kN/m ($E_{ah,k}$ = 321.71 kN/m) $B_{v,k}$ = 99.02 Summe $V_{i,k}$ = 128.72 kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) $\Rightarrow q_{b,k}$ = 1.60 MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m </p> <p> Mantelreibung <table border="0"> <tr> <td>von</td> <td>bis</td> <td>$q_{s,k}$ [kN/m²]</td> <td>Bezeichnung</td> </tr> <tr> <td>102.55</td> <td>98.55</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.55 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14$ kN/m $R_{i,d} = R_{b,d} + R_{s1,d} = 1022.19$ kN/m </p> <p> Einwirkungen $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 202.10 - 0.00 + 68.22 + 0.00 = 270.32$ kN/m $\Rightarrow \mu = V_{i,d} / R_{i,d} = 270.32 / 1022.19 = 0.26$ </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>			von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung							
102.55	98.55	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/22								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 12/22								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 1 Datei: 14_BS 1_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.80 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.80 108.80 108.79 nein</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftränder Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.80 0.00 0.00 0.00 46.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.25 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div>		
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/23
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 12/23
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																
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<div>Ausnutzungsgrad $\mu_{ue} = 171.327 / 253.046 = 0.677$ Bettungslager $B_{h,d} = 171.327 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 253.046 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50) $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>$N_{d'}$</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-276.89</td><td>-238.99</td><td>-238.99</td><td>-49.89</td><td>3.900E+7</td><td>2.100E+7</td><td>-304.71 Steife</td></tr></table> <div>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>$N_{d'}$</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-8.30</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-5.9</td><td>0.0</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-5.9</td><td>0.1</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-5.9</td><td>0.1</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-5.9</td><td>0.1</td><td>-277.33</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden von "Hand" eingegeben. Anker/Steife Tiefe Vorverformung</div> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>103.72</td><td>-0.0051</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{am,k}$</th><th>$\gamma_{am',k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>103.94</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.84</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>103.94</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.84</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$) mit Zusatzdrücke</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>108.800</td><td>108.794</td><td>0.000</td><td>3.941</td><td>0.00</td></tr><tr><td>108.794</td><td>107.800</td><td>3.941</td><td>11.301</td><td>0.00</td></tr><tr><td>107.800</td><td>107.450</td><td>11.301</td><td>13.892</td><td>0.00</td></tr><tr><td>107.450</td><td>106.800</td><td>13.892</td><td>18.705</td><td>0.00</td></tr><tr><td>106.800</td><td>105.750</td><td>18.705</td><td>26.479</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>26.479</td><td>28.330</td><td>0.00</td></tr><tr><td>105.500</td><td>104.750</td><td>28.330</td><td>31.252</td><td>0.00</td></tr><tr><td>104.750</td><td>103.940</td><td>31.252</td><td>34.409</td><td>7.50</td></tr><tr><td>103.940</td><td>103.760</td><td>42.539</td><td>43.304</td><td>15.60</td></tr></table>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-276.89	-238.99	-238.99	-49.89	3.900E+7	2.100E+7	-304.71 Steife	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-5.9	0.0	-277.33	0.00	0.00	-7.47	103.72	-5.9	0.0	-277.33	0.00	0.00	-7.47	103.72	-5.9	0.0	-277.33	0.00	0.00	-6.64	103.72	-5.9	0.0	-277.33	0.00	0.00	-5.81	103.72	-5.9	0.0	-277.33	0.00	0.00	-4.98	103.72	-5.9	0.0	-277.33	0.00	0.00	-4.15	103.72	-5.9	0.0	-277.33	0.00	0.00	-3.32	103.72	-5.9	0.0	-277.33	0.00	0.00	-2.49	103.72	-5.9	0.0	-277.33	0.00	0.00	-1.66	103.72	-5.9	0.1	-277.33	0.00	0.00	-0.83	103.72	-5.9	0.1	-277.33	0.00	0.00	0.00	103.72	-5.9	0.1	-277.33	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0051	Schicht	UK	$\gamma_{am,k}$	$\gamma_{am',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	103.94	0.390	0.461	30.000	10.00	57.80	0.179	2	102.84	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	108.800	108.794	0.000	3.941	0.00	108.794	107.800	3.941	11.301	0.00	107.800	107.450	11.301	13.892	0.00	107.450	106.800	13.892	18.705	0.00	106.800	105.750	18.705	26.479	0.00	105.750	105.500	26.479	28.330	0.00	105.500	104.750	28.330	31.252	0.00	104.750	103.940	31.252	34.409	7.50	103.940	103.760	42.539	43.304	15.60	<div>Statisch geprüft für Standssicherheit Dipl.-Ing. A. Forner</div>
Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$																																																																																																																																																																																																																																																																																								
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-3.32	103.72	-5.9	0.0	-277.33	0.00	0.00																																																																																																																																																																																																																																																																																												
-2.49	103.72	-5.9	0.0	-277.33	0.00	0.00																																																																																																																																																																																																																																																																																												
-1.66	103.72	-5.9	0.1	-277.33	0.00	0.00																																																																																																																																																																																																																																																																																												
-0.83	103.72	-5.9	0.1	-277.33	0.00	0.00																																																																																																																																																																																																																																																																																												
0.00	103.72	-5.9	0.1	-277.33	0.00	0.00																																																																																																																																																																																																																																																																																												
[-]	[m]	[m]																																																																																																																																																																																																																																																																																																
1	103.72	-0.0051																																																																																																																																																																																																																																																																																																
Schicht	UK	$\gamma_{am,k}$	$\gamma_{am',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$																																																																																																																																																																																																																																																																																								
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																								
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																								
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																								
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																								
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																											
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																											
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																											
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																											
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																											
von	bis	oben	unten	Wasserdruck																																																																																																																																																																																																																																																																																														
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																														
108.800	108.794	0.000	3.941	0.00																																																																																																																																																																																																																																																																																														
108.794	107.800	3.941	11.301	0.00																																																																																																																																																																																																																																																																																														
107.800	107.450	11.301	13.892	0.00																																																																																																																																																																																																																																																																																														
107.450	106.800	13.892	18.705	0.00																																																																																																																																																																																																																																																																																														
106.800	105.750	18.705	26.479	0.00																																																																																																																																																																																																																																																																																														
105.750	105.500	26.479	28.330	0.00																																																																																																																																																																																																																																																																																														
105.500	104.750	28.330	31.252	0.00																																																																																																																																																																																																																																																																																														
104.750	103.940	31.252	34.409	7.50																																																																																																																																																																																																																																																																																														
103.940	103.760	42.539	43.304	15.60																																																																																																																																																																																																																																																																																														
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/24																																																																																																																																																																																																																																																																																																
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																					
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																									
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																					
<table><tr><td>103.760</td><td>103.720</td><td>43.304</td><td>43.475</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.840</td><td>43.475</td><td>47.219</td><td>17.80</td><td>26.60</td></tr><tr><td>102.840</td><td>102.750</td><td>34.828</td><td>35.197</td><td>26.60</td><td>27.50</td></tr><tr><td>102.750</td><td>102.550</td><td>35.197</td><td>36.017</td><td>27.50</td><td>29.50</td></tr><tr><td>102.550</td><td>101.800</td><td>36.017</td><td>39.094</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>39.094</td><td>43.197</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>43.197</td><td>47.300</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>47.300</td><td>51.403</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>51.403</td><td>52.429</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>52.429</td><td>128.508</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.75</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.80</td><td>0.00</td><td>-31.89</td></tr><tr><td>101.80</td><td>100.80</td><td>-31.89</td><td>-74.40</td></tr><tr><td>100.80</td><td>99.80</td><td>-74.40</td><td>-116.92</td></tr><tr><td>99.80</td><td>98.80</td><td>-116.92</td><td>-159.43</td></tr><tr><td>98.80</td><td>98.55</td><td>-159.43</td><td>-170.06</td></tr><tr><td>98.55</td><td>80.00</td><td>-170.06</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.79</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.80</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-34.4</td><td>-13.8</td><td>-7.6</td><td></td></tr><tr><td>107.45</td><td>-90.2</td><td>-13.8</td><td>-43.3</td><td></td></tr><tr><td>106.80</td><td>-108.8</td><td>-26.0</td><td>-56.0</td><td></td></tr><tr><td>105.75</td><td>-141.6</td><td>-53.3</td><td>-96.8</td><td></td></tr><tr><td>105.50</td><td>-149.9</td><td>-61.1</td><td>-111.1</td><td></td></tr><tr><td>104.75</td><td>-175.6</td><td>-90.2</td><td>-167.3</td><td></td></tr><tr><td>103.94</td><td>-204.3</td><td>-132.0</td><td>-256.5</td><td></td></tr><tr><td>103.76</td><td>-210.6</td><td>-144.5</td><td>-281.4</td><td></td></tr><tr><td>103.72</td><td>-212.0</td><td>-147.3</td><td>-287.2</td><td>-277.3</td></tr><tr><td>103.72</td><td>-212.0</td><td>130.0</td><td>-287.2</td><td></td></tr><tr><td>102.84</td><td>-243.5</td><td>60.7</td><td>-202.4</td><td></td></tr><tr><td>102.75</td><td>-246.9</td><td>54.2</td><td>-197.2</td><td></td></tr><tr><td>102.55</td><td>-254.5</td><td>39.1</td><td>-187.9</td><td></td></tr><tr><td>101.80</td><td>-263.4</td><td>27.3</td><td>-165.5</td><td></td></tr><tr><td>100.80</td><td>-251.3</td><td>64.8</td><td>-121.5</td><td></td></tr><tr><td>99.80</td><td>-251.0</td><td>68.0</td><td>-50.5</td><td></td></tr><tr><td>98.80</td><td>-267.7</td><td>19.8</td><td>-2.5</td><td></td></tr><tr><td>98.55</td><td>-271.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								103.760	103.720	43.304	43.475	17.40	17.80	103.720	102.840	43.475	47.219	17.80	26.60	102.840	102.750	34.828	35.197	26.60	27.50	102.750	102.550	35.197	36.017	27.50	29.50	102.550	101.800	36.017	39.094	0.00	0.00	101.800	100.799	39.094	43.197	0.00	0.00	100.799	99.799	43.197	47.300	0.00	0.00	99.799	98.799	47.300	51.403	0.00	0.00	98.799	98.549	51.403	52.429	0.00	0.00	98.549	80.000	52.429	128.508	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.80	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.75	102.55	0.00	0.00	102.55	101.80	0.00	-31.89	101.80	100.80	-31.89	-74.40	100.80	99.80	-74.40	-116.92	99.80	98.80	-116.92	-159.43	98.80	98.55	-159.43	-170.06	98.55	80.00	-170.06	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.80	0.0	0.0	0.0		108.79	-0.1	0.0	0.0		107.80	-24.9	-8.7	-3.6		107.45	-34.4	-13.8	-7.6		107.45	-90.2	-13.8	-43.3		106.80	-108.8	-26.0	-56.0		105.75	-141.6	-53.3	-96.8		105.50	-149.9	-61.1	-111.1		104.75	-175.6	-90.2	-167.3		103.94	-204.3	-132.0	-256.5		103.76	-210.6	-144.5	-281.4		103.72	-212.0	-147.3	-287.2	-277.3	103.72	-212.0	130.0	-287.2		102.84	-243.5	60.7	-202.4		102.75	-246.9	54.2	-197.2		102.55	-254.5	39.1	-187.9		101.80	-263.4	27.3	-165.5		100.80	-251.3	64.8	-121.5		99.80	-251.0	68.0	-50.5		98.80	-267.7	19.8	-2.5		98.55	-271.2	0.0	0.0	
103.760	103.720	43.304	43.475	17.40	17.80																																																																																																																																																																																																																																																						
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102.840	102.750	34.828	35.197	26.60	27.50																																																																																																																																																																																																																																																						
102.750	102.550	35.197	36.017	27.50	29.50																																																																																																																																																																																																																																																						
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98.799	98.549	51.403	52.429	0.00	0.00																																																																																																																																																																																																																																																						
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[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																					
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																					
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105.75	-141.6	-53.3	-96.8																																																																																																																																																																																																																																																								
105.50	-149.9	-61.1	-111.1																																																																																																																																																																																																																																																								
104.75	-175.6	-90.2	-167.3																																																																																																																																																																																																																																																								
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102.75	-246.9	54.2	-197.2																																																																																																																																																																																																																																																								
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98.80	-267.7	19.8	-2.5																																																																																																																																																																																																																																																								
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Dipl.-Ing. A. Forner



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103.67	-5.1	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																				
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102.80	-3.7	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																				
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102.55	-3.4	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																				
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102.50	-3.3	0.00	0.00	3.45																																																																																																																																																																																																																																																																																																																																																																																																																				
101.85	-2.5	19.40	48.36	48.36																																																																																																																																																																																																																																																																																																																																																																																																																				
101.80	-2.4	19.40	47.24	51.82																																																																																																																																																																																																																																																																																																																																																																																																																				
101.80	-2.4	21.27	51.82	51.82																																																																																																																																																																																																																																																																																																																																																																																																																				
101.75	-2.4	21.27	50.60	55.27																																																																																																																																																																																																																																																																																																																																																																																																																				
100.85	-1.4	50.00	72.43	117.45																																																																																																																																																																																																																																																																																																																																																																																																																				
100.80	-1.4	50.00	70.09	120.90																																																																																																																																																																																																																																																																																																																																																																																																																				
100.80	-1.4	50.00	70.09	120.90																																																																																																																																																																																																																																																																																																																																																																																																																				
100.75	-1.4	50.00	67.77	124.36																																																																																																																																																																																																																																																																																																																																																																																																																				
99.85	-0.6	50.00	29.18	186.54																																																																																																																																																																																																																																																																																																																																																																																																																				
99.80	-0.5	50.00	27.16	189.99																																																																																																																																																																																																																																																																																																																																																																																																																				
99.80	-0.5	50.00	27.16	189.99																																																																																																																																																																																																																																																																																																																																																																																																																				
99.75	-0.5	50.00	25.16	193.45																																																																																																																																																																																																																																																																																																																																																																																																																				
98.85	0.2	50.00	-9.97	255.62																																																																																																																																																																																																																																																																																																																																																																																																																				
Schnitt:		Anlage J2 Schnitt 1L			Seite Anlage J2/27																																																																																																																																																																																																																																																																																																																																																																																																																			
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>98.800.250.00-11.89259.08</div><div>98.800.250.00-11.89259.08</div><div>98.750.350.00-13.82262.53</div><div>98.600.450.00-19.59272.90</div><div>98.550.450.00-21.52276.35</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.04411331</div><div>Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 4.00 m</div><div>Profillänge = 10.25 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</div><div>$G_{,k} = 193.96 \text{ kN/m}$</div><div>$G'_{,k} = 0.00 \text{ kN/m}$</div><div>$P_{v,k} = 46.50 \text{ kN/m}$</div><div>$E_{av,k} = 62.42 \text{ kN/m}$ ($E_{ah,k} = 338.68 \text{ kN/m}$)</div><div>$B_{v,k} = 59.31$</div><div>Summe $V_{,k} = 243.56 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand $D = 0.88 \text{ m}$</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div><div>(gemittelt von 99.43 bis 95.91 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$</div><div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung</div><div><table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.55 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$</div><div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14 \text{ kN/m}$</div><div>$R_{,d} = R_{b,d} + R_{s1,d} = 1022.19 \text{ kN/m}$</div><div>Einwirkungen</div><div>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 232.75 - 0.00 + 71.78 + 55.80 = 360.33 \text{ kN/m}$</div><div>$\Rightarrow \mu = V_{,d} / R_{,d} = 360.33 / 1022.19 = 0.35$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div><div>Hydraulische Grundbruchsicherheit</div><div>UK Schicht = 108.80</div><div>$\gamma(\text{Gewicht}) = 0.95$</div><div>$\gamma(\text{Strömungskraft}) = 1.45$</div><div>Ausnutzungsgrad Hydraulischer Grundbruch = 0.000</div><div>$= 0.000 = (1.45 \cdot 0.00) / (0.95 \cdot 0.00)$</div><div>Nachweis Auftriebssicherheit nicht erforderlich !</div></div></div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.55	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J2	Schnitt 1L	Seite Anlage J2/28								
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025								
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025									



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig		-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

6

LF 4 (BS-P, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 1
Datei: 15_BS 1_LF4 (5 kN_m², BS-P).vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 108.80 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-P
gamma(G) = 1.35
gamma(G,Ruhe) = 1.20
gamma(Q) = 1.50
gamma(Ep) = 1.40
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	5.00	0.00	108.80	108.80	108.79	nein

Passivseite

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	29.50	105.50	102.55	Wasserdruck

Kraftträger

Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-29.80	0.00	0.00	0.00	46.50	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 10.25 m

Statisch geprüft

12/29

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 209.176 / 258.929 = 0.808$
Bettungslager $B_{h,d} = 209.176 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 258.929 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-266.39	-206.53	-206.53	-50.10	3.900E+7	2.100E+7	-263.32 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-6.5	0.0	-267.08	0.00	0.00
-7.47	103.72	-6.5	0.0	-267.08	0.00	0.00
-7.47	103.72	-6.5	0.0	-267.08	0.00	0.00
-6.64	103.72	-6.5	0.0	-267.08	0.00	0.00
-5.81	103.72	-6.5	0.0	-267.08	0.00	0.00
-4.98	103.72	-6.5	0.0	-267.08	0.00	0.00
-4.15	103.72	-6.5	0.0	-267.08	0.00	0.00
-3.32	103.72	-6.5	0.0	-267.08	0.00	0.00
-2.49	103.72	-6.5	0.1	-267.08	0.00	0.00
-1.66	103.72	-6.5	0.1	-267.08	0.00	0.00
-0.83	103.72	-6.6	0.1	-267.08	0.00	0.00
0.00	103.72	-6.6	0.1	-267.08	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0051

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte


Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.800	108.794	0.000	1.992	0.00
108.794	107.800	1.992	9.352	0.00
107.800	107.450	9.352	11.944	0.00
107.450	106.800	11.944	16.756	0.00

Schnitt:	Anlage J2	Schnitt 1L	Seite Anlage J2/30
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																							
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<table><tr><td>106.800</td><td>105.750</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>24.530</td><td>26.381</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.750</td><td>26.381</td><td>29.304</td><td>0.00</td><td>7.50</td></tr><tr><td>104.750</td><td>103.940</td><td>29.304</td><td>32.460</td><td>7.50</td><td>15.60</td></tr><tr><td>103.940</td><td>103.760</td><td>40.036</td><td>40.801</td><td>15.60</td><td>17.40</td></tr><tr><td>103.760</td><td>103.720</td><td>40.801</td><td>40.972</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.840</td><td>40.972</td><td>44.716</td><td>17.80</td><td>26.60</td></tr><tr><td>102.840</td><td>102.750</td><td>33.044</td><td>33.414</td><td>26.60</td><td>27.50</td></tr><tr><td>102.750</td><td>102.550</td><td>33.414</td><td>34.234</td><td>27.50</td><td>29.50</td></tr><tr><td>102.550</td><td>101.800</td><td>34.234</td><td>37.311</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>37.311</td><td>41.414</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>41.414</td><td>45.517</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>45.517</td><td>49.620</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>49.620</td><td>50.645</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>50.645</td><td>126.725</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.75</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.80</td><td>-11.33</td><td>-40.93</td></tr><tr><td>101.80</td><td>100.80</td><td>-40.93</td><td>-80.41</td></tr><tr><td>100.80</td><td>99.80</td><td>-80.41</td><td>-119.89</td></tr><tr><td>99.80</td><td>98.80</td><td>-119.89</td><td>-159.37</td></tr><tr><td>98.80</td><td>98.55</td><td>-159.37</td><td>-169.24</td></tr><tr><td>98.55</td><td>80.00</td><td>-169.24</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.79</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.80</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-36.9</td><td>-11.9</td><td>-6.1</td><td></td></tr><tr><td>107.45</td><td>-99.7</td><td>-11.9</td><td>-46.4</td><td></td></tr><tr><td>106.80</td><td>-119.7</td><td>-23.8</td><td>-57.8</td><td></td></tr><tr><td>105.75</td><td>-155.1</td><td>-51.5</td><td>-96.4</td><td></td></tr><tr><td>105.50</td><td>-164.1</td><td>-59.6</td><td>-110.3</td><td></td></tr><tr><td>104.75</td><td>-191.9</td><td>-90.0</td><td>-165.7</td><td></td></tr><tr><td>103.94</td><td>-223.0</td><td>-134.5</td><td>-255.8</td><td></td></tr><tr><td>103.76</td><td>-229.9</td><td>-147.8</td><td>-281.2</td><td></td></tr><tr><td>103.72</td><td>-231.4</td><td>-150.9</td><td>-287.2</td><td>-267.1</td></tr><tr><td>103.72</td><td>-231.4</td><td>116.2</td><td>-287.2</td><td></td></tr><tr><td>102.84</td><td>-265.5</td><td>41.8</td><td>-216.6</td><td></td></tr><tr><td>102.75</td><td>-269.2</td><td>34.7</td><td>-213.2</td><td></td></tr><tr><td>102.55</td><td>-277.5</td><td>18.4</td><td>-207.9</td><td></td></tr><tr><td>101.80</td><td>-279.7</td><td>24.5</td><td>-195.1</td><td></td></tr><tr><td>100.80</td><td>-262.3</td><td>78.4</td><td>-142.3</td><td></td></tr><tr><td>99.80</td><td>-263.9</td><td>79.2</td><td>-58.5</td><td></td></tr><tr><td>98.80</td><td>-282.9</td><td>22.7</td><td>-2.9</td><td></td></tr><tr><td>98.55</td><td>-286.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.800	105.750	16.756	24.530	0.00	0.00	105.750	105.500	24.530	26.381	0.00	0.00	105.500	104.750	26.381	29.304	0.00	7.50	104.750	103.940	29.304	32.460	7.50	15.60	103.940	103.760	40.036	40.801	15.60	17.40	103.760	103.720	40.801	40.972	17.40	17.80	103.720	102.840	40.972	44.716	17.80	26.60	102.840	102.750	33.044	33.414	26.60	27.50	102.750	102.550	33.414	34.234	27.50	29.50	102.550	101.800	34.234	37.311	0.00	0.00	101.800	100.799	37.311	41.414	0.00	0.00	100.799	99.799	41.414	45.517	0.00	0.00	99.799	98.799	45.517	49.620	0.00	0.00	98.799	98.549	49.620	50.645	0.00	0.00	98.549	80.000	50.645	126.725	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.80	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.75	102.55	0.00	0.00	102.55	101.80	-11.33	-40.93	101.80	100.80	-40.93	-80.41	100.80	99.80	-80.41	-119.89	99.80	98.80	-119.89	-159.37	98.80	98.55	-159.37	-169.24	98.55	80.00	-169.24	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.80	0.0	0.0	0.0		108.79	-0.1	0.0	0.0		107.80	-26.7	-7.2	-2.8		107.45	-36.9	-11.9	-6.1		107.45	-99.7	-11.9	-46.4		106.80	-119.7	-23.8	-57.8		105.75	-155.1	-51.5	-96.4		105.50	-164.1	-59.6	-110.3		104.75	-191.9	-90.0	-165.7		103.94	-223.0	-134.5	-255.8		103.76	-229.9	-147.8	-281.2		103.72	-231.4	-150.9	-287.2	-267.1	103.72	-231.4	116.2	-287.2		102.84	-265.5	41.8	-216.6		102.75	-269.2	34.7	-213.2		102.55	-277.5	18.4	-207.9		101.80	-279.7	24.5	-195.1		100.80	-262.3	78.4	-142.3		99.80	-263.9	79.2	-58.5		98.80	-282.9	22.7	-2.9		98.55	-286.2	0.0	0.0	
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kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>108.80</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.80</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.80</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.79</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.79</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.74</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.85</td><td>-14.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.80</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.80</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.85</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.80</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.80</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.99</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.89</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.76</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.76</td><td>-5.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.89</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.80</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.80</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.75</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.75</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-3.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.3</td><td>0.00</td><td>0.00</td><td>19.82</td></tr><tr><td>102.50</td><td>-3.3</td><td>0.00</td><td>0.00</td><td>23.27</td></tr><tr><td>101.85</td><td>-2.4</td><td>27.96</td><td>68.18</td><td>68.18</td></tr><tr><td>101.80</td><td>-2.4</td><td>27.96</td><td>66.53</td><td>71.63</td></tr><tr><td>101.80</td><td>-2.4</td><td>30.10</td><td>71.64</td><td>71.63</td></tr><tr><td>101.75</td><td>-2.3</td><td>30.10</td><td>69.88</td><td>75.09</td></tr><tr><td>100.85</td><td>-1.4</td><td>50.00</td><td>68.78</td><td>137.27</td></tr><tr><td>100.80</td><td>-1.3</td><td>50.00</td><td>66.42</td><td>140.72</td></tr><tr><td>100.80</td><td>-1.3</td><td>50.00</td><td>66.42</td><td>140.72</td></tr><tr><td>100.75</td><td>-1.3</td><td>50.00</td><td>64.07</td><td>144.18</td></tr><tr><td>99.85</td><td>-0.5</td><td>50.00</td><td>25.16</td><td>206.36</td></tr><tr><td>99.80</td><td>-0.5</td><td>50.00</td><td>23.13</td><td>209.81</td></tr><tr><td>99.80</td><td>-0.5</td><td>50.00</td><td>23.13</td><td>209.81</td></tr><tr><td>99.75</td><td>-0.4</td><td>50.00</td><td>21.11</td><td>213.26</td></tr><tr><td>98.85</td><td>0.3</td><td>50.00</td><td>-14.17</td><td>275.44</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.80	-16.3	-	-	-	108.80	-16.3	-	-	-	108.80	-16.3	-	-	-	108.79	-16.3	-	-	-	108.79	-16.3	-	-	-	108.74	-16.2	-	-	-	107.85	-14.1	-	-	-	107.80	-14.0	-	-	-	107.80	-14.0	-	-	-	107.75	-13.8	-	-	-	107.50	-13.2	-	-	-	107.45	-13.1	-	-	-	107.45	-13.1	-	-	-	107.40	-13.0	-	-	-	106.85	-11.7	-	-	-	106.80	-11.6	-	-	-	106.80	-11.6	-	-	-	106.75	-11.5	-	-	-	105.80	-9.3	-	-	-	105.75	-9.2	-	-	-	105.75	-9.2	-	-	-	105.70	-9.1	-	-	-	105.55	-8.8	-	-	-	105.50	-8.7	-	-	-	105.50	-8.7	-	-	-	105.45	-8.6	-	-	-	104.80	-7.2	-	-	-	104.75	-7.1	-	-	-	104.75	-7.1	-	-	-	104.70	-7.0	-	-	-	103.99	-5.6	-	-	-	103.94	-5.5	-	-	-	103.94	-5.5	-	-	-	103.89	-5.5	-	-	-	103.80	-5.3	-	-	-	103.76	-5.2	-	-	-	103.76	-5.2	-	-	-	103.72	-5.1	-	-	-	103.72	-5.1	-	-	-	103.67	-5.1	-	-	-	102.89	-3.8	-	-	-	102.84	-3.7	-	-	-	102.84	-3.7	-	-	-	102.80	-3.7	-	-	-	102.80	-3.7	-	-	-	102.75	-3.6	-	-	-	102.75	-3.6	-	-	-	102.70	-3.5	-	-	-	102.60	-3.4	-	-	-	102.55	-3.3	0.00	0.00	0.00	102.55	-3.3	0.00	0.00	19.82	102.50	-3.3	0.00	0.00	23.27	101.85	-2.4	27.96	68.18	68.18	101.80	-2.4	27.96	66.53	71.63	101.80	-2.4	30.10	71.64	71.63	101.75	-2.3	30.10	69.88	75.09	100.85	-1.4	50.00	68.78	137.27	100.80	-1.3	50.00	66.42	140.72	100.80	-1.3	50.00	66.42	140.72	100.75	-1.3	50.00	64.07	144.18	99.85	-0.5	50.00	25.16	206.36	99.80	-0.5	50.00	23.13	209.81	99.80	-0.5	50.00	23.13	209.81	99.75	-0.4	50.00	21.11	213.26	98.85	0.3	50.00	-14.17	275.44
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98.85	0.3	50.00	-14.17	275.44																																																																																																																																																																																																																																																																																																																																																
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Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):									
Auftraggeber:		Stadtverwaltung Leipzig											
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>98.800.350.00-16.11278.90</div><div>98.800.350.00-16.11278.90</div><div>98.750.450.00-18.04282.35</div><div>98.600.550.00-23.84292.72</div><div>98.550.550.00-25.78296.17</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.04430074</div><div>Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 4.00 m</div><div>Profillänge = 10.25 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: $P_{v,k} + G'_{,k} + E_{av,k} \geq B_{v,k}$</div><div>$G_{,k} = 193.96 \text{ kN/m}$</div><div>$G'_{,k} = 0.00 \text{ kN/m}$</div><div>$P_{v,k} = 46.50 \text{ kN/m}$</div><div>$E_{av,k} = 58.80 \text{ kN/m}$ ($E_{ah,k} = 318.81 \text{ kN/m}$)</div><div>$B_{v,k} = 65.34$</div><div>Summe $V_{,k} = 233.92 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand $D = 0.88 \text{ m}$</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div><div>(gemittelt von 99.43 bis 95.91 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div><div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung</div><div><table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.55 m = $1.000 \text{ m}^2/\text{m}$ $\implies R_{s1,d}$</div><div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14 \text{ kN/m}$</div><div>$R_{,d} = R_{b,d} + R_{s1,d} = 1022.19 \text{ kN/m}$</div><div>Einwirkungen</div><div>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 261.85 - 0.00 + 74.97 + 62.78 = 399.60 \text{ kN/m}$</div><div>$\implies \mu = V_{,d} / R_{,d} = 399.60 / 1022.19 = 0.39$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>						von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung										
102.55	98.55	55.00	s3: Flussskies, -sand										
Schnitt:		Anlage J2	Schnitt 1L	Seite Anlage J2/34									
Kapitel:		6	LF 4 (BS-P, mit Lasten)	Archiv Nr.: 2004-0025									
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025									

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

7 LF 5 (BS-T, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 1
Datei: 16_BS 1_LF5 (10 kN_m², BS-T).vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 108.80 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	10.00	0.00	108.80	108.80	108.79	nein

Passivseite

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	29.50	105.50	102.55	Wasserdruck

Kraftränder

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-29.80	0.00	0.00	0.00	46.50	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 10.25 m

Schnitt:	Anlage J2	Schnitt 1L	Seite Anlage J2/35
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr. 12/35
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 187.384 / 278.847 = 0.672$
Bettungslager $B_{h,d} = 187.384 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 278.847 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N _d	N(g+q+w),k	N(g+w),k	N _{w,k}	EA	EI	N _{d'}
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-263.22	-227.11	-227.11	-50.10	3.900E+7	2.100E+7	-289.56 Steife

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max M_d [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-5.9	0.0	-263.68	0.00	0.00
-7.47	103.72	-5.9	0.0	-263.68	0.00	0.00
-7.47	103.72	-5.9	0.0	-263.68	0.00	0.00
-6.64	103.72	-5.9	0.0	-263.68	0.00	0.00
-5.81	103.72	-5.9	0.0	-263.68	0.00	0.00
-4.98	103.72	-5.9	0.0	-263.68	0.00	0.00
-4.15	103.72	-5.9	0.0	-263.68	0.00	0.00
-3.32	103.72	-5.9	0.0	-263.68	0.00	0.00
-2.49	103.72	-5.9	0.0	-263.68	0.00	0.00
-1.66	103.72	-5.9	0.1	-263.68	0.00	0.00
-0.83	103.72	-5.9	0.1	-263.68	0.00	0.00
0.00	103.72	-5.9	0.1	-263.68	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0051

Bodenkennwerte

Schicht	UK	gam',k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	103.94	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.84	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k _{agh}	k _{ach}	phi,k	delta	theta	k _{agh} (40°)
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	103.94	0.390	0.461	30.000	10.00	57.80	0.179
2	102.84	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ([g+q],k)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.800	108.794	0.000	3.941	0.00
108.794	107.800	3.941	11.301	0.00
107.800	107.450	11.301	13.892	0.00
107.450	106.800	13.892	18.705	0.00

Schnitt: Anlage J2	Schnitt 1L	Seite Anlage J2/36
Kapitel: 7	LF 5 (BS-T, mit Lasten)	Archiv Nr.: 21.06.2024
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																			
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<table><tr><td>106.800</td><td>105.750</td><td>18.705</td><td>26.479</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>26.479</td><td>28.330</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>104.750</td><td>28.330</td><td>31.252</td><td>0.00</td><td>7.50</td></tr><tr><td>104.750</td><td>103.940</td><td>31.252</td><td>34.409</td><td>7.50</td><td>15.60</td></tr><tr><td>103.940</td><td>103.760</td><td>42.539</td><td>43.304</td><td>15.60</td><td>17.40</td></tr><tr><td>103.760</td><td>103.720</td><td>43.304</td><td>43.475</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.840</td><td>43.475</td><td>47.219</td><td>17.80</td><td>26.60</td></tr><tr><td>102.840</td><td>102.750</td><td>34.828</td><td>35.197</td><td>26.60</td><td>27.50</td></tr><tr><td>102.750</td><td>102.550</td><td>35.197</td><td>36.017</td><td>27.50</td><td>29.50</td></tr><tr><td>102.550</td><td>101.800</td><td>36.017</td><td>39.094</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>39.094</td><td>43.197</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>43.197</td><td>47.300</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>47.300</td><td>51.403</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>51.403</td><td>52.429</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>52.429</td><td>128.508</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.75</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.80</td><td>-12.20</td><td>-44.08</td></tr><tr><td>101.80</td><td>100.80</td><td>-44.08</td><td>-86.60</td></tr><tr><td>100.80</td><td>99.80</td><td>-86.60</td><td>-129.11</td></tr><tr><td>99.80</td><td>98.80</td><td>-129.11</td><td>-171.63</td></tr><tr><td>98.80</td><td>98.55</td><td>-171.63</td><td>-182.26</td></tr><tr><td>98.55</td><td>80.00</td><td>-182.26</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.79</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.80</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-34.4</td><td>-13.8</td><td>-7.6</td><td></td></tr><tr><td>107.45</td><td>-90.2</td><td>-13.8</td><td>-43.3</td><td></td></tr><tr><td>106.80</td><td>-108.8</td><td>-26.0</td><td>-56.0</td><td></td></tr><tr><td>105.75</td><td>-141.6</td><td>-53.3</td><td>-96.8</td><td></td></tr><tr><td>105.50</td><td>-149.9</td><td>-61.1</td><td>-111.1</td><td></td></tr><tr><td>104.75</td><td>-175.6</td><td>-90.2</td><td>-167.3</td><td></td></tr><tr><td>103.94</td><td>-204.3</td><td>-132.0</td><td>-256.5</td><td></td></tr><tr><td>103.76</td><td>-210.6</td><td>-144.5</td><td>-281.4</td><td></td></tr><tr><td>103.72</td><td>-212.0</td><td>-147.3</td><td>-287.2</td><td>-263.7</td></tr><tr><td>103.72</td><td>-212.0</td><td>116.4</td><td>-287.2</td><td></td></tr><tr><td>102.84</td><td>-243.5</td><td>47.0</td><td>-214.4</td><td></td></tr><tr><td>102.75</td><td>-246.9</td><td>40.5</td><td>-210.4</td><td></td></tr><tr><td>102.55</td><td>-254.5</td><td>25.5</td><td>-203.8</td><td></td></tr><tr><td>101.80</td><td>-256.5</td><td>29.4</td><td>-186.2</td><td></td></tr><tr><td>100.80</td><td>-241.1</td><td>75.2</td><td>-132.5</td><td></td></tr><tr><td>99.80</td><td>-242.9</td><td>73.3</td><td>-53.7</td><td></td></tr><tr><td>98.80</td><td>-260.1</td><td>20.7</td><td>-2.7</td><td></td></tr><tr><td>98.55</td><td>-263.2</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.800	105.750	18.705	26.479	0.00	0.00	105.750	105.500	26.479	28.330	0.00	0.00	105.500	104.750	28.330	31.252	0.00	7.50	104.750	103.940	31.252	34.409	7.50	15.60	103.940	103.760	42.539	43.304	15.60	17.40	103.760	103.720	43.304	43.475	17.40	17.80	103.720	102.840	43.475	47.219	17.80	26.60	102.840	102.750	34.828	35.197	26.60	27.50	102.750	102.550	35.197	36.017	27.50	29.50	102.550	101.800	36.017	39.094	0.00	0.00	101.800	100.799	39.094	43.197	0.00	0.00	100.799	99.799	43.197	47.300	0.00	0.00	99.799	98.799	47.300	51.403	0.00	0.00	98.799	98.549	51.403	52.429	0.00	0.00	98.549	80.000	52.429	128.508	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.80	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.75	102.55	0.00	0.00	102.55	101.80	-12.20	-44.08	101.80	100.80	-44.08	-86.60	100.80	99.80	-86.60	-129.11	99.80	98.80	-129.11	-171.63	98.80	98.55	-171.63	-182.26	98.55	80.00	-182.26	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.80	0.0	0.0	0.0		108.79	-0.1	0.0	0.0		107.80	-24.9	-8.7	-3.6		107.45	-34.4	-13.8	-7.6		107.45	-90.2	-13.8	-43.3		106.80	-108.8	-26.0	-56.0		105.75	-141.6	-53.3	-96.8		105.50	-149.9	-61.1	-111.1		104.75	-175.6	-90.2	-167.3		103.94	-204.3	-132.0	-256.5		103.76	-210.6	-144.5	-281.4		103.72	-212.0	-147.3	-287.2	-263.7	103.72	-212.0	116.4	-287.2		102.84	-243.5	47.0	-214.4		102.75	-246.9	40.5	-210.4		102.55	-254.5	25.5	-203.8		101.80	-256.5	29.4	-186.2		100.80	-241.1	75.2	-132.5		99.80	-242.9	73.3	-53.7		98.80	-260.1	20.7	-2.7		98.55	-263.2	0.0	0.0	
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.80	-14.4	-	-	-	107.75	-14.2	-	-	-	107.50	-13.6	-	-	-	107.45	-13.5	-	-	-	107.45	-13.5	-	-	-	107.40	-13.4	-	-	-	106.85	-12.0	-	-	-	106.80	-11.9	-	-	-	106.80	-11.9	-	-	-	106.75	-11.8	-	-	-	105.80	-9.5	-	-	-	105.75	-9.4	-	-	-	105.75	-9.4	-	-	-	105.70	-9.3	-	-	-	105.55	-8.9	-	-	-	105.50	-8.8	-	-	-	105.50	-8.8	-	-	-	105.45	-8.7	-	-	-	104.80	-7.3	-	-	-	104.75	-7.2	-	-	-	104.75	-7.2	-	-	-	104.70	-7.1	-	-	-	103.99	-5.6	-	-	-	103.94	-5.6	-	-	-	103.94	-5.6	-	-	-	103.89	-5.5	-	-	-	103.80	-5.3	-	-	-	103.76	-5.2	-	-	-	103.76	-5.2	-	-	-	103.72	-5.1	-	-	-	103.72	-5.1	-	-	-	103.67	-5.1	-	-	-	102.89	-3.8	-	-	-	102.84	-3.7	-	-	-	102.84	-3.7	-	-	-	102.80	-3.7	-	-	-	102.80	-3.7	-	-	-	102.75	-3.6	-	-	-	102.75	-3.6	-	-	-	102.70	-3.5	-	-	-	102.60	-3.4	-	-	-	102.55	-3.3	0.00	0.00	0.00	102.55	-3.3	0.00	0.00	19.82	102.50	-3.2	0.00	0.00	23.27	101.85	-2.4	28.31	68.18	68.18	101.80	-2.3	28.31	66.52	71.63	101.80	-2.3	30.49	71.64	71.63	101.75	-2.3	30.49	69.87	75.09	100.85	-1.4	50.00	67.76	137.27	100.80	-1.3	50.00	65.43	140.72	100.80	-1.3	50.00	65.43	140.72	100.75	-1.3	50.00	63.13	144.18	99.85	-0.5	50.00	24.98	206.36	99.80	-0.5	50.00	23.00	209.81	99.80	-0.5	50.00	23.00	209.81	99.75	-0.4	50.00	21.03	213.26	98.85	0.3	50.00	-13.41	275.44
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101.85	-2.4	28.31	68.18	68.18																																																																																																																																																																																																																																																																																																																																													
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																															



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>98.800.350.00-15.30278.90</div><div>98.800.350.00-15.30278.90</div><div>98.750.350.00-17.18282.35</div><div>98.600.550.00-22.84292.72</div><div>98.550.550.00-24.73296.17</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.04321291</div><div>Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 4.00 m</div><div>Profillänge = 10.25 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: $P_{v,k} + G'_{,k} + E_{av,k} \geq B_{v,k}$</div><div>$G_{,k} = 193.96 \text{ kN/m}$</div><div>$G'_{,k} = 0.00 \text{ kN/m}$</div><div>$P_{v,k} = 46.50 \text{ kN/m}$</div><div>$E_{av,k} = 62.42 \text{ kN/m}$ ($E_{ah,k} = 338.68 \text{ kN/m}$)</div><div>$B_{v,k} = 64.87$</div><div>Summe $V_{,k} = 238.01 \text{ kN/m}$ (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand $D = 0.88 \text{ m}$</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div><div>(gemittelt von 99.43 bis 95.91 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div><div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div><div>Mantelreibung</div><div><table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.55 m = $1.000 \text{ m}^2/\text{m}$ $\implies R_{s1,d}$</div><div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14 \text{ kN/m}$</div><div>$R_{,d} = R_{b,d} + R_{s1,d} = 1022.19 \text{ kN/m}$</div><div>Einwirkungen</div><div>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 232.75 - 0.00 + 71.78 + 55.80 = 360.33 \text{ kN/m}$</div><div>$\implies \mu = V_{,d} / R_{,d} = 360.33 / 1022.19 = 0.35$</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	98.55	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J2 Schnitt 1L		Seite Anlage J2/40								
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage K2 Schnitt 2L</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 10_BS 2_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><thead><tr><th>Nr.</th><th>x1</th><th>x2</th><th>dh</th><th>a</th><th>x</th><th>y</th><th>Auflast</th><th>Verkehr</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[kN/m²]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>0.00</td><td>1.35</td><td>1.35</td><td>0.00</td><td>0.00</td><td>0.74</td><td>0.00</td><td>nein</td></tr></tbody></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</p> <p>Bettungsmodule</p> <table><thead><tr><th>von</th><th>bis</th><th>ks(oben)</th><th>ks(unten)</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[MN/m³]</th><th>[MN/m³]</th></tr></thead><tbody><tr><td>106.00</td><td>105.09</td><td>10.000</td><td>10.000</td></tr><tr><td>105.09</td><td>102.69</td><td>5.000</td><td>5.000</td></tr><tr><td>102.69</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></tbody></table> <p>Ausnutzungsgrad mue = 376.959 / 1089.505 = 0.346 Bettungslager Bh,d = 376.959 kN/m Erdwiderstand Eph,d = 1089.505 kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.00	1.35	1.35	0.00	0.00	0.74	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.09	10.000	10.000	105.09	102.69	5.000	5.000	102.69	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.00	1.35	1.35	0.00	0.00	0.74	0.00	nein																																									
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106.00	105.09	10.000	10.000																																														
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Schnitt:	Anlage K2 Schnitt 2L	Seite Anlage K2/19.																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 19. für Standsicherheit																																															
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <p>Beziehung: (1 - Faktor) · kah + Faktor · k0</p> <p>Faktor [-] = 0.50</p> <p>Ersatzerddruck-Beiwert mit phi = 40 °</p> <p>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</p> <p>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</p> <p>bestimmt nach:</p> <p>(Erddruckbeiwerte für horizontales Gelände)</p> <p>Wandreibung angepasst.</p> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.707</td><td>0.000</td><td>15.498</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>15.499</td><td>17.769</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>106.000</td><td>17.769</td><td>20.731</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>20.731</td><td>24.433</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.449</td><td>24.433</td><td>24.633</td><td>0.00</td><td>0.51</td></tr><tr><td>105.449</td><td>105.090</td><td>24.633</td><td>26.031</td><td>0.51</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>31.776</td><td>32.159</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.448</td><td>32.159</td><td>34.509</td><td>5.00</td><td>5.00</td></tr><tr><td>104.448</td><td>103.443</td><td>34.509</td><td>38.783</td><td>5.00</td><td>5.00</td></tr><tr><td>103.443</td><td>102.690</td><td>38.783</td><td>41.988</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.441</td><td>31.101</td><td>32.124</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>101.991</td><td>32.124</td><td>33.966</td><td>5.00</td><td>5.00</td></tr><tr><td>101.991</td><td>101.443</td><td>33.966</td><td>36.217</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>36.217</td><td>40.310</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.447</td><td>40.310</td><td>44.403</td><td>5.00</td><td>5.00</td></tr><tr><td>99.447</td><td>98.549</td><td>44.403</td><td>48.086</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>48.086</td><td>124.166</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <p>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <p>bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.09</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.69</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <p>Teilsicherheit Erdwiderstand = 1.30</p> <p>Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.40</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.26</td></tr><tr><td>105.45</td><td>105.09</td><td>-32.26</td><td>-53.25</td></tr><tr><td>105.09</td><td>105.00</td><td>-39.50</td><td>-42.35</td></tr><tr><td>105.00</td><td>104.45</td><td>-42.35</td><td>-51.12</td></tr><tr><td>104.45</td><td>103.44</td><td>-51.12</td><td>-67.06</td></tr><tr><td>103.44</td><td>102.69</td><td>-67.06</td><td>-79.01</td></tr><tr><td>102.69</td><td>102.44</td><td>-142.12</td><td>-152.73</td></tr></table>						Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.707	0.000	15.498	0.00	0.00	106.707	106.400	15.499	17.769	0.00	0.00	106.400	106.000	17.769	20.731	0.00	0.00	106.000	105.500	20.731	24.433	0.00	0.00	105.500	105.449	24.433	24.633	0.00	0.51	105.449	105.090	24.633	26.031	0.51	4.10	105.090	105.000	31.776	32.159	4.10	5.00	105.000	104.448	32.159	34.509	5.00	5.00	104.448	103.443	34.509	38.783	5.00	5.00	103.443	102.690	38.783	41.988	5.00	5.00	102.690	102.441	31.101	32.124	5.00	5.00	102.441	101.991	32.124	33.966	5.00	5.00	101.991	101.443	33.966	36.217	5.00	5.00	101.443	100.445	36.217	40.310	5.00	5.00	100.445	99.447	40.310	44.403	5.00	5.00	99.447	98.549	44.403	48.086	5.00	5.00	98.549	80.000	48.086	124.166	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.09	5.005	5.388	30.000	-20.01	18.10	2	102.69	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.40	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.26	105.45	105.09	-32.26	-53.25	105.09	105.00	-39.50	-42.35	105.00	104.45	-42.35	-51.12	104.45	103.44	-51.12	-67.06	103.44	102.69	-67.06	-79.01	102.69	102.44	-142.12	-152.73	<div>Schnitt: Anlage K2 Schnitt 2L</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage K2/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																										
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statisch geprüft

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Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																				
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<div>102.44 101.99 -152.73 -171.81</div> <div>101.99 101.44 -171.81 -195.14</div> <div>101.44 100.44 -195.14 -237.55</div> <div>100.44 99.45 -237.55 -279.96</div> <div>99.45 98.55 -279.96 -318.14</div> <div>98.55 80.00 -318.14 -1106.50</div> <div>Schnittgrößen (Bemessungswerte)</div> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.71</td><td>-18.6</td><td>-6.6</td><td>-1.6</td></tr><tr><td>106.40</td><td>-27.4</td><td>-12.5</td><td>-4.6</td></tr><tr><td>106.00</td><td>-39.3</td><td>-21.3</td><td>-11.3</td></tr><tr><td>105.50</td><td>-46.1</td><td>-22.0</td><td>-23.2</td></tr><tr><td>105.45</td><td>-46.2</td><td>-20.7</td><td>-24.3</td></tr><tr><td>105.09</td><td>-45.7</td><td>-9.2</td><td>-29.6</td></tr><tr><td>105.00</td><td>-46.9</td><td>-10.2</td><td>-30.4</td></tr><tr><td>104.45</td><td>-54.7</td><td>-18.7</td><td>-38.2</td></tr><tr><td>103.44</td><td>-70.2</td><td>-43.3</td><td>-68.4</td></tr><tr><td>102.69</td><td>-82.9</td><td>-69.1</td><td>-110.3</td></tr><tr><td>102.44</td><td>-73.3</td><td>-41.8</td><td>-124.1</td></tr><tr><td>101.99</td><td>-59.4</td><td>-1.7</td><td>-133.4</td></tr><tr><td>101.44</td><td>-47.8</td><td>32.4</td><td>-124.3</td></tr><tr><td>100.44</td><td>-39.6</td><td>58.0</td><td>-75.6</td></tr><tr><td>99.45</td><td>-45.4</td><td>43.7</td><td>-21.7</td></tr><tr><td>98.55</td><td>-61.1</td><td>0.0</td><td>0.0</td></tr></table> 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<table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.99</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></tbody></table> <div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.76</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-6.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-6.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-6.5</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-6.0</td><td>7.14</td><td>42.79</td><td>42.79</td></tr><tr><td>105.50</td><td>-5.9</td><td>7.14</td><td>42.36</td><td>47.55</td></tr><tr><td>105.50</td><td>-5.9</td><td>8.01</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-5.9</td><td>8.01</td><td>47.05</td><td>52.42</td></tr><tr><td>105.45</td><td>-5.9</td><td>8.93</td><td>52.42</td><td>52.42</td></tr><tr><td>105.40</td><td>-5.8</td><td>8.93</td><td>51.87</td><td>57.30</td></tr><tr><td>105.14</td><td>-5.5</td><td>10.00</td><td>55.00</td><td>81.67</td></tr><tr><td>105.09</td><td>-5.4</td><td>10.00</td><td>54.39</td><td>86.54</td></tr><tr><td>105.09</td><td>-5.4</td><td>5.00</td><td>27.19</td><td>64.18</td></tr><tr><td>105.05</td><td>-5.4</td><td>5.00</td><td>26.92</td><td>66.50</td></tr><tr><td>105.05</td><td>-5.4</td><td>5.00</td><td>26.92</td><td>66.50</td></tr><tr><td>105.00</td><td>-5.3</td><td>5.00</td><td>26.66</td><td>68.82</td></tr><tr><td>105.00</td><td>-5.3</td><td>5.00</td><td>26.66</td><td>68.82</td></tr><tr><td>104.95</td><td>-5.3</td><td>5.00</td><td>26.36</td><td>70.12</td></tr><tr><td>104.50</td><td>-4.7</td><td>5.00</td><td>23.69</td><td>81.77</td></tr><tr><td>104.45</td><td>-4.7</td><td>5.00</td><td>23.40</td><td>83.07</td></tr><tr><td>104.45</td><td>-4.7</td><td>5.00</td><td>23.40</td><td>83.07</td></tr><tr><td>104.40</td><td>-4.6</td><td>5.00</td><td>23.10</td><td>84.36</td></tr><tr><td>103.49</td><td>-3.6</td><td>5.00</td><td>17.99</td><td>107.67</td></tr><tr><td>103.44</td><td>-3.5</td><td>5.00</td><td>17.71</td><td>108.97</td></tr><tr><td>103.44</td><td>-3.5</td><td>5.00</td><td>17.71</td><td>108.97</td></tr><tr><td>103.39</td><td>-3.5</td><td>5.00</td><td>17.44</td><td>110.26</td></tr><tr><td>102.74</td><td>-2.8</td><td>5.00</td><td>14.02</td><td>127.09</td></tr><tr><td>102.69</td><td>-2.8</td><td>5.00</td><td>13.77</td><td>128.39</td></tr><tr><td>102.69</td><td>-2.8</td><td>50.00</td><td>137.74</td><td>230.95</td></tr><tr><td>102.64</td><td>-2.7</td><td>50.00</td><td>135.28</td><td>234.40</td></tr><tr><td>102.49</td><td>-2.6</td><td>50.00</td><td>128.00</td><td>244.74</td></tr><tr><td>102.44</td><td>-2.5</td><td>50.00</td><td>125.62</td><td>248.18</td></tr><tr><td>102.44</td><td>-2.5</td><td>50.00</td><td>125.62</td><td>248.18</td></tr><tr><td>102.39</td><td>-2.5</td><td>50.00</td><td>123.27</td><td>251.63</td></tr><tr><td>102.04</td><td>-2.1</td><td>50.00</td><td>107.43</td><td>275.75</td></tr><tr><td>101.99</td><td>-2.1</td><td>50.00</td><td>105.27</td><td>279.20</td></tr></tbody></table>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	0.0	0.0	0.0	106.40	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.09	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.45	0.0	0.0	0.0	103.44	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.44	0.0	0.0	0.0	101.99	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.55	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.3	-	-	-	107.40	-8.3	-	-	-	106.76	-7.5	-	-	-	106.71	-7.4	-	-	-	106.71	-7.4	-	-	-	106.66	-7.4	-	-	-	106.45	-7.1	-	-	-	106.40	-7.0	-	-	-	106.40	-7.0	-	-	-	106.35	-7.0	-	-	-	106.05	-6.6	-	-	-	106.00	-6.5	0.00	0.00	0.00	106.00	-6.5	0.00	0.00	0.00	105.95	-6.5	0.00	0.00	4.75	105.55	-6.0	7.14	42.79	42.79	105.50	-5.9	7.14	42.36	47.55	105.50	-5.9	8.01	47.55	47.55	105.45	-5.9	8.01	47.05	52.42	105.45	-5.9	8.93	52.42	52.42	105.40	-5.8	8.93	51.87	57.30	105.14	-5.5	10.00	55.00	81.67	105.09	-5.4	10.00	54.39	86.54	105.09	-5.4	5.00	27.19	64.18	105.05	-5.4	5.00	26.92	66.50	105.05	-5.4	5.00	26.92	66.50	105.00	-5.3	5.00	26.66	68.82	105.00	-5.3	5.00	26.66	68.82	104.95	-5.3	5.00	26.36	70.12	104.50	-4.7	5.00	23.69	81.77	104.45	-4.7	5.00	23.40	83.07	104.45	-4.7	5.00	23.40	83.07	104.40	-4.6	5.00	23.10	84.36	103.49	-3.6	5.00	17.99	107.67	103.44	-3.5	5.00	17.71	108.97	103.44	-3.5	5.00	17.71	108.97	103.39	-3.5	5.00	17.44	110.26	102.74	-2.8	5.00	14.02	127.09	102.69	-2.8	5.00	13.77	128.39	102.69	-2.8	50.00	137.74	230.95	102.64	-2.7	50.00	135.28	234.40	102.49	-2.6	50.00	128.00	244.74	102.44	-2.5	50.00	125.62	248.18	102.44	-2.5	50.00	125.62	248.18	102.39	-2.5	50.00	123.27	251.63	102.04	-2.1	50.00	107.43	275.75	101.99	-2.1	50.00	105.27	279.20
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Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																												
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>101.99-2.150.00105.27279.20</div><div>101.94-2.150.00103.12282.64</div><div>101.49-1.750.0084.94313.66</div><div>101.44-1.750.0083.04317.10</div><div>101.44-1.750.0083.04317.10</div><div>101.39-1.650.0081.16320.55</div><div>100.49-1.050.0050.80382.58</div><div>100.44-1.050.0049.28386.02</div><div>100.44-1.050.0049.28386.02</div><div>100.39-1.050.0047.77389.47</div><div>99.50-0.450.0022.38451.50</div><div>99.45-0.450.0021.03454.94</div><div>99.45-0.450.0021.03454.94</div><div>99.40-0.450.0019.69458.39</div><div>98.600.050.00-1.47513.53</div><div>98.550.150.00-2.79516.97</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.03024781</div><div>Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 7.45 m</div><div>Profillänge = 8.90 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div><div>G,k = 168.41 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 51.77 kN/m (Eah,k = 292.68 kN/m)</div><div>Bv,k = 122.32</div><div>Summe V,k = 97.87 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältnisswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung</div><div><div><div>vonbisqs,k [kN/m²]Bezeichnung</div><div>106.00105.090.00S1: Auffüllungen</div><div>105.09102.690.00S2: Auelehm</div><div>102.6998.5555.00s3: Flusskies, -sand</div></div><div>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 227.70 / 1.40 = 162.64 kN/m</div><div>R,d = Rb,d + R,s1,d = 1027.69 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 202.10 - 0.00 + 59.54 + 0.00 = 261.64 kN/m</div><div>==> µ = V,d / R,d = 261.64 / 1027.69 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div></div>		
Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/5
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft

12/15

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																															
Auftraggeber: Stadtverwaltung Leipzig																																																	
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div><div>2</div><div>LF 1.2 (BS-T, mit Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 11_BS 2_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 107.45 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 106.00 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><th>Nr.</th><th>x1</th><th>x2</th><th>dh</th><th>a</th><th>x</th><th>y</th><th>Auflast</th><th>Verkehr</th></tr><tr><th>[-]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[m]</th><th>[kN/m²]</th><th>[-]</th></tr><tr><td>1</td><td>0.00</td><td>1.35</td><td>1.35</td><td>0.00</td><td>0.00</td><td>0.74</td><td>10.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</p> <p>Bettungsmodule</p> <table><tr><th>von</th><th>bis</th><th>ks(oben)</th><th>ks(unten)</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[MN/m³]</th><th>[MN/m³]</th></tr><tr><td>106.00</td><td>105.09</td><td>10.000</td><td>10.000</td></tr><tr><td>105.09</td><td>102.69</td><td>5.000</td><td>5.000</td></tr><tr><td>102.69</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad $\mu_e = 418.603 / 1027.705 = 0.407$ Bettungslager $B_{h,d} = 418.603$ kN/m Erdwiderstand $E_{ph,d} = 1027.705$ kN/m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.00	1.35	1.35	0.00	0.00	0.74	10.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	106.00	105.09	10.000	10.000	105.09	102.69	5.000	5.000	102.69	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																									
1	0.00	1.35	1.35	0.00	0.00	0.74	10.00	nein																																									
von	bis	ks(oben)	ks(unten)																																														
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.09	10.000	10.000																																														
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Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/6																																															
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 11																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																															

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																															
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<div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c(pas),k</td><td>c(akt),k</td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td colspan="2">[kN/m²]</td></tr><tr><td>107.450</td><td>106.707</td><td>0.000</td><td>19.395</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>19.395</td><td>21.666</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>106.000</td><td>21.666</td><td>24.628</td><td>0.00</td><td>0.00</td></tr><tr><td>106.000</td><td>105.500</td><td>24.628</td><td>28.330</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.449</td><td>28.330</td><td>28.529</td><td>0.00</td><td>0.51</td></tr><tr><td>105.449</td><td>105.090</td><td>28.529</td><td>29.927</td><td>0.51</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>36.782</td><td>37.165</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.448</td><td>37.165</td><td>39.515</td><td>5.00</td><td>5.00</td></tr><tr><td>104.448</td><td>103.443</td><td>39.515</td><td>43.789</td><td>5.00</td><td>5.00</td></tr><tr><td>103.443</td><td>102.690</td><td>43.789</td><td>46.994</td><td>5.00</td><td>5.00</td></tr><tr><td>102.690</td><td>102.441</td><td>34.667</td><td>35.691</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>101.991</td><td>35.691</td><td>37.532</td><td>5.00</td><td>5.00</td></tr><tr><td>101.991</td><td>101.443</td><td>37.532</td><td>39.783</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>39.783</td><td>43.876</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.447</td><td>43.876</td><td>47.969</td><td>5.00</td><td>5.00</td></tr><tr><td>99.447</td><td>98.549</td><td>47.969</td><td>51.653</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>51.653</td><td>127.732</td><td>5.00</td><td>5.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>106.00</td></tr></table> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.09</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.69</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.40</td><td>106.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>105.50</td><td>0.00</td><td>-29.26</td></tr><tr><td>105.50</td><td>105.45</td><td>-29.26</td><td>-32.26</td></tr><tr><td>105.45</td><td>105.09</td><td>-32.26</td><td>-53.25</td></tr><tr><td>105.09</td><td>105.00</td><td>-39.50</td><td>-42.35</td></tr><tr><td>105.00</td><td>104.45</td><td>-42.35</td><td>-51.12</td></tr><tr><td>104.45</td><td>103.44</td><td>-51.12</td><td>-67.06</td></tr><tr><td>103.44</td><td>102.69</td><td>-67.06</td><td>-79.01</td></tr><tr><td>102.69</td><td>102.44</td><td>-142.12</td><td>-152.73</td></tr></table>			Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]		107.450	106.707	0.000	19.395	0.00	0.00	106.707	106.400	19.395	21.666	0.00	0.00	106.400	106.000	21.666	24.628	0.00	0.00	106.000	105.500	24.628	28.330	0.00	0.00	105.500	105.449	28.330	28.529	0.00	0.51	105.449	105.090	28.529	29.927	0.51	4.10	105.090	105.000	36.782	37.165	4.10	5.00	105.000	104.448	37.165	39.515	5.00	5.00	104.448	103.443	39.515	43.789	5.00	5.00	103.443	102.690	43.789	46.994	5.00	5.00	102.690	102.441	34.667	35.691	5.00	5.00	102.441	101.991	35.691	37.532	5.00	5.00	101.991	101.443	37.532	39.783	5.00	5.00	101.443	100.445	39.783	43.876	5.00	5.00	100.445	99.447	43.876	47.969	5.00	5.00	99.447	98.549	47.969	51.653	5.00	5.00	98.549	80.000	51.653	127.732	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	106.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.09	5.005	5.388	30.000	-20.01	18.10	2	102.69	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.40	106.00	0.00	0.00	106.00	105.50	0.00	-29.26	105.50	105.45	-29.26	-32.26	105.45	105.09	-32.26	-53.25	105.09	105.00	-39.50	-42.35	105.00	104.45	-42.35	-51.12	104.45	103.44	-51.12	-67.06	103.44	102.69	-67.06	-79.01	102.69	102.44	-142.12	-152.73	<div>Schnitt: Anlage K2 Schnitt 2L</div> <div>Kapitel: 2 LF 1.2 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage K2/7</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k																																																																																																																																																																																																																																																																																																							
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																							
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																																							
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																																							
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																							
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																										
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																										
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																																										
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																										
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																										
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107.450	106.707	0.000	19.395	0.00	0.00																																																																																																																																																																																																																																																																																																												
106.707	106.400	19.395	21.666	0.00	0.00																																																																																																																																																																																																																																																																																																												
106.400	106.000	21.666	24.628	0.00	0.00																																																																																																																																																																																																																																																																																																												
106.000	105.500	24.628	28.330	0.00	0.00																																																																																																																																																																																																																																																																																																												
105.500	105.449	28.330	28.529	0.00	0.51																																																																																																																																																																																																																																																																																																												
105.449	105.090	28.529	29.927	0.51	4.10																																																																																																																																																																																																																																																																																																												
105.090	105.000	36.782	37.165	4.10	5.00																																																																																																																																																																																																																																																																																																												
105.000	104.448	37.165	39.515	5.00	5.00																																																																																																																																																																																																																																																																																																												
104.448	103.443	39.515	43.789	5.00	5.00																																																																																																																																																																																																																																																																																																												
103.443	102.690	43.789	46.994	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.690	102.441	34.667	35.691	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.441	101.991	35.691	37.532	5.00	5.00																																																																																																																																																																																																																																																																																																												
101.991	101.443	37.532	39.783	5.00	5.00																																																																																																																																																																																																																																																																																																												
101.443	100.445	39.783	43.876	5.00	5.00																																																																																																																																																																																																																																																																																																												
100.445	99.447	43.876	47.969	5.00	5.00																																																																																																																																																																																																																																																																																																												
99.447	98.549	47.969	51.653	5.00	5.00																																																																																																																																																																																																																																																																																																												
98.549	80.000	51.653	127.732	5.00	5.00																																																																																																																																																																																																																																																																																																												
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1	105.09	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																																																																																											
2	102.69	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																											
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																											
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106.40	106.00	0.00	0.00																																																																																																																																																																																																																																																																																																														
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105.09	105.00	-39.50	-42.35																																																																																																																																																																																																																																																																																																														
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104.45	103.44	-51.12	-67.06																																																																																																																																																																																																																																																																																																														
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102.69	102.44	-142.12	-152.73																																																																																																																																																																																																																																																																																																														

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>102.44101.99-152.73-171.81</div><div>101.99101.44-171.81-195.14</div><div>101.44100.44-195.14-237.55</div><div>100.4499.45-237.55-279.96</div><div>99.4598.55-279.96-318.14</div><div>98.5580.00-318.14-1106.50</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-19.3-8.5-2.1</div><div>106.40-28.6-15.7-5.8</div><div>106.00-41.2-26.4-14.2</div><div>105.50-48.0-29.3-29.2</div><div>105.45-48.1-28.2-30.6</div><div>105.09-46.6-15.5-38.6</div><div>105.00-47.7-16.5-40.0</div><div>104.45-54.6-25.2-51.4</div><div>103.44-69.0-51.3-88.7</div><div>102.69-81.1-79.1-137.4</div><div>102.44-69.1-46.7-153.0</div><div>101.99-51.60.5-162.9</div><div>101.44-36.740.6-150.7</div><div>100.44-25.370.3-91.0</div><div>99.45-30.952.5-26.1</div><div>98.55-47.20.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-16.8-7.4-1.8</div><div>106.40-24.9-13.7-5.1</div><div>106.00-35.8-22.9-12.3</div><div>105.50-41.8-25.5-25.4</div><div>105.45-41.9-24.6-26.6</div><div>105.09-40.5-13.6-33.6</div><div>105.00-41.5-14.4-34.9</div><div>104.45-47.5-21.9-44.7</div><div>103.44-60.0-44.4-77.1</div><div>102.69-70.5-68.5-119.3</div><div>102.44-60.1-40.5-132.8</div><div>101.99-44.90.5-141.3</div><div>101.44-31.935.3-130.8</div><div>100.44-22.061.0-79.0</div><div>99.45-26.945.5-22.6</div><div>98.55-41.10.00.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>107.450.00.00.0</div><div>106.71-16.8-7.4-1.8</div><div>106.40-24.9-13.7-5.1</div><div>106.00-35.8-22.9-12.3</div><div>105.50-41.8-25.5-25.4</div><div>105.45-41.9-24.6-26.6</div><div>105.09-40.5-13.6-33.6</div><div>105.00-41.5-14.4-34.9</div><div>104.45-47.5-21.9-44.7</div><div>103.44-60.0-44.4-77.1</div><div>102.69-70.5-68.5-119.3</div><div>102.44-60.1-40.5-132.8</div><div>101.99-44.90.5-141.3</div><div>101.44-31.935.3-130.8</div><div>100.44-22.061.0-79.0</div><div>99.45-26.945.5-22.6</div><div>98.55-41.10.00.0</div></div></div></div>					
Schnitt: Anlage K2 Schnitt 2L				Seite Anlage K2/8	
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.: 2004-0025	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																												
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																												
<div>Schnittgrößen (q,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.99</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></tbody></table> <div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-7.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-7.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-7.8</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-7.2</td><td>5.97</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-7.1</td><td>5.97</td><td>42.35</td><td>47.55</td></tr><tr><td>105.50</td><td>-7.1</td><td>6.70</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-7.0</td><td>6.70</td><td>47.04</td><td>52.42</td></tr><tr><td>105.45</td><td>-7.0</td><td>7.47</td><td>52.43</td><td>52.42</td></tr><tr><td>105.40</td><td>-6.9</td><td>7.47</td><td>51.85</td><td>57.30</td></tr><tr><td>105.14</td><td>-6.6</td><td>10.00</td><td>65.61</td><td>81.67</td></tr><tr><td>105.09</td><td>-6.5</td><td>10.00</td><td>64.86</td><td>86.54</td></tr><tr><td>105.09</td><td>-6.5</td><td>5.00</td><td>32.43</td><td>64.18</td></tr><tr><td>105.05</td><td>-6.4</td><td>5.00</td><td>32.10</td><td>66.50</td></tr><tr><td>105.05</td><td>-6.4</td><td>5.00</td><td>32.10</td><td>66.50</td></tr><tr><td>105.00</td><td>-6.4</td><td>5.00</td><td>31.77</td><td>68.82</td></tr><tr><td>105.00</td><td>-6.4</td><td>5.00</td><td>31.77</td><td>68.82</td></tr><tr><td>104.95</td><td>-6.3</td><td>5.00</td><td>31.40</td><td>70.12</td></tr><tr><td>104.50</td><td>-5.6</td><td>5.00</td><td>28.12</td><td>81.77</td></tr><tr><td>104.45</td><td>-5.6</td><td>5.00</td><td>27.76</td><td>83.07</td></tr><tr><td>104.45</td><td>-5.6</td><td>5.00</td><td>27.76</td><td>83.07</td></tr><tr><td>104.40</td><td>-5.5</td><td>5.00</td><td>27.40</td><td>84.36</td></tr><tr><td>103.49</td><td>-4.2</td><td>5.00</td><td>21.14</td><td>107.67</td></tr><tr><td>103.44</td><td>-4.2</td><td>5.00</td><td>20.81</td><td>108.97</td></tr><tr><td>103.44</td><td>-4.2</td><td>5.00</td><td>20.81</td><td>108.97</td></tr><tr><td>103.39</td><td>-4.1</td><td>5.00</td><td>20.48</td><td>110.26</td></tr><tr><td>102.74</td><td>-3.3</td><td>5.00</td><td>16.32</td><td>127.09</td></tr><tr><td>102.69</td><td>-3.2</td><td>5.00</td><td>16.02</td><td>128.39</td></tr><tr><td>102.69</td><td>-3.2</td><td>50.00</td><td>160.17</td><td>230.95</td></tr><tr><td>102.64</td><td>-3.1</td><td>50.00</td><td>157.18</td><td>234.40</td></tr><tr><td>102.49</td><td>-3.0</td><td>50.00</td><td>148.35</td><td>244.74</td></tr><tr><td>102.44</td><td>-2.9</td><td>50.00</td><td>145.46</td><td>248.18</td></tr><tr><td>102.44</td><td>-2.9</td><td>50.00</td><td>145.46</td><td>248.18</td></tr><tr><td>102.39</td><td>-2.9</td><td>50.00</td><td>142.60</td><td>251.63</td></tr><tr><td>102.04</td><td>-2.5</td><td>50.00</td><td>123.39</td><td>275.75</td></tr><tr><td>101.99</td><td>-2.4</td><td>50.00</td><td>120.76</td><td>279.20</td></tr></tbody></table>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	0.0	0.0	0.0	106.40	0.0	0.0	0.0	106.00	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.45	0.0	0.0	0.0	105.09	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.45	0.0	0.0	0.0	103.44	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.44	0.0	0.0	0.0	101.99	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.55	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-10.0	-	-	-	107.40	-10.0	-	-	-	106.75	-9.0	-	-	-	106.71	-8.9	-	-	-	106.71	-8.9	-	-	-	106.66	-8.8	-	-	-	106.45	-8.5	-	-	-	106.40	-8.5	-	-	-	106.40	-8.5	-	-	-	106.35	-8.4	-	-	-	106.05	-7.9	-	-	-	106.00	-7.8	0.00	0.00	0.00	106.00	-7.8	0.00	0.00	0.00	105.95	-7.8	0.00	0.00	4.75	105.55	-7.2	5.97	42.80	42.79	105.50	-7.1	5.97	42.35	47.55	105.50	-7.1	6.70	47.55	47.55	105.45	-7.0	6.70	47.04	52.42	105.45	-7.0	7.47	52.43	52.42	105.40	-6.9	7.47	51.85	57.30	105.14	-6.6	10.00	65.61	81.67	105.09	-6.5	10.00	64.86	86.54	105.09	-6.5	5.00	32.43	64.18	105.05	-6.4	5.00	32.10	66.50	105.05	-6.4	5.00	32.10	66.50	105.00	-6.4	5.00	31.77	68.82	105.00	-6.4	5.00	31.77	68.82	104.95	-6.3	5.00	31.40	70.12	104.50	-5.6	5.00	28.12	81.77	104.45	-5.6	5.00	27.76	83.07	104.45	-5.6	5.00	27.76	83.07	104.40	-5.5	5.00	27.40	84.36	103.49	-4.2	5.00	21.14	107.67	103.44	-4.2	5.00	20.81	108.97	103.44	-4.2	5.00	20.81	108.97	103.39	-4.1	5.00	20.48	110.26	102.74	-3.3	5.00	16.32	127.09	102.69	-3.2	5.00	16.02	128.39	102.69	-3.2	50.00	160.17	230.95	102.64	-3.1	50.00	157.18	234.40	102.49	-3.0	50.00	148.35	244.74	102.44	-2.9	50.00	145.46	248.18	102.44	-2.9	50.00	145.46	248.18	102.39	-2.9	50.00	142.60	251.63	102.04	-2.5	50.00	123.39	275.75	101.99	-2.4	50.00	120.76	279.20
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner

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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																							
<div><div>3 LF 2.1 (BS-T, ohne Lasten)</div><div><div>GGU-RETAIN / Version 12.00 / 01.02.2024</div><div>Bohrpfahlwand</div><div>=====</div><div>Teilsicherheitskonzept (EC 7)</div><div>EMG TBA 3.2 - Schnitt 2</div><div>Datei: 12_BS 2_LF2.1 (ohne Lasten).vrb</div><div>Datum: 20.06.2024</div></div><div><div>Indices:</div><div>d = Bemessungswert</div><div>k = charakteristisch</div><div>g = Ständig, einschließlich Wasserdruck</div><div>q = Veränderlich</div><div>g+q = Ständig + Veränderlich, einschließlich Wasserdruck</div><div>w = Wasserdruck</div></div><div><div>Wandkopf = 107.45 mNHN</div><div>Maximale Teilung bis Baugrubensohle: 0.050 m</div><div>Maximale Teilung unter Baugrubensohle: 0.050 m</div><div>Baugrubensohle = 102.55 mNHN</div><div>Bohrpfahldurchmesser = 0.88 m</div><div>Bohrpfahlabstand = 1.50 m</div><div>Anzahl unbew. Pfähle = 1</div><div>Grundwasserstand (Erdseite) = 105.50 mNHN</div><div>Grundwasserstand (Luftseite) = 105.00 mNHN</div><div>Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div><div>Teilsicherheiten</div><div>BS: DIN EN 1997-1: BS-T</div><div>gamma(G) = 1.20</div><div>gamma(G,Ruhe) = 1.10</div><div>gamma(Q) = 1.30</div><div>gamma(Ep) = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div>Bermen auf der Aktivseite</div><div><table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>1.35</td><td>1.35</td><td>0.00</td><td>0.00</td><td>0.74</td><td>0.00</td><td>nein</td></tr></table></div><div>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet.</div><div>Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich.</div><div>Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div><div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div><div>Art des Fußlagers:</div><div>Profillänge automatisch und Fuß gebettet</div><div>Profillänge = 8.90 m</div><div>Bettungsmodule</div><div><table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table></div><div>Ausnutzungsgrad $\mu_e = 269.047 / 315.139 = 0.854$</div><div>Bettungslager $B_{h,d} = 269.047$ kN/m</div><div>Erdwiderstand $E_{ph,d} = 315.139$ kN/m</div></div></div>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	0.00	1.35	1.35	0.00	0.00	0.74	0.00	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																	
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Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr. 2004-0025																																							
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Statistisch geprüft für Standsicherheit

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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																								
<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-108.71</td><td>-94.18</td><td>-94.18</td><td>-8.07</td><td>6.900E+4</td><td>2.100E+7</td><td>-120.08</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.3</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.1</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.3</td><td>0.0</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.4</td><td>0.1</td><td>-108.71</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 2\Linkes Ufer\10_BS 2_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0077</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>29.635</td><td>29.635</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.707</td><td>29.635</td><td>29.635</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>29.635</td><td>29.635</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>105.500</td><td>29.635</td><td>29.635</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>29.635</td><td>29.635</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.090</td><td>29.635</td><td>29.635</td><td>0.50</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>29.635</td><td>29.635</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.690</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-108.71	-94.18	-94.18	-8.07	6.900E+4	2.100E+7	-120.08	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.9	0.0	-108.71	0.00	0.00	-0.90	106.95	-9.0	0.0	-108.71	0.00	0.00	-0.90	106.95	-9.0	0.0	-108.71	0.00	0.00	-0.80	106.95	-9.2	0.0	-108.71	0.00	0.00	-0.70	106.95	-9.3	0.0	-108.71	0.00	0.00	-0.60	106.95	-9.5	0.0	-108.71	0.00	0.00	-0.50	106.95	-9.7	0.0	-108.71	0.00	0.00	-0.40	106.95	-9.8	0.0	-108.71	0.00	0.00	-0.30	106.95	-10.0	0.0	-108.71	0.00	0.00	-0.20	106.95	-10.1	0.0	-108.71	0.00	0.00	-0.10	106.95	-10.3	0.0	-108.71	0.00	0.00	0.00	106.95	-10.4	0.1	-108.71	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0077	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	29.635	29.635	0.00	0.00	106.950	106.707	29.635	29.635	0.00	0.00	106.707	106.400	29.635	29.635	0.00	0.00	106.400	105.500	29.635	29.635	0.00	0.00	105.500	105.450	29.635	29.635	0.00	0.50	105.450	105.090	29.635	29.635	0.50	4.10	105.090	105.000	29.635	29.635	4.10	5.00	105.000	104.400	24.695	24.695	5.00	5.00	104.400	104.300	24.695	24.695	5.00	5.00	104.300	103.400	24.695	24.695	5.00	5.00	103.400	102.690	24.695	24.695	5.00	5.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																
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<table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte)</p> <p>Teilsicherheit Erdwiderstand = 1.30</p> <p>Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.80</td></tr><tr><td>99.45</td><td>98.55</td><td>-131.80</td><td>-170.06</td></tr><tr><td>98.55</td><td>80.00</td><td>-170.06</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> 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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.76</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.74</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-4.8</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-4.8</td><td>0.72</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.7</td><td>0.72</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-4.7</td><td>1.46</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-4.7</td><td>1.46</td><td>6.81</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.0</td><td>11.22</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-3.9</td><td>11.22</td><td>44.17</td><td>48.36</td></tr><tr><td>101.85</td><td>-3.9</td><td>12.29</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-3.9</td><td>12.29</td><td>47.55</td><td>51.82</td></tr><tr><td>101.50</td><td>-3.5</td><td>20.88</td><td>72.54</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.4</td><td>20.88</td><td>71.17</td><td>76.00</td></tr><tr><td>101.45</td><td>-3.4</td><td>22.30</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-3.3</td><td>22.30</td><td>74.53</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.2</td><td>50.00</td><td>108.81</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>105.64</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>105.64</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.0</td><td>50.00</td><td>102.49</td><td>148.54</td></tr><tr><td>99.50</td><td>-0.9</td><td>50.00</td><td>46.96</td><td>210.72</td></tr><tr><td>99.45</td><td>-0.9</td><td>50.00</td><td>43.93</td><td>214.17</td></tr><tr><td>99.45</td><td>-0.9</td><td>50.00</td><td>43.93</td><td>214.17</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.4	-	-	-	107.40	-9.4	-	-	-	107.00	-9.1	-	-	-	106.95	-9.1	-	-	-	106.95	-9.1	-	-	-	106.90	-9.0	-	-	-	106.76	-8.9	-	-	-	106.71	-8.9	-	-	-	106.71	-8.9	-	-	-	106.66	-8.9	-	-	-	106.45	-8.7	-	-	-	106.40	-8.7	-	-	-	106.40	-8.7	-	-	-	106.35	-8.6	-	-	-	105.55	-8.0	-	-	-	105.50	-8.0	-	-	-	105.50	-8.0	-	-	-	105.45	-7.9	-	-	-	105.45	-7.9	-	-	-	105.40	-7.9	-	-	-	105.14	-7.7	-	-	-	105.09	-7.6	-	-	-	105.09	-7.6	-	-	-	105.05	-7.6	-	-	-	105.05	-7.6	-	-	-	105.00	-7.5	-	-	-	105.00	-7.5	-	-	-	104.95	-7.5	-	-	-	104.45	-7.0	-	-	-	104.40	-7.0	-	-	-	104.40	-7.0	-	-	-	104.35	-6.9	-	-	-	104.35	-6.9	-	-	-	104.30	-6.9	-	-	-	104.30	-6.9	-	-	-	104.25	-6.8	-	-	-	103.45	-5.9	-	-	-	103.40	-5.9	-	-	-	103.40	-5.9	-	-	-	103.35	-5.8	-	-	-	102.74	-5.1	-	-	-	102.69	-5.0	-	-	-	102.69	-5.0	-	-	-	102.64	-5.0	-	-	-	102.60	-4.9	-	-	-	102.55	-4.8	0.00	0.00	0.00	102.55	-4.8	0.00	0.00	0.00	102.50	-4.8	0.00	0.00	3.45	102.50	-4.8	0.72	3.45	3.45	102.45	-4.7	0.72	3.41	6.91	102.45	-4.7	1.46	6.91	6.91	102.40	-4.7	1.46	6.81	10.36	101.90	-4.0	11.22	44.91	44.91	101.85	-3.9	11.22	44.17	48.36	101.85	-3.9	12.29	48.36	48.36	101.80	-3.9	12.29	47.55	51.82	101.50	-3.5	20.88	72.54	72.54	101.45	-3.4	20.88	71.17	76.00	101.45	-3.4	22.30	76.00	76.00	101.40	-3.3	22.30	74.53	79.45	100.50	-2.2	50.00	108.81	141.63	100.45	-2.1	50.00	105.64	145.08	100.45	-2.1	50.00	105.64	145.08	100.40	-2.0	50.00	102.49	148.54	99.50	-0.9	50.00	46.96	210.72	99.45	-0.9	50.00	43.93	214.17	99.45	-0.9	50.00	43.93	214.17
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Schnitt:		Anlage K2 Schnitt 2L		Seite Anlage K2/15																																																																																																																																																																																																																																																																																																																																																										
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 214.17																																																																																																																																																																																																																																																																																																																																																										
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																										

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.40-0.850.0040.90217.63</div><div>98.600.150.00-7.23272.90</div><div>98.550.250.00-10.23276.35</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.06877979</div><div>Theoretischer Fußpunkt = 98.549 m</div></div><div><div>Einbindetiefe tg = 4.00 m</div><div>Profillänge = 8.90 m</div></div><div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div><div>G,k = 168.41 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 51.77 kN/m (Eah,k = 292.68 kN/m)</div><div>Bv,k = 92.57</div><div>Summe V,k = 127.62 kN/m (Druck)</div></div><div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div></div><div><div>Mantelreibung</div><div><div>vonbisqs,k [kN/m²]Bezeichnung</div><div>102.5598.5555.00s3: Flusskies, -sand</div></div><div>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 220.00 / 1.40 = 157.14 kN/m</div><div>Rd = Rb,d + Rs1,d = 1022.19 kN/m</div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 202.10 - 0.00 + 59.54 + 0.00 = 261.64 kN/m</div><div>==> µ = V,d / Rd = 261.64 / 1022.19 = 0.26</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 22116
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 13_BS 2_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 107.45 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 0.00 1.35 1.35 0.00 0.00 0.74 10.00 nein</div> <div>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.90 m</div> <div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 289.259 / 323.378 = 0.894$ Bettungslager $B_{h,d} = 289.259$ kN/m Erdwiderstand $E_{ph,d} = 323.378$ kN/m</div>		
Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/17
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																											
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<div>Anker und Steifen</div> <div>N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>106.95</td><td>0.00</td><td>1.00</td><td>-127.83</td><td>-110.80</td><td>-110.80</td><td>-8.19</td><td>6.900E+4</td><td>2.100E+7</td><td>-141.27</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>106.95</td><td>-8.9</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-9.6</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.4</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-10.5</td><td>0.0</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.7</td><td>0.1</td><td>-127.83</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 2\Linkes Ufer\10_BS 2_LF1.1 (ohne Lasten).vrb</div> <div>eingeliesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>106.95</td><td>-0.0077</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ_{m,k}</td><td>γ_{m',k}</td><td>φ_{i,k}</td><td>c(pas)_k</td><td>c(akt)_k</td><td>d(p)/φ_i</td><td>d(a)/φ_i</td><td>q_c</td><td>c_{u,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td><td>[MN/m²]</td><td>[kN/m²]</td></tr><tr><td>1</td><td>105.09</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.69</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ_i = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>k_{agh}</td><td>k_{ach}</td><td>φ_{i,k}</td><td>delta</td><td>theta</td><td>k_{agh}(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.09</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.69</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q]_k)</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.450</td><td>106.950</td><td>34.186</td><td>34.186</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.707</td><td>34.186</td><td>34.186</td><td>0.00</td><td>0.00</td></tr><tr><td>106.707</td><td>106.400</td><td>34.186</td><td>34.186</td><td>0.00</td><td>0.00</td></tr><tr><td>106.400</td><td>105.500</td><td>34.186</td><td>34.186</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>34.186</td><td>34.186</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.090</td><td>34.186</td><td>34.186</td><td>0.50</td><td>4.10</td></tr><tr><td>105.090</td><td>105.000</td><td>34.186</td><td>34.186</td><td>4.10</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.250</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</td><td>103.400</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr><tr><td>103.400</td><td>102.690</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-127.83	-110.80	-110.80	-8.19	6.900E+4	2.100E+7	-141.27	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.9	0.0	-127.83	0.00	0.00	-0.90	106.95	-9.1	0.0	-127.83	0.00	0.00	-0.90	106.95	-9.1	0.0	-127.83	0.00	0.00	-0.80	106.95	-9.2	0.0	-127.83	0.00	0.00	-0.70	106.95	-9.4	0.0	-127.83	0.00	0.00	-0.60	106.95	-9.6	0.0	-127.83	0.00	0.00	-0.50	106.95	-9.8	0.0	-127.83	0.00	0.00	-0.40	106.95	-10.0	0.0	-127.83	0.00	0.00	-0.30	106.95	-10.2	0.0	-127.83	0.00	0.00	-0.20	106.95	-10.4	0.0	-127.83	0.00	0.00	-0.10	106.95	-10.5	0.0	-127.83	0.00	0.00	0.00	106.95	-10.7	0.1	-127.83	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0077	Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.09	0.390	0.461	30.000	10.00	57.80	0.179	2	102.69	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	107.450	106.950	34.186	34.186	0.00	0.00	106.950	106.707	34.186	34.186	0.00	0.00	106.707	106.400	34.186	34.186	0.00	0.00	106.400	105.500	34.186	34.186	0.00	0.00	105.500	105.450	34.186	34.186	0.00	0.50	105.450	105.090	34.186	34.186	0.50	4.10	105.090	105.000	34.186	34.186	4.10	5.00	105.000	104.400	28.488	28.488	5.00	5.00	104.400	104.250	28.488	28.488	5.00	5.00	104.250	103.400	28.488	28.488	5.00	5.00	103.400	102.690	28.488	28.488	5.00	5.00	Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/18	
Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}																																																																																																																																																																																																																																																																																																																							
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-0.80	106.95	-9.2	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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-0.60	106.95	-9.6	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.50	106.95	-9.8	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.40	106.95	-10.0	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.30	106.95	-10.2	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.20	106.95	-10.4	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.10	106.95	-10.5	0.0	-127.83	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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1	106.95	-0.0077																																																																																																																																																																																																																																																																																																																															
Schicht	UK	γ _{m,k}	γ _{m',k}	φ _{i,k}	c(pas) _k	c(akt) _k	d(p)/φ _i	d(a)/φ _i	q _c	c _{u,k}																																																																																																																																																																																																																																																																																																																							
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																							
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00																																																																																																																																																																																																																																																																																																																							
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00																																																																																																																																																																																																																																																																																																																							
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																																							
Schicht	UK	k _{agh}	k _{ach}	φ _{i,k}	delta	theta	k _{agh} (40°)																																																																																																																																																																																																																																																																																																																										
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																										
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																																																										
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																										
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																										
von	bis	oben	unten	Wasserdruck																																																																																																																																																																																																																																																																																																																													
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																												
107.450	106.950	34.186	34.186	0.00	0.00																																																																																																																																																																																																																																																																																																																												
106.950	106.707	34.186	34.186	0.00	0.00																																																																																																																																																																																																																																																																																																																												
106.707	106.400	34.186	34.186	0.00	0.00																																																																																																																																																																																																																																																																																																																												
106.400	105.500	34.186	34.186	0.00	0.00																																																																																																																																																																																																																																																																																																																												
105.500	105.450	34.186	34.186	0.00	0.50																																																																																																																																																																																																																																																																																																																												
105.450	105.090	34.186	34.186	0.50	4.10																																																																																																																																																																																																																																																																																																																												
105.090	105.000	34.186	34.186	4.10	5.00																																																																																																																																																																																																																																																																																																																												
105.000	104.400	28.488	28.488	5.00	5.00																																																																																																																																																																																																																																																																																																																												
104.400	104.250	28.488	28.488	5.00	5.00																																																																																																																																																																																																																																																																																																																												
104.250	103.400	28.488	28.488	5.00	5.00																																																																																																																																																																																																																																																																																																																												
103.400	102.690	28.488	28.488	5.00	5.00																																																																																																																																																																																																																																																																																																																												
Kapitel: 4		LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																													
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																															

Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																								
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																												
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																								
<table><tr><td>102.690</td><td>102.550</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>35.241</td><td>35.652</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>35.652</td><td>38.113</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>38.113</td><td>39.755</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>39.755</td><td>43.858</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>43.858</td><td>47.960</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.549</td><td>47.960</td><td>51.653</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>51.653</td><td>127.732</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte)</p> <p>Teilsicherheit Erdwiderstand = 1.30</p> <p>Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.28</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.28</td><td>-131.80</td></tr><tr><td>99.45</td><td>98.55</td><td>-131.80</td><td>-170.06</td></tr><tr><td>98.55</td><td>80.00</td><td>-170.06</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-18.0</td><td>-19.7</td><td>-4.9</td><td>-127.8</td></tr><tr><td>106.95</td><td>-18.0</td><td>108.2</td><td>-4.9</td><td></td></tr><tr><td>106.71</td><td>-26.8</td><td>98.6</td><td>20.2</td><td></td></tr><tr><td>106.40</td><td>-37.9</td><td>86.6</td><td>48.6</td><td></td></tr><tr><td>105.50</td><td>-70.4</td><td>51.2</td><td>110.6</td><td></td></tr><tr><td>105.45</td><td>-72.2</td><td>49.2</td><td>113.1</td><td></td></tr><tr><td>105.09</td><td>-85.1</td><td>34.0</td><td>128.2</td><td></td></tr><tr><td>105.00</td><td>-88.1</td><td>30.0</td><td>131.0</td><td></td></tr><tr><td>104.40</td><td>-106.4</td><td>6.8</td><td>142.1</td><td></td></tr><tr><td>104.25</td><td>-111.0</td><td>0.9</td><td>142.6</td><td></td></tr><tr><td>103.40</td><td>-136.9</td><td>-32.0</td><td>129.4</td><td></td></tr><tr><td>102.69</td><td>-158.6</td><td>-59.5</td><td>97.0</td><td></td></tr><tr><td>102.55</td><td>-163.5</td><td>-65.0</td><td>88.2</td><td></td></tr><tr><td>102.45</td><td>-166.3</td><td>-69.4</td><td>81.5</td><td></td></tr><tr><td>101.85</td><td>-172.3</td><td>-80.7</td><td>35.1</td><td></td></tr><tr><td>101.45</td><td>-170.1</td><td>-73.3</td><td>3.9</td><td></td></tr><tr><td>100.45</td><td>-143.6</td><td>-5.6</td><td>-40.6</td><td></td></tr><tr><td>99.45</td><td>-126.6</td><td>33.5</td><td>-19.9</td><td></td></tr><tr><td>98.55</td><td>-136.7</td><td>0.0</td><td>0.0</td><td></td></tr></table>								102.690	102.550	28.488	28.488	5.00	5.00	102.550	102.450	35.241	35.652	5.00	5.00	102.450	101.850	35.652	38.113	5.00	5.00	101.850	101.450	38.113	39.755	5.00	5.00	101.450	100.449	39.755	43.858	5.00	5.00	100.449	99.449	43.858	47.960	5.00	5.00	99.449	98.549	47.960	51.653	5.00	5.00	98.549	80.000	51.653	127.732	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	107.45	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.45	0.00	-4.25	102.45	101.85	-4.25	-29.76	101.85	101.45	-29.76	-46.77	101.45	100.45	-46.77	-89.28	100.45	99.45	-89.28	-131.80	99.45	98.55	-131.80	-170.06	98.55	80.00	-170.06	-958.43	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	107.45	0.0	0.0	0.0		106.95	-18.0	-19.7	-4.9	-127.8	106.95	-18.0	108.2	-4.9		106.71	-26.8	98.6	20.2		106.40	-37.9	86.6	48.6		105.50	-70.4	51.2	110.6		105.45	-72.2	49.2	113.1		105.09	-85.1	34.0	128.2		105.00	-88.1	30.0	131.0		104.40	-106.4	6.8	142.1		104.25	-111.0	0.9	142.6		103.40	-136.9	-32.0	129.4		102.69	-158.6	-59.5	97.0		102.55	-163.5	-65.0	88.2		102.45	-166.3	-69.4	81.5		101.85	-172.3	-80.7	35.1		101.45	-170.1	-73.3	3.9		100.45	-143.6	-5.6	-40.6		99.45	-126.6	33.5	-19.9		98.55	-136.7	0.0	0.0	
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102.450	101.850	35.652	38.113	5.00	5.00																																																																																																																																																																																																																																									
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101.450	100.449	39.755	43.858	5.00	5.00																																																																																																																																																																																																																																									
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98.549	80.000	51.653	127.732	5.00	5.00																																																																																																																																																																																																																																									
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3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																								
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101.45	100.45	-46.77	-89.28																																																																																																																																																																																																																																											
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102.69	-158.6	-59.5	97.0																																																																																																																																																																																																																																											
102.55	-163.5	-65.0	88.2																																																																																																																																																																																																																																											
102.45	-166.3	-69.4	81.5																																																																																																																																																																																																																																											
101.85	-172.3	-80.7	35.1																																																																																																																																																																																																																																											
101.45	-170.1	-73.3	3.9																																																																																																																																																																																																																																											
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>107.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.74</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-5.2</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-5.2</td><td>0.67</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-5.1</td><td>0.67</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-5.1</td><td>1.35</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-5.0</td><td>1.35</td><td>6.82</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.4</td><td>10.29</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-4.3</td><td>10.29</td><td>44.20</td><td>48.36</td></tr><tr><td>101.85</td><td>-4.3</td><td>11.26</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-4.2</td><td>11.26</td><td>47.59</td><td>51.82</td></tr><tr><td>101.50</td><td>-3.8</td><td>19.04</td><td>72.55</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.7</td><td>19.04</td><td>71.22</td><td>76.00</td></tr><tr><td>101.45</td><td>-3.7</td><td>20.32</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-3.7</td><td>20.32</td><td>74.59</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.4</td><td>50.00</td><td>121.47</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>118.08</td><td>145.08</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>118.08</td><td>145.08</td></tr><tr><td>100.40</td><td>-2.3</td><td>50.00</td><td>114.69</td><td>148.54</td></tr><tr><td>99.50</td><td>-1.1</td><td>50.00</td><td>54.95</td><td>210.72</td></tr><tr><td>99.45</td><td>-1.0</td><td>50.00</td><td>51.68</td><td>214.17</td></tr><tr><td>99.45</td><td>-1.0</td><td>50.00</td><td>51.68</td><td>214.17</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.6	-	-	-	107.40	-9.6	-	-	-	107.00	-9.4	-	-	-	106.95	-9.3	-	-	-	106.95	-9.3	-	-	-	106.90	-9.3	-	-	-	106.75	-9.2	-	-	-	106.71	-9.2	-	-	-	106.71	-9.2	-	-	-	106.66	-9.1	-	-	-	106.45	-9.0	-	-	-	106.40	-9.0	-	-	-	106.40	-9.0	-	-	-	106.35	-8.9	-	-	-	105.55	-8.4	-	-	-	105.50	-8.3	-	-	-	105.50	-8.3	-	-	-	105.45	-8.3	-	-	-	105.45	-8.3	-	-	-	105.40	-8.3	-	-	-	105.14	-8.1	-	-	-	105.09	-8.0	-	-	-	105.09	-8.0	-	-	-	105.05	-8.0	-	-	-	105.05	-8.0	-	-	-	105.00	-7.9	-	-	-	105.00	-7.9	-	-	-	104.95	-7.9	-	-	-	104.45	-7.4	-	-	-	104.40	-7.4	-	-	-	104.40	-7.4	-	-	-	104.35	-7.3	-	-	-	104.30	-7.3	-	-	-	104.25	-7.2	-	-	-	104.25	-7.2	-	-	-	104.20	-7.2	-	-	-	103.45	-6.4	-	-	-	103.40	-6.3	-	-	-	103.40	-6.3	-	-	-	103.35	-6.2	-	-	-	102.74	-5.5	-	-	-	102.69	-5.4	-	-	-	102.69	-5.4	-	-	-	102.64	-5.4	-	-	-	102.60	-5.3	-	-	-	102.55	-5.2	0.00	0.00	0.00	102.55	-5.2	0.00	0.00	0.00	102.50	-5.2	0.00	0.00	3.45	102.50	-5.2	0.67	3.45	3.45	102.45	-5.1	0.67	3.41	6.91	102.45	-5.1	1.35	6.91	6.91	102.40	-5.0	1.35	6.82	10.36	101.90	-4.4	10.29	44.91	44.91	101.85	-4.3	10.29	44.20	48.36	101.85	-4.3	11.26	48.36	48.36	101.80	-4.2	11.26	47.59	51.82	101.50	-3.8	19.04	72.55	72.54	101.45	-3.7	19.04	71.22	76.00	101.45	-3.7	20.32	76.00	76.00	101.40	-3.7	20.32	74.59	79.45	100.50	-2.4	50.00	121.47	141.63	100.45	-2.4	50.00	118.08	145.08	100.45	-2.4	50.00	118.08	145.08	100.40	-2.3	50.00	114.69	148.54	99.50	-1.1	50.00	54.95	210.72	99.45	-1.0	50.00	51.68	214.17	99.45	-1.0	50.00	51.68	214.17
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101.90	-4.4	10.29	44.91	44.91																																																																																																																																																																																																																																																																																																																																																										
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101.85	-4.3	11.26	48.36	48.36																																																																																																																																																																																																																																																																																																																																																										
101.80	-4.2	11.26	47.59	51.82																																																																																																																																																																																																																																																																																																																																																										
101.50	-3.8	19.04	72.55	72.54																																																																																																																																																																																																																																																																																																																																																										
101.45	-3.7	19.04	71.22	76.00																																																																																																																																																																																																																																																																																																																																																										
101.45	-3.7	20.32	76.00	76.00																																																																																																																																																																																																																																																																																																																																																										
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100.50	-2.4	50.00	121.47	141.63																																																																																																																																																																																																																																																																																																																																																										
100.45	-2.4	50.00	118.08	145.08																																																																																																																																																																																																																																																																																																																																																										
100.45	-2.4	50.00	118.08	145.08																																																																																																																																																																																																																																																																																																																																																										
100.40	-2.3	50.00	114.69	148.54																																																																																																																																																																																																																																																																																																																																																										
99.50	-1.1	50.00	54.95	210.72																																																																																																																																																																																																																																																																																																																																																										
99.45	-1.0	50.00	51.68	214.17																																																																																																																																																																																																																																																																																																																																																										
99.45	-1.0	50.00	51.68	214.17																																																																																																																																																																																																																																																																																																																																																										
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber:	Stadtverwaltung Leipzig		-								
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p> 99.40 -1.0 50.00 48.42 217.63 98.60 0.1 50.00 -3.51 272.90 98.55 0.1 50.00 -6.75 276.35 </p> <p> Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.07422833 Theoretischer Fußpunkt = 98.549 m </p> <p> Einbindetiefe t_g = 4.00 m Profillänge = 8.90 m </p> <p> Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$ $G_{i,k}$ = 168.41 kN/m $G'_{i,k}$ = 0.00 kN/m $P_{v,k}$ = 0.00 kN/m $E_{av,k}$ = 57.76 kN/m ($E_{ah,k}$ = 327.40 kN/m) $B_{v,k}$ = 99.55 Summe $V_{i,k}$ = 126.62 kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) $\Rightarrow q_{b,k}$ = 1.60 MN/m² $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m </p> <p> Mantelreibung <table border="0"> <tr> <td>von</td> <td>bis</td> <td>$q_{s,k}$ [kN/m²]</td> <td>Bezeichnung</td> </tr> <tr> <td>102.55</td> <td>98.55</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.55 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.00 / 1.40 = 157.14$ kN/m $R_{i,d} = R_{b,d} + R_{s1,d} = 1022.19$ kN/m </p> <p> Einwirkungen $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 202.10 - 0.00 + 66.43 + 0.00 = 268.52$ kN/m $\Rightarrow \mu = V_{i,d} / R_{i,d} = 268.52 / 1022.19 = 0.26$ </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>				von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung								
102.55	98.55	55.00	s3: Flussskies, -sand								
Schnitt:	Anlage K2	Schnitt 2L	Seite Anlage K2/22								
Kapitel:	4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 22								
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025								



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig		
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum:	21.06.2024

5

LF 3 (BS-T, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 2
Datei: 14_BS 2_LF3 (mit Lasten).vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 108.80 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	10.00	0.00	108.80	108.80	108.79	nein

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	29.50	105.50	102.55	Wasserdruck

Krafränder

Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-29.80	0.00	0.00	0.00	46.50	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 10.25 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Ausnutzungsgrad $\mu_e = 181.932 / 231.516 = 0.786$
Bettungslager $B_{h,d} = 181.932 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 231.516 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-282.18	-243.59	-243.59	-49.79	3.900E+7	2.100E+7	-310.57 Steife

Zusätzlich für Steifen
Steife 1
Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.2	0.0	-282.61	0.00	0.00
-7.47	103.72	-7.3	0.0	-282.61	0.00	0.00
-7.47	103.72	-7.3	0.0	-282.61	0.00	0.00
-6.64	103.72	-7.3	0.0	-282.61	0.00	0.00
-5.81	103.72	-7.3	0.0	-282.61	0.00	0.00
-4.98	103.72	-7.3	0.0	-282.61	0.00	0.00
-4.15	103.72	-7.3	0.0	-282.61	0.00	0.00
-3.32	103.72	-7.3	0.0	-282.61	0.00	0.00
-2.49	103.72	-7.3	0.0	-282.61	0.00	0.00
-1.66	103.72	-7.3	0.1	-282.61	0.00	0.00
-0.83	103.72	-7.3	0.1	-282.61	0.00	0.00
0.00	103.72	-7.3	0.1	-282.61	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.
Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0063

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.800	108.794	0.000	3.941	0.00
108.794	107.800	3.941	11.301	0.00
107.800	107.450	11.301	13.892	0.00
107.450	106.800	13.892	18.705	0.00
106.800	105.750	18.705	26.479	0.00
105.750	105.500	26.479	28.330	0.00
105.500	105.090	28.330	29.927	0.00
105.090	104.750	36.782	38.228	4.10
104.750	103.760	38.228	42.441	7.50

Schnitt:	Anlage K2	Schnitt 2L	Seite Anlage K2/24
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																				
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<table><tr><td>103.760</td><td>103.720</td><td>42.441</td><td>42.611</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.745</td><td>42.611</td><td>46.760</td><td>17.80</td><td>27.55</td></tr><tr><td>102.745</td><td>102.690</td><td>46.760</td><td>46.994</td><td>27.55</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>34.667</td><td>35.241</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>101.850</td><td>35.241</td><td>38.113</td><td>0.00</td><td>0.00</td></tr><tr><td>101.850</td><td>101.800</td><td>38.113</td><td>38.319</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>38.319</td><td>42.422</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>42.422</td><td>46.524</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>46.524</td><td>50.627</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>50.627</td><td>51.653</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>51.653</td><td>127.732</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>101.85</td><td>0.00</td><td>-29.76</td></tr><tr><td>101.85</td><td>101.80</td><td>-29.76</td><td>-31.89</td></tr><tr><td>101.80</td><td>100.80</td><td>-31.89</td><td>-74.40</td></tr><tr><td>100.80</td><td>99.80</td><td>-74.40</td><td>-116.92</td></tr><tr><td>99.80</td><td>98.80</td><td>-116.92</td><td>-159.43</td></tr><tr><td>98.80</td><td>98.55</td><td>-159.43</td><td>-170.06</td></tr><tr><td>98.55</td><td>80.00</td><td>-170.06</td><td>-958.43</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> 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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 100.80 0.0 0.0 0.0 99.80 0.0 0.0 0.0 98.80 0.0 0.0 0.0 98.55 0.0 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] </div> <div> 108.80 -19.5 - - - 108.80 -19.5 - - - 108.80 -19.5 - - - 108.79 -19.5 - - - 108.79 -19.5 - - - 108.74 -19.4 - - - 107.85 -16.9 - - - 107.80 -16.8 - - - 107.80 -16.8 - - - 107.75 -16.6 - - - 107.50 -15.9 - - - 107.45 -15.8 - - - 107.45 -15.8 - - - 107.40 -15.6 - - - 106.85 -14.1 - - - 106.80 -14.0 - - - 106.80 -14.0 - - - 106.75 -13.9 - - - 105.80 -11.3 - - - 105.75 -11.2 - - - 105.75 -11.2 - - - 105.70 -11.1 - - - 105.55 -10.7 - - - 105.50 -10.6 - - - 105.50 -10.6 - - - 105.45 -10.4 - - - 105.14 -9.6 - - - 105.09 -9.5 - - - 105.09 -9.5 - - - 105.04 -9.4 - - - 104.80 -8.8 - - - 104.75 -8.7 - - - 104.75 -8.7 - - - 104.70 -8.6 - - - 103.80 -6.5 - - - 103.76 -6.4 - - - 103.76 -6.4 - - - 103.72 -6.4 - - - 103.72 -6.4 - - - 103.67 -6.2 - - - 102.80 -4.6 - - - 102.75 -4.5 - - - 102.75 -4.5 - - - 102.69 -4.4 - - - 102.69 -4.4 - - - 102.64 -4.3 - - - 102.60 -4.3 - - - 102.55 -4.2 0.00 0.00 0.00 102.55 -4.2 0.00 0.00 0.00 102.50 -4.1 0.00 0.00 3.45 101.90 -3.2 14.25 44.91 44.91 101.85 -3.1 14.25 43.85 48.36 101.85 -3.1 15.71 48.36 48.36 101.80 -3.0 15.71 47.21 51.82 101.80 -3.0 17.24 51.82 51.82 101.75 -2.9 17.24 50.56 55.27 100.85 -1.7 50.00 86.62 117.45 100.80 -1.7 50.00 83.56 120.90 100.80 -1.7 50.00 83.56 120.90 100.75 -1.6 50.00 80.53 124.36 99.85 -0.6 50.00 29.54 186.54 99.80 -0.5 50.00 26.86 189.99 </div> </div>		
Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/27
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<div><div><div>99.80-0.550.0026.86189.99</div><div>99.75-0.550.0024.19193.45</div><div>98.850.550.00-22.70255.62</div><div>98.800.550.00-25.28259.08</div><div>98.800.550.00-25.28259.08</div><div>98.750.650.00-27.85262.53</div><div>98.600.750.00-35.58272.90</div><div>98.550.850.00-38.15276.35</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k:-0.05897575</div><div>Theoretischer Fußpunkt = 98.549 m</div><div>Einbindetiefe tg = 4.00 m</div><div>Profillänge = 10.25 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G_k - G'_k + Eav,k >= Bv,k</div><div>G_k = 193.96 kN/m</div><div>G'_k = 0.00 kN/m</div><div>Pv,k = 46.50 kN/m</div><div>Eav,k = 60.85 kN/m (Eah,k = 344.37 kN/m)</div><div>Bv,k = 62.97</div><div>Summe V_k = 238.34 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung</div><div>vonbisqs,k [kN/m²]Bezeichnung</div><div>102.5598.5555.00s3: Flusssandes-sand</div><div>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> R_{s1,d}</div><div>R_{s1,d} = eta(s) · R_{s1,k} / gamma(qs,k) = 1.000 · 220.00 / 1.40 = 157.14 kN/m</div><div>R_d = Rb,d + R_{s1,d} = 1022.19 kN/m</div><div>Einwirkungen</div><div>V_d = G_d - G'_k + Eav,d + Pv,d = 232.75 - 0.00 + 69.98 + 55.80 = 358.53 kN/m</div><div>=> µ = V_d / R_d = 358.53 / 1022.19 = 0.35</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt:	Anlage K2 Schnitt 2L	Seite Anlage K2/28
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: Standsicherheit
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig		
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum:	21.06.2024

6

LF 4 (BS-P, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 2
Datei: 15_BS 2_LF4 (5 kN_m², BS-P).vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 108.80 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-P
gamma(G) = 1.35
gamma(G,Ruhe) = 1.20
gamma(Q) = 1.50
gamma(Ep) = 1.40
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	5.00	0.00	108.80	108.80	108.79	nein

Passivseite

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	29.50	105.50	102.55	Wasserdruck

Kraftträger

Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	107.45	-29.80	0.00	0.00	0.00	46.50	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 10.25 m

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 224.350 / 237.830 = 0.943$
Bettungslager $B_{h,d} = 224.350 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 237.830 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-269.61	-209.05	-209.05	-49.99	3.900E+7	2.100E+7	-266.54 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-8.0	0.0	-270.29	0.00	0.00
-7.47	103.72	-8.0	0.0	-270.29	0.00	0.00
-7.47	103.72	-8.0	0.0	-270.29	0.00	0.00
-6.64	103.72	-8.0	0.0	-270.29	0.00	0.00
-5.81	103.72	-8.0	0.0	-270.29	0.00	0.00
-4.98	103.72	-8.1	0.0	-270.29	0.00	0.00
-4.15	103.72	-8.1	0.0	-270.29	0.00	0.00
-3.32	103.72	-8.1	0.0	-270.29	0.00	0.00
-2.49	103.72	-8.1	0.1	-270.29	0.00	0.00
-1.66	103.72	-8.1	0.1	-270.29	0.00	0.00
-0.83	103.72	-8.1	0.1	-270.29	0.00	0.00
0.00	103.72	-8.1	0.1	-270.29	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0063

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	[-]
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.800	108.794	0.000	1.992	0.00
108.794	107.800	1.992	9.352	0.00
107.800	107.450	9.352	11.944	0.00
107.450	106.800	11.944	16.756	0.00

Schnitt: Anlage K2	Schnitt 2L	Seite Anlage K2/30
Kapitel: 6	LF 4 (BS-P, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																		
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<table><tr><td>106.800</td><td>105.750</td><td>16.756</td><td>24.530</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>24.530</td><td>26.381</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.090</td><td>26.381</td><td>27.979</td><td>0.00</td><td>4.10</td></tr><tr><td>105.090</td><td>104.750</td><td>34.279</td><td>35.725</td><td>4.10</td><td>7.50</td></tr><tr><td>104.750</td><td>103.760</td><td>35.725</td><td>39.938</td><td>7.50</td><td>17.40</td></tr><tr><td>103.760</td><td>103.720</td><td>39.938</td><td>40.108</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.745</td><td>40.108</td><td>44.257</td><td>17.80</td><td>27.55</td></tr><tr><td>102.745</td><td>102.690</td><td>44.257</td><td>44.491</td><td>27.55</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>32.884</td><td>33.458</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>33.458</td><td>35.304</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.800</td><td>35.304</td><td>36.535</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>36.535</td><td>40.638</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>40.638</td><td>44.741</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>44.741</td><td>48.844</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>48.844</td><td>49.870</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>49.870</td><td>125.949</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-11.33</td><td>-29.09</td></tr><tr><td>102.10</td><td>101.80</td><td>-29.09</td><td>-40.93</td></tr><tr><td>101.80</td><td>100.80</td><td>-40.93</td><td>-80.41</td></tr><tr><td>100.80</td><td>99.80</td><td>-80.41</td><td>-119.89</td></tr><tr><td>99.80</td><td>98.80</td><td>-119.89</td><td>-159.37</td></tr><tr><td>98.80</td><td>98.55</td><td>-159.37</td><td>-169.24</td></tr><tr><td>98.55</td><td>80.00</td><td>-169.24</td><td>-901.29</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.79</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.80</td><td>-26.7</td><td>-7.2</td><td>-2.8</td><td></td></tr><tr><td>107.45</td><td>-36.9</td><td>-11.9</td><td>-6.1</td><td></td></tr><tr><td>107.45</td><td>-99.7</td><td>-11.9</td><td>-46.4</td><td></td></tr><tr><td>106.80</td><td>-119.7</td><td>-23.8</td><td>-57.8</td><td></td></tr><tr><td>105.75</td><td>-155.1</td><td>-51.5</td><td>-96.4</td><td></td></tr><tr><td>105.50</td><td>-164.1</td><td>-59.6</td><td>-110.3</td><td></td></tr><tr><td>105.09</td><td>-179.2</td><td>-74.9</td><td>-137.7</td><td></td></tr><tr><td>104.75</td><td>-191.4</td><td>-92.8</td><td>-166.2</td><td></td></tr><tr><td>103.76</td><td>-228.1</td><td>-157.2</td><td>-288.4</td><td></td></tr><tr><td>103.72</td><td>-229.6</td><td>-160.2</td><td>-294.7</td><td>-270.3</td></tr><tr><td>103.72</td><td>-229.6</td><td>110.1</td><td>-294.7</td><td></td></tr><tr><td>102.75</td><td>-267.2</td><td>27.8</td><td>-226.0</td><td></td></tr><tr><td>102.69</td><td>-269.4</td><td>22.7</td><td>-224.6</td><td></td></tr><tr><td>102.55</td><td>-275.1</td><td>11.3</td><td>-222.2</td><td></td></tr><tr><td>102.10</td><td>-279.0</td><td>9.4</td><td>-218.4</td><td></td></tr><tr><td>101.80</td><td>-277.3</td><td>18.2</td><td>-214.4</td><td></td></tr><tr><td>100.80</td><td>-255.6</td><td>83.8</td><td>-164.4</td><td></td></tr><tr><td>99.80</td><td>-254.4</td><td>92.8</td><td>-69.6</td><td></td></tr><tr><td>98.80</td><td>-271.7</td><td>27.5</td><td>-3.5</td><td></td></tr><tr><td>98.55</td><td>-273.1</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.800	105.750	16.756	24.530	0.00	0.00	105.750	105.500	24.530	26.381	0.00	0.00	105.500	105.090	26.381	27.979	0.00	4.10	105.090	104.750	34.279	35.725	4.10	7.50	104.750	103.760	35.725	39.938	7.50	17.40	103.760	103.720	39.938	40.108	17.40	17.80	103.720	102.745	40.108	44.257	17.80	27.55	102.745	102.690	44.257	44.491	27.55	28.10	102.690	102.550	32.884	33.458	28.10	29.50	102.550	102.100	33.458	35.304	0.00	0.00	102.100	101.800	35.304	36.535	0.00	0.00	101.800	100.799	36.535	40.638	0.00	0.00	100.799	99.799	40.638	44.741	0.00	0.00	99.799	98.799	44.741	48.844	0.00	0.00	98.799	98.549	48.844	49.870	0.00	0.00	98.549	80.000	49.870	125.949	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.80	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.10	-11.33	-29.09	102.10	101.80	-29.09	-40.93	101.80	100.80	-40.93	-80.41	100.80	99.80	-80.41	-119.89	99.80	98.80	-119.89	-159.37	98.80	98.55	-159.37	-169.24	98.55	80.00	-169.24	-901.29	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.80	0.0	0.0	0.0		108.79	-0.1	0.0	0.0		107.80	-26.7	-7.2	-2.8		107.45	-36.9	-11.9	-6.1		107.45	-99.7	-11.9	-46.4		106.80	-119.7	-23.8	-57.8		105.75	-155.1	-51.5	-96.4		105.50	-164.1	-59.6	-110.3		105.09	-179.2	-74.9	-137.7		104.75	-191.4	-92.8	-166.2		103.76	-228.1	-157.2	-288.4		103.72	-229.6	-160.2	-294.7	-270.3	103.72	-229.6	110.1	-294.7		102.75	-267.2	27.8	-226.0		102.69	-269.4	22.7	-224.6		102.55	-275.1	11.3	-222.2		102.10	-279.0	9.4	-218.4		101.80	-277.3	18.2	-214.4		100.80	-255.6	83.8	-164.4		99.80	-254.4	92.8	-69.6		98.80	-271.7	27.5	-3.5		98.55	-273.1	0.0	0.0	
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Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																													
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																													



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>100.800.00.00.0</div><div>99.800.000.00.0</div><div>98.800.000.00.0</div><div>98.550.000.00.0</div></div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>108.80-19.3-- 108.80-19.3-- 108.80-19.3-- 108.79-19.3-- 108.79-19.3-- 108.74-19.2-- 107.85-16.7-- 107.80-16.6-- 107.80-16.6-- 107.75-16.5-- 107.50-15.8-- 107.45-15.7-- 107.45-15.7-- 107.40-15.5-- 106.85-14.0-- 106.80-13.9-- 106.80-13.9-- 106.75-13.8-- 105.80-11.3-- 105.75-11.2-- 105.75-11.2-- 105.70-11.0-- 105.55-10.6-- 105.50-10.5-- 105.50-10.5-- 105.45-10.4-- 105.14-9.6-- 105.09-9.5-- 105.09-9.5-- 105.04-9.4-- 104.80-8.8-- 104.75-8.7-- 104.75-8.7-- 104.70-8.6-- 103.80-6.5-- 103.76-6.4-- 103.76-6.4-- 103.72-6.3-- 103.72-6.3-- 103.67-6.2-- 102.80-4.6-- 102.75-4.5-- 102.75-4.5-- 102.69-4.4-- 102.69-4.4-- 102.64-4.3-- 102.60-4.2-- 102.55-4.10.000.000.00 102.55-4.10.000.0019.82 102.50-4.00.000.0023.27 102.15-3.513.6647.4547.45 102.10-3.413.6646.3750.91 102.10-3.415.0050.9150.91 102.05-3.315.0049.7354.36 101.85-3.022.6668.1868.18 101.80-2.922.6666.4971.63 101.80-2.924.4171.6471.63 101.75-2.924.4169.8375.09 100.85-1.650.0082.11137.27 100.80-1.650.0079.02140.72 100.80-1.650.0079.02140.72 100.75-1.550.0075.96144.18</div></div></div>					
Schnitt:		Anlage K2 Schnitt 2L		Seite Anlage K2/33	
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																										
Auftraggeber: Stadtverwaltung Leipzig																																																												
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																										
<div><table><tr><td>99.85</td><td>-0.5</td><td>50.00</td><td>24.67</td><td>206.36</td></tr><tr><td>99.80</td><td>-0.4</td><td>50.00</td><td>21.98</td><td>209.81</td></tr><tr><td>99.80</td><td>-0.4</td><td>50.00</td><td>21.98</td><td>209.81</td></tr><tr><td>99.75</td><td>-0.4</td><td>50.00</td><td>19.30</td><td>213.26</td></tr><tr><td>98.85</td><td>0.6</td><td>50.00</td><td>-27.69</td><td>275.44</td></tr><tr><td>98.80</td><td>0.6</td><td>50.00</td><td>-30.27</td><td>278.90</td></tr><tr><td>98.80</td><td>0.6</td><td>50.00</td><td>-30.27</td><td>278.90</td></tr><tr><td>98.75</td><td>0.7</td><td>50.00</td><td>-32.85</td><td>282.35</td></tr><tr><td>98.60</td><td>0.8</td><td>50.00</td><td>-40.58</td><td>292.72</td></tr><tr><td>98.55</td><td>0.9</td><td>50.00</td><td>-43.16</td><td>296.17</td></tr></table><p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05906682 Theoretischer Fußpunkt = 98.549 m</p><p>Einbindetiefe tg = 4.00 m Profillänge = 10.25 m</p><p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k >= Bv,k G,k = 193.96 kN/m G',k = 0.00 kN/m Pv,k = 46.50 kN/m Eav,k = 57.26 kN/m (Eah,k = 323.76 kN/m) Bv,k = 70.07 Summe V,k = 227.66 kN/m (Druck)</p><p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p><p>Mantelreibung</p><table><tr><th>von</th><th>bis</th><th>qs,k [kN/m²]</th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table><p>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 220.00 / 1.40 = 157.14 kN/m R,d = Rb,d + R,s1,d = 1022.19 kN/m</p><p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 261.85 - 0.00 + 73.01 + 62.78 = 397.63 kN/m ==> µ = V,d / R,d = 397.63 / 1022.19 = 0.39</p><p>Horizontaler Wasserdruck herkömmlich bestimmt.</p></div>			99.85	-0.5	50.00	24.67	206.36	99.80	-0.4	50.00	21.98	209.81	99.80	-0.4	50.00	21.98	209.81	99.75	-0.4	50.00	19.30	213.26	98.85	0.6	50.00	-27.69	275.44	98.80	0.6	50.00	-30.27	278.90	98.80	0.6	50.00	-30.27	278.90	98.75	0.7	50.00	-32.85	282.35	98.60	0.8	50.00	-40.58	292.72	98.55	0.9	50.00	-43.16	296.17	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.55	55.00	s3: Flusskies, -sand
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Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/34																																																										
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2204/04																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																										

statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 16_BS 2_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 108.80 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 108.80 108.80 108.79 nein</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 29.50 105.50 102.55 Wasserdruck</div> <div>Kraftträger Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv) Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m] 1 107.45 -29.80 0.00 0.00 0.00 46.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.25 m</div>		
Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/35
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 201.025 / 256.125 = 0.785$
Bettungslager $B_{h,d} = 201.025 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 256.125 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-267.03	-230.41	-230.41	-49.99	3.900E+7	2.100E+7	-293.78

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-7.2	0.0	-267.48	0.00	0.00
-7.47	103.72	-7.3	0.0	-267.48	0.00	0.00
-7.47	103.72	-7.3	0.0	-267.48	0.00	0.00
-6.64	103.72	-7.3	0.0	-267.48	0.00	0.00
-5.81	103.72	-7.3	0.0	-267.48	0.00	0.00
-4.98	103.72	-7.3	0.0	-267.48	0.00	0.00
-4.15	103.72	-7.3	0.0	-267.48	0.00	0.00
-3.32	103.72	-7.3	0.0	-267.48	0.00	0.00
-2.49	103.72	-7.3	0.0	-267.48	0.00	0.00
-1.66	103.72	-7.3	0.1	-267.48	0.00	0.00
-0.83	103.72	-7.3	0.1	-267.48	0.00	0.00
0.00	103.72	-7.3	0.1	-267.48	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0063

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.09	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.69	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte

Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]	
1	105.09	0.390	0.461	30.000	10.00	57.80	0.179
2	102.69	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Aktive Erddruckordinaten ($[g+q],k$)
mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.800	108.794	0.000	3.941	0.00
108.794	107.800	3.941	11.301	0.00
107.800	107.450	11.301	13.892	0.00
107.450	106.800	13.892	18.705	0.00

Schnitt:	Anlage K2	Schnitt 2L	Seite Anlage K2/36
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																		
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																						
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																		
<table><tr><td>106.800</td><td>105.750</td><td>18.705</td><td>26.479</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>26.479</td><td>28.330</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.090</td><td>28.330</td><td>29.927</td><td>0.00</td><td>4.10</td></tr><tr><td>105.090</td><td>104.750</td><td>36.782</td><td>38.228</td><td>4.10</td><td>7.50</td></tr><tr><td>104.750</td><td>103.760</td><td>38.228</td><td>42.441</td><td>7.50</td><td>17.40</td></tr><tr><td>103.760</td><td>103.720</td><td>42.441</td><td>42.611</td><td>17.40</td><td>17.80</td></tr><tr><td>103.720</td><td>102.745</td><td>42.611</td><td>46.760</td><td>17.80</td><td>27.55</td></tr><tr><td>102.745</td><td>102.690</td><td>46.760</td><td>46.994</td><td>27.55</td><td>28.10</td></tr><tr><td>102.690</td><td>102.550</td><td>34.667</td><td>35.241</td><td>28.10</td><td>29.50</td></tr><tr><td>102.550</td><td>102.100</td><td>35.241</td><td>37.088</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.800</td><td>37.088</td><td>38.319</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>38.319</td><td>42.422</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.799</td><td>42.422</td><td>46.524</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>98.799</td><td>46.524</td><td>50.627</td><td>0.00</td><td>0.00</td></tr><tr><td>98.799</td><td>98.549</td><td>50.627</td><td>51.653</td><td>0.00</td><td>0.00</td></tr><tr><td>98.549</td><td>80.000</td><td>51.653</td><td>127.732</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>108.80</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.69</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.10</td><td>-12.20</td><td>-31.33</td></tr><tr><td>102.10</td><td>101.80</td><td>-31.33</td><td>-44.08</td></tr><tr><td>101.80</td><td>100.80</td><td>-44.08</td><td>-86.60</td></tr><tr><td>100.80</td><td>99.80</td><td>-86.60</td><td>-129.11</td></tr><tr><td>99.80</td><td>98.80</td><td>-129.11</td><td>-171.63</td></tr><tr><td>98.80</td><td>98.55</td><td>-171.63</td><td>-182.26</td></tr><tr><td>98.55</td><td>80.00</td><td>-182.26</td><td>-970.62</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>108.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.79</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>107.80</td><td>-24.9</td><td>-8.7</td><td>-3.6</td><td></td></tr><tr><td>107.45</td><td>-34.4</td><td>-13.8</td><td>-7.6</td><td></td></tr><tr><td>107.45</td><td>-90.2</td><td>-13.8</td><td>-43.3</td><td></td></tr><tr><td>106.80</td><td>-108.8</td><td>-26.0</td><td>-56.0</td><td></td></tr><tr><td>105.75</td><td>-141.6</td><td>-53.3</td><td>-96.8</td><td></td></tr><tr><td>105.50</td><td>-149.9</td><td>-61.1</td><td>-111.1</td><td></td></tr><tr><td>105.09</td><td>-163.8</td><td>-75.9</td><td>-139.1</td><td></td></tr><tr><td>104.75</td><td>-175.1</td><td>-92.9</td><td>-167.7</td><td></td></tr><tr><td>103.76</td><td>-209.0</td><td>-153.6</td><td>-288.4</td><td></td></tr><tr><td>103.72</td><td>-210.4</td><td>-156.4</td><td>-294.6</td><td>-267.5</td></tr><tr><td>103.72</td><td>-210.4</td><td>111.1</td><td>-294.6</td><td></td></tr><tr><td>102.75</td><td>-245.0</td><td>34.4</td><td>-222.4</td><td></td></tr><tr><td>102.69</td><td>-247.0</td><td>29.6</td><td>-220.6</td><td></td></tr><tr><td>102.55</td><td>-252.3</td><td>19.2</td><td>-217.2</td><td></td></tr><tr><td>102.10</td><td>-255.9</td><td>16.5</td><td>-209.9</td><td></td></tr><tr><td>101.80</td><td>-254.3</td><td>23.8</td><td>-204.0</td><td></td></tr><tr><td>100.80</td><td>-235.0</td><td>80.4</td><td>-152.7</td><td></td></tr><tr><td>99.80</td><td>-234.3</td><td>85.7</td><td>-63.9</td><td></td></tr><tr><td>98.80</td><td>-250.0</td><td>25.0</td><td>-3.2</td><td></td></tr><tr><td>98.55</td><td>-251.3</td><td>0.0</td><td>0.0</td><td></td></tr></table>								106.800	105.750	18.705	26.479	0.00	0.00	105.750	105.500	26.479	28.330	0.00	0.00	105.500	105.090	28.330	29.927	0.00	4.10	105.090	104.750	36.782	38.228	4.10	7.50	104.750	103.760	38.228	42.441	7.50	17.40	103.760	103.720	42.441	42.611	17.40	17.80	103.720	102.745	42.611	46.760	17.80	27.55	102.745	102.690	46.760	46.994	27.55	28.10	102.690	102.550	34.667	35.241	28.10	29.50	102.550	102.100	35.241	37.088	0.00	0.00	102.100	101.800	37.088	38.319	0.00	0.00	101.800	100.799	38.319	42.422	0.00	0.00	100.799	99.799	42.422	46.524	0.00	0.00	99.799	98.799	46.524	50.627	0.00	0.00	98.799	98.549	50.627	51.653	0.00	0.00	98.549	80.000	51.653	127.732	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.80	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.69	102.55	0.00	0.00	102.55	102.10	-12.20	-31.33	102.10	101.80	-31.33	-44.08	101.80	100.80	-44.08	-86.60	100.80	99.80	-86.60	-129.11	99.80	98.80	-129.11	-171.63	98.80	98.55	-171.63	-182.26	98.55	80.00	-182.26	-970.62	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	108.80	0.0	0.0	0.0		108.79	-0.1	0.0	0.0		107.80	-24.9	-8.7	-3.6		107.45	-34.4	-13.8	-7.6		107.45	-90.2	-13.8	-43.3		106.80	-108.8	-26.0	-56.0		105.75	-141.6	-53.3	-96.8		105.50	-149.9	-61.1	-111.1		105.09	-163.8	-75.9	-139.1		104.75	-175.1	-92.9	-167.7		103.76	-209.0	-153.6	-288.4		103.72	-210.4	-156.4	-294.6	-267.5	103.72	-210.4	111.1	-294.6		102.75	-245.0	34.4	-222.4		102.69	-247.0	29.6	-220.6		102.55	-252.3	19.2	-217.2		102.10	-255.9	16.5	-209.9		101.80	-254.3	23.8	-204.0		100.80	-235.0	80.4	-152.7		99.80	-234.3	85.7	-63.9		98.80	-250.0	25.0	-3.2		98.55	-251.3	0.0	0.0	
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Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																													
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 100.80 0.0 0.0 0.0 99.80 0.0 0.0 0.0 98.80 0.0 0.0 0.0 98.55 0.0 0.0 0.0 </div> <div> Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m Tiefe w ks sig,Bh,k eph,k [m] [mm] [kN/m³] [kN/m²] [kN/m²] 108.80 -19.9 - - - 108.80 -19.8 - - - 108.80 -19.8 - - - 108.79 -19.8 - - - 108.79 -19.8 - - - 108.74 -19.7 - - - 107.85 -17.2 - - - 107.80 -17.0 - - - 107.80 -17.0 - - - 107.75 -16.9 - - - 107.50 -16.2 - - - 107.45 -16.0 - - - 107.45 -16.0 - - - 107.40 -15.9 - - - 106.85 -14.3 - - - 106.80 -14.2 - - - 106.80 -14.2 - - - 106.75 -14.1 - - - 105.80 -11.5 - - - 105.75 -11.3 - - - 105.75 -11.3 - - - 105.70 -11.2 - - - 105.55 -10.8 - - - 105.50 -10.7 - - - 105.50 -10.7 - - - 105.45 -10.5 - - - 105.14 -9.7 - - - 105.09 -9.6 - - - 105.09 -9.6 - - - 105.04 -9.5 - - - 104.80 -8.9 - - - 104.75 -8.7 - - - 104.75 -8.7 - - - 104.70 -8.6 - - - 103.80 -6.5 - - - 103.76 -6.4 - - - 103.76 -6.4 - - - 103.72 -6.3 - - - 103.72 -6.3 - - - 103.67 -6.2 - - - 102.80 -4.5 - - - 102.75 -4.4 - - - 102.75 -4.4 - - - 102.69 -4.3 - - - 102.69 -4.3 - - - 102.64 -4.3 - - - 102.60 -4.2 - - - 102.55 -4.1 0.00 0.00 0.00 102.55 -4.1 0.00 0.00 19.82 102.50 -4.0 0.00 0.00 23.27 102.15 -3.4 13.79 47.45 47.45 102.10 -3.4 13.79 46.36 50.91 102.10 -3.4 15.14 50.91 50.91 102.05 -3.3 15.14 49.72 54.36 101.85 -3.0 22.90 68.18 68.18 101.80 -2.9 22.90 66.47 71.63 101.80 -2.9 24.68 71.64 71.63 101.75 -2.8 24.68 69.81 75.09 100.85 -1.6 50.00 80.99 137.27 100.80 -1.6 50.00 77.94 140.72 100.80 -1.6 50.00 77.94 140.72 100.75 -1.5 50.00 74.92 144.18 </div> </div>		
Schnitt:	Anlage K2 Schnitt 2L	Seite Anlage K2/39
Kapitel:	7 LF 5 (BS-T, mit Lasten)	Archiv Nr.: 2109
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																										
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																										
<table><tr><td>99.85</td><td>-0.5</td><td>50.00</td><td>24.40</td><td>206.36</td></tr><tr><td>99.80</td><td>-0.4</td><td>50.00</td><td>21.76</td><td>209.81</td></tr><tr><td>99.80</td><td>-0.4</td><td>50.00</td><td>21.76</td><td>209.81</td></tr><tr><td>99.75</td><td>-0.4</td><td>50.00</td><td>19.13</td><td>213.26</td></tr><tr><td>98.85</td><td>0.5</td><td>50.00</td><td>-27.00</td><td>275.44</td></tr><tr><td>98.80</td><td>0.6</td><td>50.00</td><td>-29.53</td><td>278.90</td></tr><tr><td>98.80</td><td>0.6</td><td>50.00</td><td>-29.53</td><td>278.90</td></tr><tr><td>98.75</td><td>0.6</td><td>50.00</td><td>-32.06</td><td>282.35</td></tr><tr><td>98.60</td><td>0.8</td><td>50.00</td><td>-39.65</td><td>292.72</td></tr><tr><td>98.55</td><td>0.8</td><td>50.00</td><td>-42.18</td><td>296.17</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05796081 Theoretischer Fußpunkt = 98.549 m</p> <p>Einbindetiefe tg = 4.00 m Profillänge = 10.25 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k >= Bv,k G,k = 193.96 kN/m G',k = 0.00 kN/m Pv,k = 46.50 kN/m Eav,k = 60.85 kN/m (Eah,k = 344.37 kN/m) Bv,k = 69.57 Summe V,k = 231.74 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 99.43 bis 95.91 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>98.55</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 220.00 / 1.40 = 157.14 kN/m R,d = Rb,d + R,s1,d = 1022.19 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 232.75 - 0.00 + 69.98 + 55.80 = 358.53 kN/m ==> µ = V,d / R,d = 358.53 / 1022.19 = 0.35</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			99.85	-0.5	50.00	24.40	206.36	99.80	-0.4	50.00	21.76	209.81	99.80	-0.4	50.00	21.76	209.81	99.75	-0.4	50.00	19.13	213.26	98.85	0.5	50.00	-27.00	275.44	98.80	0.6	50.00	-29.53	278.90	98.80	0.6	50.00	-29.53	278.90	98.75	0.6	50.00	-32.06	282.35	98.60	0.8	50.00	-39.65	292.72	98.55	0.8	50.00	-42.18	296.17	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.55	55.00	s3: Flussskies, -sand
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Schnitt: Anlage K2 Schnitt 2L		Seite Anlage K2/40																																																										
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 22040																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																										

Statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																								
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<div>Anlage L2 Schnitt 3L</div> <div>1 LF 1 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024</div> <div>Bohrpfahlwand</div> <div>=====</div> <div>Teilsicherheitskonzept (EC 7)</div> <div>EMG TBA 3.2 - Schnitt 3</div> <div>Datei: 11_BS 3_LF1.vrb</div> <div>Datum: 20.06.2024</div> <div>Indices:</div> <div>d = Bemessungswert</div> <div>k = charakteristisch</div> <div>g = Ständig, einschließlich Wasserdruck</div> <div>q = Veränderlich</div> <div>g+q = Ständig + Veränderlich, einschließlich Wasserdruck</div> <div>w = Wasserdruck</div> <div>Wandkopf = 106.24 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m</div> <div>Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN</div> <div>Bohrpfahldurchmesser = 0.88 m</div> <div>Bohrpfahlabstand = 1.50 m</div> <div>Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN</div> <div>Grundwasserstand (Luftseite) = 105.00 mNHN</div> <div>Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten</div> <div>BS: DIN EN 1997-1: BS-T</div> <div>gamma(G) = 1.20</div> <div>gamma(G,Ruhe) = 1.10</div> <div>gamma(Q) = 1.30</div> <div>gamma(Ep) = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt)</div> <table><tr><th>Nr.</th><th>sigma</th><th>x(Luftseite)</th><th>Tiefe</th><th>y(oben)</th><th>y(unten)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>83.10</td><td>2.13</td><td>103.74</td><td>102.86</td><td>100.67</td><td>nein</td></tr><tr><td>2</td><td>10.00</td><td>2.63</td><td>103.74</td><td>102.65</td><td>99.89</td><td>nein</td></tr></table> <div>Lasten (zweiseitig begrenzt)</div> <table><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>47.50</td><td>0.00</td><td>0.33</td><td>103.74</td><td>103.74</td><td>103.47</td><td>103.33</td><td>103.33</td><td>nein</td></tr><tr><td>2</td><td>117.67</td><td>0.33</td><td>0.63</td><td>103.74</td><td>103.60</td><td>103.33</td><td>103.22</td><td>102.95</td><td>nein</td></tr><tr><td>3</td><td>111.80</td><td>0.63</td><td>0.93</td><td>103.74</td><td>103.48</td><td>102.95</td><td>102.96</td><td>102.55</td><td>nein</td></tr><tr><td>4</td><td>105.93</td><td>0.93</td><td>1.23</td><td>103.74</td><td>103.35</td><td>102.55</td><td>102.66</td><td>102.08</td><td>nein</td></tr><tr><td>5</td><td>100.07</td><td>1.23</td><td>1.53</td><td>103.74</td><td>103.23</td><td>102.08</td><td>102.36</td><td>101.61</td><td>nein</td></tr><tr><td>6</td><td>94.20</td><td>1.53</td><td>1.83</td><td>103.74</td><td>103.11</td><td>101.61</td><td>102.06</td><td>101.14</td><td>nein</td></tr><tr><td>7</td><td>88.33</td><td>1.83</td><td>2.13</td><td>103.74</td><td>102.98</td><td>101.14</td><td>101.77</td><td>100.67</td><td>nein</td></tr></table> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke</div> <table><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>0.00</td><td>14.50</td><td>106.23</td><td>104.74</td><td>Ständig</td></tr></table>			Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast	[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]	1	83.10	2.13	103.74	102.86	100.67	nein	2	10.00	2.63	103.74	102.65	99.89	nein	Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	47.50	0.00	0.33	103.74	103.74	103.47	103.33	103.33	nein	2	117.67	0.33	0.63	103.74	103.60	103.33	103.22	102.95	nein	3	111.80	0.63	0.93	103.74	103.48	102.95	102.96	102.55	nein	4	105.93	0.93	1.23	103.74	103.35	102.55	102.66	102.08	nein	5	100.07	1.23	1.53	103.74	103.23	102.08	102.36	101.61	nein	6	94.20	1.53	1.83	103.74	103.11	101.61	102.06	101.14	nein	7	88.33	1.83	2.13	103.74	102.98	101.14	101.77	100.67	nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	14.50	106.23	104.74	Ständig
Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast																																																																																																																																				
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4	105.93	0.93	1.23	103.74	103.35	102.55	102.66	102.08	nein																																																																																																																																	
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div>Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k</div> <div>[-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m]</div> <div>1 104.41 0.00 0.00 -101.70 0.00 0.00 0.00</div> <div>Art des Fußlagers:</div> <div>Profillänge von 9.84 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.24 5.000 5.000</div> <div>105.24 103.74 5.000 5.000</div> <div>103.74 102.64 5.000 5.000</div> <div>102.64 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 694.110 / 1733.737 = 0.400$</div> <div>Bettungslager $B_{h,d} = 694.110 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1733.737 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c,k d(p)/phi d(a)/phi</div> <div>pas/akt [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [-] [-]</div> <div>1 105.24 19.00/0.00 10.00/0.00 30.00/0.00 0.00/0.00 -0.667 0.667</div> <div>2 103.74 17.00/0.00 8.50/0.00 22.50/0.00 0.00/0.00 -0.667 0.667</div> <div>3 102.64 17.00/17.00 8.50/8.50 22.50/22.50 3.00/3.00 -0.667 0.667</div> <div>4 80.00 21.00/21.00 11.50/11.50 32.50/32.50 0.00/0.00 -0.667 0.667</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.24 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.74 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.64 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.240 106.230 0.000 0.000 0.00 0.00</div> <div>106.230 105.750 0.000 4.671 0.00 0.00</div> <div>105.750 105.500 4.671 7.104 0.00 0.00</div> <div>105.500 105.240 7.104 9.634 0.00 2.60</div> <div>105.240 105.000 9.634 11.970 2.60 5.00</div> <div>105.000 104.740 11.970 14.500 5.00 5.00</div> <div>104.740 104.410 0.000 0.000 5.00 5.00</div> <div>104.410 104.204 0.000 0.000 5.00 5.00</div> <div>104.204 103.740 0.000 0.000 5.00 5.00</div> <div>103.740 103.740 0.000 0.000 5.00 5.00</div> <div>103.740 103.603 0.000 22.696 5.00 5.00</div> <div>103.603 103.479 22.696 49.526 5.00 5.00</div> <div>103.479 103.467 49.526 53.506 5.00 5.00</div> <div>103.467 103.355 53.506 70.666 5.00 5.00</div> <div>103.355 103.325 70.666 77.203 5.00 5.00</div> <div>103.325 103.231 77.203 93.810 5.00 5.00</div> <div>103.231 103.216 93.810 97.019 5.00 5.00</div> <div>103.216 103.106 97.019 96.992 5.00 5.00</div> <div>103.106 102.982 96.992 100.884 5.00 5.00</div> <div>102.982 102.957 100.884 102.292 5.00 5.00</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/2
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

22.06.2024

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																							
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<table><tr><td>102.957</td><td>102.948</td><td>102.292</td><td>101.556</td><td>5.00</td><td>5.00</td></tr><tr><td>102.948</td><td>102.858</td><td>101.556</td><td>104.337</td><td>5.00</td><td>5.00</td></tr><tr><td>102.858</td><td>102.659</td><td>104.337</td><td>114.244</td><td>5.00</td><td>5.00</td></tr><tr><td>102.659</td><td>102.651</td><td>114.244</td><td>113.879</td><td>5.00</td><td>5.00</td></tr><tr><td>102.651</td><td>102.640</td><td>113.879</td><td>113.451</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.597</td><td>82.016</td><td>80.819</td><td>5.00</td><td>5.00</td></tr><tr><td>102.597</td><td>102.553</td><td>80.819</td><td>79.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.553</td><td>102.362</td><td>79.622</td><td>84.235</td><td>5.00</td><td>5.00</td></tr><tr><td>102.362</td><td>102.223</td><td>84.235</td><td>80.954</td><td>5.00</td><td>5.00</td></tr><tr><td>102.223</td><td>102.083</td><td>80.954</td><td>77.673</td><td>5.00</td><td>5.00</td></tr><tr><td>102.083</td><td>102.065</td><td>77.673</td><td>77.873</td><td>5.00</td><td>5.00</td></tr><tr><td>102.065</td><td>101.768</td><td>77.873</td><td>70.296</td><td>5.00</td><td>5.00</td></tr><tr><td>101.768</td><td>101.613</td><td>70.296</td><td>61.903</td><td>5.00</td><td>5.00</td></tr><tr><td>101.613</td><td>101.195</td><td>61.903</td><td>49.733</td><td>5.00</td><td>5.00</td></tr><tr><td>101.195</td><td>101.143</td><td>49.733</td><td>48.212</td><td>5.00</td><td>5.00</td></tr><tr><td>101.143</td><td>100.672</td><td>48.212</td><td>43.598</td><td>5.00</td><td>5.00</td></tr><tr><td>100.672</td><td>100.231</td><td>43.598</td><td>45.976</td><td>5.00</td><td>5.00</td></tr><tr><td>100.231</td><td>99.889</td><td>45.976</td><td>47.825</td><td>5.00</td><td>5.00</td></tr><tr><td>99.889</td><td>99.191</td><td>47.825</td><td>50.688</td><td>5.00</td><td>5.00</td></tr><tr><td>99.191</td><td>98.592</td><td>50.688</td><td>53.141</td><td>5.00</td><td>5.00</td></tr><tr><td>98.592</td><td>98.194</td><td>53.141</td><td>54.777</td><td>5.00</td><td>5.00</td></tr><tr><td>98.194</td><td>97.196</td><td>54.777</td><td>58.867</td><td>5.00</td><td>5.00</td></tr><tr><td>97.196</td><td>96.399</td><td>58.867</td><td>62.139</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>80.000</td><td>62.139</td><td>129.400</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.24</td><td>105.75</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.24</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>103.74</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>102.64</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.23</td><td>105.75</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>105.50</td><td>0.00</td><td>-14.63</td></tr><tr><td>105.50</td><td>105.24</td><td>-14.63</td><td>-29.85</td></tr><tr><td>105.24</td><td>105.00</td><td>-18.09</td><td>-25.71</td></tr><tr><td>105.00</td><td>104.74</td><td>-25.71</td><td>-29.83</td></tr><tr><td>104.74</td><td>104.41</td><td>-29.83</td><td>-35.07</td></tr><tr><td>104.41</td><td>104.20</td><td>-35.07</td><td>-38.34</td></tr><tr><td>104.20</td><td>103.74</td><td>-38.34</td><td>-45.70</td></tr><tr><td>103.74</td><td>103.74</td><td>-52.92</td><td>-45.70</td></tr><tr><td>103.74</td><td>103.60</td><td>-52.92</td><td>-55.09</td></tr><tr><td>103.60</td><td>103.48</td><td>-55.09</td><td>-57.06</td></tr><tr><td>103.48</td><td>103.47</td><td>-57.06</td><td>-57.26</td></tr><tr><td>103.47</td><td>103.35</td><td>-57.26</td><td>-59.03</td></tr><tr><td>103.35</td><td>103.33</td><td>-59.03</td><td>-59.50</td></tr><tr><td>103.33</td><td>103.23</td><td>-59.50</td><td>-61.00</td></tr><tr><td>103.23</td><td>103.22</td><td>-61.00</td><td>-61.24</td></tr><tr><td>103.22</td><td>103.11</td><td>-61.24</td><td>-62.98</td></tr><tr><td>103.11</td><td>102.98</td><td>-62.98</td><td>-64.95</td></tr><tr><td>102.98</td><td>102.96</td><td>-64.95</td><td>-65.35</td></tr><tr><td>102.96</td><td>102.95</td><td>-65.35</td><td>-65.49</td></tr><tr><td>102.95</td><td>102.86</td><td>-65.49</td><td>-66.92</td></tr><tr><td>102.86</td><td>102.66</td><td>-66.92</td><td>-70.07</td></tr><tr><td>102.66</td><td>102.65</td><td>-70.07</td><td>-70.21</td></tr><tr><td>102.65</td><td>102.64</td><td>-70.21</td><td>-70.37</td></tr><tr><td>102.64</td><td>102.60</td><td>-125.03</td><td>-126.87</td></tr><tr><td>102.60</td><td>102.55</td><td>-126.87</td><td>-128.71</td></tr></table>								102.957	102.948	102.292	101.556	5.00	5.00	102.948	102.858	101.556	104.337	5.00	5.00	102.858	102.659	104.337	114.244	5.00	5.00	102.659	102.651	114.244	113.879	5.00	5.00	102.651	102.640	113.879	113.451	5.00	5.00	102.640	102.597	82.016	80.819	5.00	5.00	102.597	102.553	80.819	79.622	5.00	5.00	102.553	102.362	79.622	84.235	5.00	5.00	102.362	102.223	84.235	80.954	5.00	5.00	102.223	102.083	80.954	77.673	5.00	5.00	102.083	102.065	77.673	77.873	5.00	5.00	102.065	101.768	77.873	70.296	5.00	5.00	101.768	101.613	70.296	61.903	5.00	5.00	101.613	101.195	61.903	49.733	5.00	5.00	101.195	101.143	49.733	48.212	5.00	5.00	101.143	100.672	48.212	43.598	5.00	5.00	100.672	100.231	43.598	45.976	5.00	5.00	100.231	99.889	45.976	47.825	5.00	5.00	99.889	99.191	47.825	50.688	5.00	5.00	99.191	98.592	50.688	53.141	5.00	5.00	98.592	98.194	53.141	54.777	5.00	5.00	98.194	97.196	54.777	58.867	5.00	5.00	97.196	96.399	58.867	62.139	5.00	5.00	96.399	80.000	62.139	129.400	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.24	105.75	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.24	5.005	5.388	30.000	-20.01	18.10	2	103.74	3.034	3.911	22.500	-15.01	23.23	3	102.64	3.034	3.911	22.500	-15.01	23.23	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.23	105.75	0.00	0.00	105.75	105.50	0.00	-14.63	105.50	105.24	-14.63	-29.85	105.24	105.00	-18.09	-25.71	105.00	104.74	-25.71	-29.83	104.74	104.41	-29.83	-35.07	104.41	104.20	-35.07	-38.34	104.20	103.74	-38.34	-45.70	103.74	103.74	-52.92	-45.70	103.74	103.60	-52.92	-55.09	103.60	103.48	-55.09	-57.06	103.48	103.47	-57.06	-57.26	103.47	103.35	-57.26	-59.03	103.35	103.33	-59.03	-59.50	103.33	103.23	-59.50	-61.00	103.23	103.22	-61.00	-61.24	103.22	103.11	-61.24	-62.98	103.11	102.98	-62.98	-64.95	102.98	102.96	-64.95	-65.35	102.96	102.95	-65.35	-65.49	102.95	102.86	-65.49	-66.92	102.86	102.66	-66.92	-70.07	102.66	102.65	-70.07	-70.21	102.65	102.64	-70.21	-70.37	102.64	102.60	-125.03	-126.87	102.60	102.55	-126.87	-128.71
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2	103.74	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																																							
3	102.64	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																																							
4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																																							
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105.75	105.50	0.00	-14.63																																																																																																																																																																																																																																																																																																																										
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105.24	105.00	-18.09	-25.71																																																																																																																																																																																																																																																																																																																										
105.00	104.74	-25.71	-29.83																																																																																																																																																																																																																																																																																																																										
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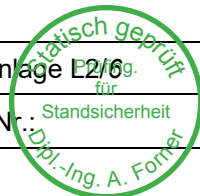
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>102.55 102.36 -128.71 -136.84</div> <div>102.36 102.22 -136.84 -142.77</div> <div>102.22 102.08 -142.77 -148.70</div> <div>102.08 102.06 -148.70 -149.48</div> <div>102.06 101.77 -149.48 -162.11</div> <div>101.77 101.61 -162.11 -168.69</div> <div>101.61 101.19 -168.69 -186.45</div> <div>101.19 101.14 -186.45 -188.67</div> <div>101.14 100.67 -188.67 -208.66</div> <div>100.67 100.23 -208.66 -227.40</div> <div>100.23 99.89 -227.40 -241.97</div> <div>99.89 99.19 -241.97 -271.64</div> <div>99.19 98.59 -271.64 -297.06</div> <div>98.59 98.19 -297.06 -314.02</div> <div>98.19 97.20 -314.02 -356.39</div> <div>97.20 96.40 -356.39 -390.30</div> <div>96.40 80.00 -390.30 -1087.28</div> <div>Schnittgrößen (Bemessungswerte)</div> <div>Tiefe N Q M</div> <div>[mNHN] [kN/m] [kN/m] [kN·m/m]</div> <div>106.24 0.0 0.0 0.0</div> <div>106.23 -0.2 0.0 0.0</div> <div>105.75 -10.7 -1.3 -0.2</div> <div>105.50 -15.0 -0.2 -0.5</div> <div>105.24 -17.0 7.0 0.3</div> <div>105.00 -19.6 12.6 2.6</div> <div>104.74 -22.2 18.8 6.7</div> <div>104.41 -25.6 30.8 14.9</div> <div>104.41 -25.6 -91.3 14.9</div> <div>104.20 -27.9 -84.3 -3.2</div> <div>103.74 -33.5 -70.1 -38.9</div> <div>103.74 -33.5 -70.1 -38.9</div> <div>103.60 -35.2 -69.8 -48.5</div> <div>103.48 -36.8 -71.6 -57.2</div> <div>103.47 -37.0 -72.0 -58.1</div> <div>103.35 -38.5 -77.1 -66.4</div> <div>103.33 -38.9 -78.9 -68.7</div> <div>103.23 -40.2 -85.9 -76.5</div> <div>103.22 -40.4 -87.2 -77.8</div> <div>103.11 -41.9 -96.9 -87.9</div> <div>102.98 -43.7 -108.2 -100.6</div> <div>102.96 -44.0 -110.7 -103.4</div> <div>102.95 -44.2 -111.5 -104.4</div> <div>102.86 -45.5 -120.3 -114.8</div> <div>102.66 -48.4 -141.3 -140.7</div> <div>102.65 -48.5 -142.3 -141.9</div> <div>102.64 -48.7 -143.4 -143.4</div> <div>102.60 -49.2 -146.7 -149.7</div> <div>102.55 -46.0 -140.5 -156.0</div> <div>102.36 -32.6 -115.2 -180.4</div> <div>102.22 -23.5 -98.7 -195.3</div> <div>102.08 -15.0 -83.1 -207.9</div> <div>102.06 -13.9 -81.2 -209.4</div> <div>101.77 2.1 -51.5 -229.1</div> <div>101.61 9.5 -37.1 -235.9</div> <div>101.19 26.4 -1.0 -243.7</div> <div>101.14 28.2 3.2 -243.6</div> <div>100.67 41.8 35.8 -234.1</div> <div>100.23 50.9 57.5 -213.2</div> <div>99.89 55.8 68.2 -191.5</div> <div>99.19 61.3 76.7 -140.0</div> <div>98.59 62.5 72.9 -94.8</div> <div>98.19 62.0 66.0 -67.0</div> <div>97.20 57.1 35.8 -14.9</div> <div>96.40 50.1 0.0 0.0</div>		
Schnitt:	Anlage L2 Schnitt 3L	Seite Anlage L2/4
Kapitel:	1 LF 1 (BS-T)	Archiv Nr.: 19
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																
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<div>Schnittgrößen ([g+q+w],k)</div> 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102.08	-14.2	-71.2	-174.6																																																																																																																																																																																																																																																																																				
102.06	-13.3	-69.5	-175.8																																																																																																																																																																																																																																																																																				
101.77	0.4	-44.5	-192.7																																																																																																																																																																																																																																																																																				
101.61	6.7	-32.3	-198.7																																																																																																																																																																																																																																																																																				
101.19	21.0	-1.7	-205.6																																																																																																																																																																																																																																																																																				
101.14	22.6	1.9	-205.6																																																																																																																																																																																																																																																																																				
100.67	34.3	29.7	-197.9																																																																																																																																																																																																																																																																																				
100.23	42.0	48.3	-180.4																																																																																																																																																																																																																																																																																				
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<div><div><div>98.190.00.00.0</div><div>97.200.00.00.0</div><div>96.400.00.00.0</div></div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.24</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-9.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-9.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-8.9</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-8.7</td><td>2.19</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-8.6</td><td>2.19</td><td>18.85</td><td>23.77</td></tr><tr><td>105.50</td><td>-8.6</td><td>2.76</td><td>23.77</td><td>23.77</td></tr><tr><td>105.45</td><td>-8.5</td><td>2.76</td><td>23.55</td><td>28.72</td></tr><tr><td>105.29</td><td>-8.3</td><td>5.00</td><td>41.43</td><td>43.55</td></tr><tr><td>105.24</td><td>-8.2</td><td>5.00</td><td>41.03</td><td>48.50</td></tr><tr><td>105.24</td><td>-8.2</td><td>3.58</td><td>29.40</td><td>29.40</td></tr><tr><td>105.19</td><td>-8.1</td><td>3.58</td><td>29.13</td><td>31.87</td></tr><tr><td>105.05</td><td>-7.9</td><td>4.97</td><td>39.30</td><td>39.30</td></tr><tr><td>105.00</td><td>-7.8</td><td>4.97</td><td>38.93</td><td>41.77</td></tr><tr><td>105.00</td><td>-7.8</td><td>5.00</td><td>39.16</td><td>41.77</td></tr><tr><td>104.95</td><td>-7.8</td><td>5.00</td><td>38.76</td><td>43.11</td></tr><tr><td>104.79</td><td>-7.5</td><td>5.00</td><td>37.55</td><td>47.14</td></tr><tr><td>104.74</td><td>-7.4</td><td>5.00</td><td>37.14</td><td>48.48</td></tr><tr><td>104.74</td><td>-7.4</td><td>5.00</td><td>37.14</td><td>48.48</td></tr><tr><td>104.69</td><td>-7.4</td><td>5.00</td><td>36.78</td><td>49.69</td></tr><tr><td>104.46</td><td>-7.0</td><td>5.00</td><td>34.94</td><td>55.77</td></tr><tr><td>104.41</td><td>-6.9</td><td>5.00</td><td>34.58</td><td>56.99</td></tr><tr><td>104.41</td><td>-6.9</td><td>5.00</td><td>34.58</td><td>56.99</td></tr><tr><td>104.36</td><td>-6.8</td><td>5.00</td><td>34.17</td><td>58.31</td></tr><tr><td>104.26</td><td>-6.7</td><td>5.00</td><td>33.37</td><td>60.97</td></tr><tr><td>104.20</td><td>-6.6</td><td>5.00</td><td>32.97</td><td>62.30</td></tr><tr><td>104.20</td><td>-6.6</td><td>5.00</td><td>32.97</td><td>62.30</td></tr><tr><td>104.15</td><td>-6.5</td><td>5.00</td><td>32.56</td><td>63.63</td></tr><tr><td>103.79</td><td>-6.0</td><td>5.00</td><td>29.75</td><td>72.93</td></tr><tr><td>103.74</td><td>-5.9</td><td>5.00</td><td>29.36</td><td>74.26</td></tr><tr><td>103.74</td><td>-5.9</td><td>5.00</td><td>29.36</td><td>85.99</td></tr><tr><td>103.74</td><td>-5.9</td><td>5.00</td><td>29.34</td><td>86.06</td></tr><tr><td>103.74</td><td>-5.9</td><td>5.00</td><td>29.34</td><td>86.06</td></tr><tr><td>103.69</td><td>-5.8</td><td>5.00</td><td>28.99</td><td>87.21</td></tr><tr><td>103.65</td><td>-5.7</td><td>5.00</td><td>28.65</td><td>88.37</td></tr><tr><td>103.60</td><td>-5.7</td><td>5.00</td><td>28.30</td><td>89.52</td></tr><tr><td>103.60</td><td>-5.7</td><td>5.00</td><td>28.30</td><td>89.52</td></tr><tr><td>103.54</td><td>-5.6</td><td>5.00</td><td>27.82</td><td>91.12</td></tr><tr><td>103.54</td><td>-5.6</td><td>5.00</td><td>27.82</td><td>91.12</td></tr><tr><td>103.48</td><td>-5.5</td><td>5.00</td><td>27.35</td><td>92.72</td></tr><tr><td>103.48</td><td>-5.5</td><td>5.00</td><td>27.35</td><td>92.72</td></tr><tr><td>103.47</td><td>-5.5</td><td>5.00</td><td>27.25</td><td>93.04</td></tr><tr><td>103.47</td><td>-5.5</td><td>5.00</td><td>27.25</td><td>93.04</td></tr><tr><td>103.41</td><td>-5.4</td><td>5.00</td><td>26.83</td><td>94.49</td></tr><tr><td>103.41</td><td>-5.4</td><td>5.00</td><td>26.83</td><td>94.49</td></tr><tr><td>103.35</td><td>-5.3</td><td>5.00</td><td>26.40</td><td>95.93</td></tr><tr><td>103.35</td><td>-5.3</td><td>5.00</td><td>26.40</td><td>95.93</td></tr><tr><td>103.33</td><td>-5.2</td><td>5.00</td><td>26.17</td><td>96.70</td></tr><tr><td>103.33</td><td>-5.2</td><td>5.00</td><td>26.17</td><td>96.70</td></tr><tr><td>103.28</td><td>-5.2</td><td>5.00</td><td>25.82</td><td>97.91</td></tr><tr><td>103.28</td><td>-5.2</td><td>5.00</td><td>25.82</td><td>97.91</td></tr><tr><td>103.23</td><td>-5.1</td><td>5.00</td><td>25.46</td><td>99.13</td></tr><tr><td>103.23</td><td>-5.1</td><td>5.00</td><td>25.46</td><td>99.13</td></tr><tr><td>103.22</td><td>-5.1</td><td>5.00</td><td>25.35</td><td>99.51</td></tr><tr><td>103.22</td><td>-5.1</td><td>5.00</td><td>25.35</td><td>99.51</td></tr><tr><td>103.16</td><td>-5.0</td><td>5.00</td><td>24.94</td><td>100.92</td></tr><tr><td>103.16</td><td>-5.0</td><td>5.00</td><td>24.94</td><td>100.92</td></tr><tr><td>103.11</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>102.34</td></tr><tr><td>103.11</td><td>-4.9</td><td>5.00</td><td>24.53</td><td>102.34</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-9.8	-	-	-	106.23	-9.7	-	-	-	106.23	-9.7	-	-	-	106.18	-9.7	-	-	-	105.80	-9.1	-	-	-	105.75	-9.0	0.00	0.00	0.00	105.75	-9.0	0.00	0.00	0.00	105.70	-8.9	0.00	0.00	4.75	105.55	-8.7	2.19	19.02	19.02	105.50	-8.6	2.19	18.85	23.77	105.50	-8.6	2.76	23.77	23.77	105.45	-8.5	2.76	23.55	28.72	105.29	-8.3	5.00	41.43	43.55	105.24	-8.2	5.00	41.03	48.50	105.24	-8.2	3.58	29.40	29.40	105.19	-8.1	3.58	29.13	31.87	105.05	-7.9	4.97	39.30	39.30	105.00	-7.8	4.97	38.93	41.77	105.00	-7.8	5.00	39.16	41.77	104.95	-7.8	5.00	38.76	43.11	104.79	-7.5	5.00	37.55	47.14	104.74	-7.4	5.00	37.14	48.48	104.74	-7.4	5.00	37.14	48.48	104.69	-7.4	5.00	36.78	49.69	104.46	-7.0	5.00	34.94	55.77	104.41	-6.9	5.00	34.58	56.99	104.41	-6.9	5.00	34.58	56.99	104.36	-6.8	5.00	34.17	58.31	104.26	-6.7	5.00	33.37	60.97	104.20	-6.6	5.00	32.97	62.30	104.20	-6.6	5.00	32.97	62.30	104.15	-6.5	5.00	32.56	63.63	103.79	-6.0	5.00	29.75	72.93	103.74	-5.9	5.00	29.36	74.26	103.74	-5.9	5.00	29.36	85.99	103.74	-5.9	5.00	29.34	86.06	103.74	-5.9	5.00	29.34	86.06	103.69	-5.8	5.00	28.99	87.21	103.65	-5.7	5.00	28.65	88.37	103.60	-5.7	5.00	28.30	89.52	103.60	-5.7	5.00	28.30	89.52	103.54	-5.6	5.00	27.82	91.12	103.54	-5.6	5.00	27.82	91.12	103.48	-5.5	5.00	27.35	92.72	103.48	-5.5	5.00	27.35	92.72	103.47	-5.5	5.00	27.25	93.04	103.47	-5.5	5.00	27.25	93.04	103.41	-5.4	5.00	26.83	94.49	103.41	-5.4	5.00	26.83	94.49	103.35	-5.3	5.00	26.40	95.93	103.35	-5.3	5.00	26.40	95.93	103.33	-5.2	5.00	26.17	96.70	103.33	-5.2	5.00	26.17	96.70	103.28	-5.2	5.00	25.82	97.91	103.28	-5.2	5.00	25.82	97.91	103.23	-5.1	5.00	25.46	99.13	103.23	-5.1	5.00	25.46	99.13	103.22	-5.1	5.00	25.35	99.51	103.22	-5.1	5.00	25.35	99.51	103.16	-5.0	5.00	24.94	100.92	103.16	-5.0	5.00	24.94	100.92	103.11	-4.9	5.00	24.53	102.34	103.11	-4.9	5.00	24.53	102.34
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105.80	-9.1	-	-	-																																																																																																																																																																																																																																																																																																																																						
105.75	-9.0	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																						
105.75	-9.0	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																						
105.70	-8.9	0.00	0.00	4.75																																																																																																																																																																																																																																																																																																																																						
105.55	-8.7	2.19	19.02	19.02																																																																																																																																																																																																																																																																																																																																						
105.50	-8.6	2.19	18.85	23.77																																																																																																																																																																																																																																																																																																																																						
105.50	-8.6	2.76	23.77	23.77																																																																																																																																																																																																																																																																																																																																						
105.45	-8.5	2.76	23.55	28.72																																																																																																																																																																																																																																																																																																																																						
105.29	-8.3	5.00	41.43	43.55																																																																																																																																																																																																																																																																																																																																						
105.24	-8.2	5.00	41.03	48.50																																																																																																																																																																																																																																																																																																																																						
105.24	-8.2	3.58	29.40	29.40																																																																																																																																																																																																																																																																																																																																						
105.19	-8.1	3.58	29.13	31.87																																																																																																																																																																																																																																																																																																																																						
105.05	-7.9	4.97	39.30	39.30																																																																																																																																																																																																																																																																																																																																						
105.00	-7.8	4.97	38.93	41.77																																																																																																																																																																																																																																																																																																																																						
105.00	-7.8	5.00	39.16	41.77																																																																																																																																																																																																																																																																																																																																						
104.95	-7.8	5.00	38.76	43.11																																																																																																																																																																																																																																																																																																																																						
104.79	-7.5	5.00	37.55	47.14																																																																																																																																																																																																																																																																																																																																						
104.74	-7.4	5.00	37.14	48.48																																																																																																																																																																																																																																																																																																																																						
104.74	-7.4	5.00	37.14	48.48																																																																																																																																																																																																																																																																																																																																						
104.69	-7.4	5.00	36.78	49.69																																																																																																																																																																																																																																																																																																																																						
104.46	-7.0	5.00	34.94	55.77																																																																																																																																																																																																																																																																																																																																						
104.41	-6.9	5.00	34.58	56.99																																																																																																																																																																																																																																																																																																																																						
104.41	-6.9	5.00	34.58	56.99																																																																																																																																																																																																																																																																																																																																						
104.36	-6.8	5.00	34.17	58.31																																																																																																																																																																																																																																																																																																																																						
104.26	-6.7	5.00	33.37	60.97																																																																																																																																																																																																																																																																																																																																						
104.20	-6.6	5.00	32.97	62.30																																																																																																																																																																																																																																																																																																																																						
104.20	-6.6	5.00	32.97	62.30																																																																																																																																																																																																																																																																																																																																						
104.15	-6.5	5.00	32.56	63.63																																																																																																																																																																																																																																																																																																																																						
103.79	-6.0	5.00	29.75	72.93																																																																																																																																																																																																																																																																																																																																						
103.74	-5.9	5.00	29.36	74.26																																																																																																																																																																																																																																																																																																																																						
103.74	-5.9	5.00	29.36	85.99																																																																																																																																																																																																																																																																																																																																						
103.74	-5.9	5.00	29.34	86.06																																																																																																																																																																																																																																																																																																																																						
103.74	-5.9	5.00	29.34	86.06																																																																																																																																																																																																																																																																																																																																						
103.69	-5.8	5.00	28.99	87.21																																																																																																																																																																																																																																																																																																																																						
103.65	-5.7	5.00	28.65	88.37																																																																																																																																																																																																																																																																																																																																						
103.60	-5.7	5.00	28.30	89.52																																																																																																																																																																																																																																																																																																																																						
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103.54	-5.6	5.00	27.82	91.12																																																																																																																																																																																																																																																																																																																																						
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103.48	-5.5	5.00	27.35	92.72																																																																																																																																																																																																																																																																																																																																						
103.48	-5.5	5.00	27.35	92.72																																																																																																																																																																																																																																																																																																																																						
103.47	-5.5	5.00	27.25	93.04																																																																																																																																																																																																																																																																																																																																						
103.47	-5.5	5.00	27.25	93.04																																																																																																																																																																																																																																																																																																																																						
103.41	-5.4	5.00	26.83	94.49																																																																																																																																																																																																																																																																																																																																						
103.41	-5.4	5.00	26.83	94.49																																																																																																																																																																																																																																																																																																																																						
103.35	-5.3	5.00	26.40	95.93																																																																																																																																																																																																																																																																																																																																						
103.35	-5.3	5.00	26.40	95.93																																																																																																																																																																																																																																																																																																																																						
103.33	-5.2	5.00	26.17	96.70																																																																																																																																																																																																																																																																																																																																						
103.33	-5.2	5.00	26.17	96.70																																																																																																																																																																																																																																																																																																																																						
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103.23	-5.1	5.00	25.46	99.13																																																																																																																																																																																																																																																																																																																																						
103.23	-5.1	5.00	25.46	99.13																																																																																																																																																																																																																																																																																																																																						
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103.22	-5.1	5.00	25.35	99.51																																																																																																																																																																																																																																																																																																																																						
103.16	-5.0	5.00	24.94	100.92																																																																																																																																																																																																																																																																																																																																						
103.16	-5.0	5.00	24.94	100.92																																																																																																																																																																																																																																																																																																																																						
103.11	-4.9	5.00	24.53	102.34																																																																																																																																																																																																																																																																																																																																						
103.11	-4.9	5.00	24.53	102.34																																																																																																																																																																																																																																																																																																																																						
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																				
<table><tr><td>103.04</td><td>-4.8</td><td>5.00</td><td>24.07</td><td>103.94</td></tr><tr><td>103.04</td><td>-4.8</td><td>5.00</td><td>24.07</td><td>103.94</td></tr><tr><td>102.98</td><td>-4.7</td><td>5.00</td><td>23.61</td><td>105.54</td></tr><tr><td>102.98</td><td>-4.7</td><td>5.00</td><td>23.61</td><td>105.54</td></tr><tr><td>102.96</td><td>-4.7</td><td>5.00</td><td>23.42</td><td>106.20</td></tr><tr><td>102.96</td><td>-4.7</td><td>5.00</td><td>23.42</td><td>106.20</td></tr><tr><td>102.95</td><td>-4.7</td><td>5.00</td><td>23.35</td><td>106.42</td></tr><tr><td>102.95</td><td>-4.7</td><td>5.00</td><td>23.35</td><td>106.42</td></tr><tr><td>102.90</td><td>-4.6</td><td>5.00</td><td>23.02</td><td>107.58</td></tr><tr><td>102.90</td><td>-4.6</td><td>5.00</td><td>23.02</td><td>107.58</td></tr><tr><td>102.86</td><td>-4.5</td><td>5.00</td><td>22.69</td><td>108.74</td></tr><tr><td>102.86</td><td>-4.5</td><td>5.00</td><td>22.69</td><td>108.74</td></tr><tr><td>102.81</td><td>-4.5</td><td>5.00</td><td>22.33</td><td>110.02</td></tr><tr><td>102.71</td><td>-4.3</td><td>5.00</td><td>21.62</td><td>112.58</td></tr><tr><td>102.66</td><td>-4.3</td><td>5.00</td><td>21.27</td><td>113.86</td></tr><tr><td>102.66</td><td>-4.3</td><td>5.00</td><td>21.27</td><td>113.86</td></tr><tr><td>102.65</td><td>-4.2</td><td>5.00</td><td>21.20</td><td>114.08</td></tr><tr><td>102.65</td><td>-4.2</td><td>5.00</td><td>21.20</td><td>114.08</td></tr><tr><td>102.64</td><td>-4.2</td><td>5.00</td><td>21.13</td><td>114.36</td></tr><tr><td>102.64</td><td>-4.2</td><td>5.00</td><td>21.13</td><td>203.17</td></tr><tr><td>102.60</td><td>-4.2</td><td>5.00</td><td>20.82</td><td>206.17</td></tr><tr><td>102.60</td><td>-4.2</td><td>49.51</td><td>206.17</td><td>206.17</td></tr><tr><td>102.55</td><td>-4.1</td><td>49.51</td><td>203.16</td><td>209.16</td></tr><tr><td>102.55</td><td>-4.1</td><td>50.00</td><td>205.18</td><td>209.16</td></tr><tr><td>102.51</td><td>-4.0</td><td>50.00</td><td>201.84</td><td>212.46</td></tr><tr><td>102.41</td><td>-3.9</td><td>50.00</td><td>195.26</td><td>219.07</td></tr><tr><td>102.36</td><td>-3.8</td><td>50.00</td><td>192.01</td><td>222.37</td></tr><tr><td>102.36</td><td>-3.8</td><td>50.00</td><td>192.01</td><td>222.37</td></tr><tr><td>102.32</td><td>-3.8</td><td>50.00</td><td>188.88</td><td>225.58</td></tr><tr><td>102.27</td><td>-3.7</td><td>50.00</td><td>185.77</td><td>228.79</td></tr><tr><td>102.22</td><td>-3.7</td><td>50.00</td><td>182.70</td><td>232.01</td></tr><tr><td>102.22</td><td>-3.7</td><td>50.00</td><td>182.70</td><td>232.01</td></tr><tr><td>102.18</td><td>-3.6</td><td>50.00</td><td>179.65</td><td>235.22</td></tr><tr><td>102.13</td><td>-3.5</td><td>50.00</td><td>176.64</td><td>238.43</td></tr><tr><td>102.08</td><td>-3.5</td><td>50.00</td><td>173.66</td><td>241.64</td></tr><tr><td>102.08</td><td>-3.5</td><td>50.00</td><td>173.66</td><td>241.64</td></tr><tr><td>102.06</td><td>-3.4</td><td>50.00</td><td>172.49</td><td>242.90</td></tr><tr><td>102.06</td><td>-3.4</td><td>50.00</td><td>172.49</td><td>242.90</td></tr><tr><td>102.02</td><td>-3.4</td><td>50.00</td><td>169.36</td><td>246.32</td></tr><tr><td>101.82</td><td>-3.1</td><td>50.00</td><td>157.23</td><td>260.01</td></tr><tr><td>101.77</td><td>-3.1</td><td>50.00</td><td>154.29</td><td>263.43</td></tr><tr><td>101.77</td><td>-3.1</td><td>50.00</td><td>154.29</td><td>263.43</td></tr><tr><td>101.72</td><td>-3.0</td><td>50.00</td><td>151.28</td><td>266.99</td></tr><tr><td>101.66</td><td>-3.0</td><td>50.00</td><td>148.31</td><td>270.56</td></tr><tr><td>101.61</td><td>-2.9</td><td>50.00</td><td>145.38</td><td>274.12</td></tr><tr><td>101.61</td><td>-2.9</td><td>50.00</td><td>145.38</td><td>274.12</td></tr><tr><td>101.56</td><td>-2.8</td><td>50.00</td><td>142.46</td><td>277.73</td></tr><tr><td>101.25</td><td>-2.5</td><td>50.00</td><td>125.94</td><td>299.38</td></tr><tr><td>101.19</td><td>-2.5</td><td>50.00</td><td>123.35</td><td>302.99</td></tr><tr><td>101.19</td><td>-2.5</td><td>50.00</td><td>123.35</td><td>302.99</td></tr><tr><td>101.14</td><td>-2.4</td><td>50.00</td><td>120.81</td><td>306.60</td></tr><tr><td>101.14</td><td>-2.4</td><td>50.00</td><td>120.81</td><td>306.60</td></tr><tr><td>101.09</td><td>-2.4</td><td>50.00</td><td>118.32</td><td>310.20</td></tr><tr><td>100.72</td><td>-2.0</td><td>50.00</td><td>102.19</td><td>335.47</td></tr><tr><td>100.67</td><td>-2.0</td><td>50.00</td><td>100.08</td><td>339.07</td></tr><tr><td>100.67</td><td>-2.0</td><td>50.00</td><td>100.08</td><td>339.07</td></tr><tr><td>100.62</td><td>-2.0</td><td>50.00</td><td>98.14</td><td>342.46</td></tr><tr><td>100.28</td><td>-1.7</td><td>50.00</td><td>85.64</td><td>366.14</td></tr><tr><td>100.23</td><td>-1.7</td><td>50.00</td><td>84.01</td><td>369.52</td></tr><tr><td>100.23</td><td>-1.7</td><td>50.00</td><td>84.01</td><td>369.52</td></tr><tr><td>100.18</td><td>-1.6</td><td>50.00</td><td>82.41</td><td>372.91</td></tr><tr><td>99.94</td><td>-1.5</td><td>50.00</td><td>74.96</td><td>389.82</td></tr><tr><td>99.89</td><td>-1.5</td><td>50.00</td><td>73.58</td><td>393.21</td></tr><tr><td>99.89</td><td>-1.5</td><td>50.00</td><td>73.58</td><td>393.21</td></tr><tr><td>99.84</td><td>-1.4</td><td>50.00</td><td>72.20</td><td>396.65</td></tr><tr><td>99.24</td><td>-1.2</td><td>50.00</td><td>58.11</td><td>437.97</td></tr><tr><td>99.19</td><td>-1.1</td><td>50.00</td><td>57.12</td><td>441.41</td></tr><tr><td>99.19</td><td>-1.1</td><td>50.00</td><td>57.12</td><td>441.41</td></tr><tr><td>99.14</td><td>-1.1</td><td>50.00</td><td>56.16</td><td>444.85</td></tr><tr><td>98.64</td><td>-1.0</td><td>50.00</td><td>47.73</td><td>479.29</td></tr><tr><td>98.59</td><td>-0.9</td><td>50.00</td><td>47.00</td><td>482.73</td></tr></table>							103.04	-4.8	5.00	24.07	103.94	103.04	-4.8	5.00	24.07	103.94	102.98	-4.7	5.00	23.61	105.54	102.98	-4.7	5.00	23.61	105.54	102.96	-4.7	5.00	23.42	106.20	102.96	-4.7	5.00	23.42	106.20	102.95	-4.7	5.00	23.35	106.42	102.95	-4.7	5.00	23.35	106.42	102.90	-4.6	5.00	23.02	107.58	102.90	-4.6	5.00	23.02	107.58	102.86	-4.5	5.00	22.69	108.74	102.86	-4.5	5.00	22.69	108.74	102.81	-4.5	5.00	22.33	110.02	102.71	-4.3	5.00	21.62	112.58	102.66	-4.3	5.00	21.27	113.86	102.66	-4.3	5.00	21.27	113.86	102.65	-4.2	5.00	21.20	114.08	102.65	-4.2	5.00	21.20	114.08	102.64	-4.2	5.00	21.13	114.36	102.64	-4.2	5.00	21.13	203.17	102.60	-4.2	5.00	20.82	206.17	102.60	-4.2	49.51	206.17	206.17	102.55	-4.1	49.51	203.16	209.16	102.55	-4.1	50.00	205.18	209.16	102.51	-4.0	50.00	201.84	212.46	102.41	-3.9	50.00	195.26	219.07	102.36	-3.8	50.00	192.01	222.37	102.36	-3.8	50.00	192.01	222.37	102.32	-3.8	50.00	188.88	225.58	102.27	-3.7	50.00	185.77	228.79	102.22	-3.7	50.00	182.70	232.01	102.22	-3.7	50.00	182.70	232.01	102.18	-3.6	50.00	179.65	235.22	102.13	-3.5	50.00	176.64	238.43	102.08	-3.5	50.00	173.66	241.64	102.08	-3.5	50.00	173.66	241.64	102.06	-3.4	50.00	172.49	242.90	102.06	-3.4	50.00	172.49	242.90	102.02	-3.4	50.00	169.36	246.32	101.82	-3.1	50.00	157.23	260.01	101.77	-3.1	50.00	154.29	263.43	101.77	-3.1	50.00	154.29	263.43	101.72	-3.0	50.00	151.28	266.99	101.66	-3.0	50.00	148.31	270.56	101.61	-2.9	50.00	145.38	274.12	101.61	-2.9	50.00	145.38	274.12	101.56	-2.8	50.00	142.46	277.73	101.25	-2.5	50.00	125.94	299.38	101.19	-2.5	50.00	123.35	302.99	101.19	-2.5	50.00	123.35	302.99	101.14	-2.4	50.00	120.81	306.60	101.14	-2.4	50.00	120.81	306.60	101.09	-2.4	50.00	118.32	310.20	100.72	-2.0	50.00	102.19	335.47	100.67	-2.0	50.00	100.08	339.07	100.67	-2.0	50.00	100.08	339.07	100.62	-2.0	50.00	98.14	342.46	100.28	-1.7	50.00	85.64	366.14	100.23	-1.7	50.00	84.01	369.52	100.23	-1.7	50.00	84.01	369.52	100.18	-1.6	50.00	82.41	372.91	99.94	-1.5	50.00	74.96	389.82	99.89	-1.5	50.00	73.58	393.21	99.89	-1.5	50.00	73.58	393.21	99.84	-1.4	50.00	72.20	396.65	99.24	-1.2	50.00	58.11	437.97	99.19	-1.1	50.00	57.12	441.41	99.19	-1.1	50.00	57.12	441.41	99.14	-1.1	50.00	56.16	444.85	98.64	-1.0	50.00	47.73	479.29	98.59	-0.9	50.00	47.00	482.73
103.04	-4.8	5.00	24.07	103.94																																																																																																																																																																																																																																																																																																																																																																					
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102.98	-4.7	5.00	23.61	105.54																																																																																																																																																																																																																																																																																																																																																																					
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102.90	-4.6	5.00	23.02	107.58																																																																																																																																																																																																																																																																																																																																																																					
102.86	-4.5	5.00	22.69	108.74																																																																																																																																																																																																																																																																																																																																																																					
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102.81	-4.5	5.00	22.33	110.02																																																																																																																																																																																																																																																																																																																																																																					
102.71	-4.3	5.00	21.62	112.58																																																																																																																																																																																																																																																																																																																																																																					
102.66	-4.3	5.00	21.27	113.86																																																																																																																																																																																																																																																																																																																																																																					
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102.60	-4.2	49.51	206.17	206.17																																																																																																																																																																																																																																																																																																																																																																					
102.55	-4.1	49.51	203.16	209.16																																																																																																																																																																																																																																																																																																																																																																					
102.55	-4.1	50.00	205.18	209.16																																																																																																																																																																																																																																																																																																																																																																					
102.51	-4.0	50.00	201.84	212.46																																																																																																																																																																																																																																																																																																																																																																					
102.41	-3.9	50.00	195.26	219.07																																																																																																																																																																																																																																																																																																																																																																					
102.36	-3.8	50.00	192.01	222.37																																																																																																																																																																																																																																																																																																																																																																					
102.36	-3.8	50.00	192.01	222.37																																																																																																																																																																																																																																																																																																																																																																					
102.32	-3.8	50.00	188.88	225.58																																																																																																																																																																																																																																																																																																																																																																					
102.27	-3.7	50.00	185.77	228.79																																																																																																																																																																																																																																																																																																																																																																					
102.22	-3.7	50.00	182.70	232.01																																																																																																																																																																																																																																																																																																																																																																					
102.22	-3.7	50.00	182.70	232.01																																																																																																																																																																																																																																																																																																																																																																					
102.18	-3.6	50.00	179.65	235.22																																																																																																																																																																																																																																																																																																																																																																					
102.13	-3.5	50.00	176.64	238.43																																																																																																																																																																																																																																																																																																																																																																					
102.08	-3.5	50.00	173.66	241.64																																																																																																																																																																																																																																																																																																																																																																					
102.08	-3.5	50.00	173.66	241.64																																																																																																																																																																																																																																																																																																																																																																					
102.06	-3.4	50.00	172.49	242.90																																																																																																																																																																																																																																																																																																																																																																					
102.06	-3.4	50.00	172.49	242.90																																																																																																																																																																																																																																																																																																																																																																					
102.02	-3.4	50.00	169.36	246.32																																																																																																																																																																																																																																																																																																																																																																					
101.82	-3.1	50.00	157.23	260.01																																																																																																																																																																																																																																																																																																																																																																					
101.77	-3.1	50.00	154.29	263.43																																																																																																																																																																																																																																																																																																																																																																					
101.77	-3.1	50.00	154.29	263.43																																																																																																																																																																																																																																																																																																																																																																					
101.72	-3.0	50.00	151.28	266.99																																																																																																																																																																																																																																																																																																																																																																					
101.66	-3.0	50.00	148.31	270.56																																																																																																																																																																																																																																																																																																																																																																					
101.61	-2.9	50.00	145.38	274.12																																																																																																																																																																																																																																																																																																																																																																					
101.61	-2.9	50.00	145.38	274.12																																																																																																																																																																																																																																																																																																																																																																					
101.56	-2.8	50.00	142.46	277.73																																																																																																																																																																																																																																																																																																																																																																					
101.25	-2.5	50.00	125.94	299.38																																																																																																																																																																																																																																																																																																																																																																					
101.19	-2.5	50.00	123.35	302.99																																																																																																																																																																																																																																																																																																																																																																					
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101.14	-2.4	50.00	120.81	306.60																																																																																																																																																																																																																																																																																																																																																																					
101.14	-2.4	50.00	120.81	306.60																																																																																																																																																																																																																																																																																																																																																																					
101.09	-2.4	50.00	118.32	310.20																																																																																																																																																																																																																																																																																																																																																																					
100.72	-2.0	50.00	102.19	335.47																																																																																																																																																																																																																																																																																																																																																																					
100.67	-2.0	50.00	100.08	339.07																																																																																																																																																																																																																																																																																																																																																																					
100.67	-2.0	50.00	100.08	339.07																																																																																																																																																																																																																																																																																																																																																																					
100.62	-2.0	50.00	98.14	342.46																																																																																																																																																																																																																																																																																																																																																																					
100.28	-1.7	50.00	85.64	366.14																																																																																																																																																																																																																																																																																																																																																																					
100.23	-1.7	50.00	84.01	369.52																																																																																																																																																																																																																																																																																																																																																																					
100.23	-1.7	50.00	84.01	369.52																																																																																																																																																																																																																																																																																																																																																																					
100.18	-1.6	50.00	82.41	372.91																																																																																																																																																																																																																																																																																																																																																																					
99.94	-1.5	50.00	74.96	389.82																																																																																																																																																																																																																																																																																																																																																																					
99.89	-1.5	50.00	73.58	393.21																																																																																																																																																																																																																																																																																																																																																																					
99.89	-1.5	50.00	73.58	393.21																																																																																																																																																																																																																																																																																																																																																																					
99.84	-1.4	50.00	72.20	396.65																																																																																																																																																																																																																																																																																																																																																																					
99.24	-1.2	50.00	58.11	437.97																																																																																																																																																																																																																																																																																																																																																																					
99.19	-1.1	50.00	57.12	441.41																																																																																																																																																																																																																																																																																																																																																																					
99.19	-1.1	50.00	57.12	441.41																																																																																																																																																																																																																																																																																																																																																																					
99.14	-1.1	50.00	56.16	444.85																																																																																																																																																																																																																																																																																																																																																																					
98.64	-1.0	50.00	47.73	479.29																																																																																																																																																																																																																																																																																																																																																																					
98.59	-0.9	50.00	47.00	482.73																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage L2		Schnitt 3L		Seite Anlage L2/8																																																																																																																																																																																																																																																																																																																																																																			
Kapitel:		1		LF 1 (BS-T)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																					

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

98.59	-0.9	50.00	47.00	482.73
98.54	-0.9	50.00	46.28	486.17
98.24	-0.8	50.00	42.29	506.83
98.19	-0.8	50.00	41.68	510.28
98.19	-0.8	50.00	41.68	510.28
98.14	-0.8	50.00	41.07	513.72
97.25	-0.6	50.00	31.63	575.70
97.20	-0.6	50.00	31.16	579.14
97.20	-0.6	50.00	31.16	579.14
97.15	-0.6	50.00	30.69	582.58
96.45	-0.5	50.00	24.23	630.79
96.40	-0.5	50.00	23.77	634.23

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.01052794$
 Theoretischer Fußpunkt = 96.399 m

Einbindetiefe $t_g = 9.35$ m
 Profillänge = 9.84 m

Nachweis Summe V
 Nachweis des mobilisierten Erdwiderstands
 Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$
 $G_{v,k} = 186.20$ kN/m
 $G'_{v,k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 81.95$ kN/m ($E_{ah,k} = 451.26$ kN/m)
 $B_{v,k} = 226.80$
 Summe $V_{v,k} = 41.36$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
 (Erfahrungswerte nach EA Pfähle)
 Verfahren 2: EAU Bild E 4-3 (rechts)
 Bohrpfahlwand $D = 0.88$ m
 Verhältniswert (min, max) = 0.00
 Spitzendruck $q_{c,m} = 7.50$ MN/m²
 (gemittelt von 97.28 bis 93.76 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
105.75	105.24	0.00	S1: Auffüllungen
105.24	103.74	0.00	S2: Auelehm (über GS)
103.74	102.64	0.00	S2: Auelehm (unter GS)
102.64	96.40	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.40 m = 1.000 m²/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 343.20 / 1.40 = 245.14$ kN/m
 $R_{d} = R_{b,d} + R_{s1,d} = 1110.19$ kN/m

Einwirkungen
 $V_{d} = G_{d} - G'_{d} + E_{av,d} + P_{v,d} = 223.44 - 0.00 + 94.25 + 0.00 = 317.69$ kN/m
 $\Rightarrow \mu = V_{d} / R_{d} = 317.69 / 1110.19 = 0.29$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage L2	Schnitt 3L	Seite Anlage L2/9
Kapitel: 1	LF 1 (BS-T)	Archiv Nr.: 22/199
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 2 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 12_BS 3_LF2.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.24 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 83.10 2.13 103.74 102.86 100.67 nein 2 10.00 2.63 103.74 102.65 99.89 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 47.50 0.00 0.33 103.74 103.74 103.74 103.47 103.33 nein 2 117.67 0.33 0.63 103.74 103.60 103.33 103.22 102.95 nein 3 111.80 0.63 0.93 103.74 103.48 102.95 102.96 102.55 nein 4 105.93 0.93 1.23 103.74 103.35 102.55 102.66 102.08 nein 5 100.07 1.23 1.53 103.74 103.23 102.08 102.36 101.61 nein 6 94.20 1.53 1.83 103.74 103.11 101.61 102.06 101.14 nein 7 88.33 1.83 2.13 103.74 102.98 101.14 101.77 100.67 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 14.50 106.23 104.74 Ständig</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Kraftränder
 Momente (entgegen dem Uhrzeigersinn positiv)
 Horizontalkräfte (nach Erdseite positiv)
 Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M _{g,k}	M _{q,k}	H _{g,k}	H _{q,k}	V _{g,k}	V _{q,k}
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	104.41	0.00	0.00	-101.70	0.00	0.00	0.00

Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.40 m / eaho/eahu = 1.5)

Art des Fußlagers:
 Profillänge von 9.84 m fest und Fuß gebettet

Bettungsmodule
 von bis ks(oben) ks(unten)
 [mNHN] [mNHN] [MN/m³] [MN/m³]
 102.55 80.00 50.000 50.000

Ausnutzungsgrad mue = 493.520 / 765.424 = 0.645
 Bettungslager Bh,d = 493.520 kN/m
 Erdwiderstand Eph,d = 765.424 kN/m

Anker und Steifen
 N_{d'} = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 Nw,k kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	Nw _k	EA	EI	N _{d'}
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-197.09	-170.85	-170.85	-93.27	6.900E+4	2.100E+7	-217.84 Steife

Zusätzlich für Steifen
 Steife 1
 Vertikallast [kN/m²/m]: 0.00
 max M_d [kN·m/m]: 0.00
 gelenkig an Verbauwand angeschlossen
 gegenüberliegende Seite gelenkig

x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-9.0	0.0	-201.14	0.00	0.00
-0.90	105.00	-9.3	0.0	-201.14	0.00	0.00
-0.90	105.00	-9.3	0.0	-201.14	0.00	0.00
-0.80	105.00	-9.6	0.0	-201.14	0.00	0.00
-0.70	105.00	-9.9	0.0	-201.14	0.00	0.00
-0.60	105.00	-10.2	0.0	-201.14	0.00	0.00
-0.50	105.00	-10.5	0.0	-201.14	0.00	0.00
-0.40	105.00	-10.8	0.0	-201.14	0.00	0.00
-0.30	105.00	-11.0	0.0	-201.14	0.00	0.00
-0.20	105.00	-11.3	0.0	-201.14	0.00	0.00
-0.10	105.00	-11.6	0.0	-201.14	0.00	0.00
0.00	105.00	-11.9	0.0	-201.14	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
 Vorverformungen wurden aus der Datei
 P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 3\Linkes Ufer\11_BS 3_LF1.vrb
 eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0078

Bodenkennwerte

Schicht	UK	gam _k	gam' _k	phi _k	c _k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.24	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.64	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt: Anlage L2 Schnitt 3L	Seite Anlage L2/11
Kapitel: 2 LF 2 (BS-T)	Archiv Nr. 211
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																	
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.240</td><td>106.230</td><td>33.975</td><td>33.975</td><td>0.00</td><td>0.00</td></tr><tr><td>106.230</td><td>105.500</td><td>33.975</td><td>33.975</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>33.975</td><td>33.975</td><td>0.00</td><td>2.60</td></tr><tr><td>105.240</td><td>105.000</td><td>33.975</td><td>33.975</td><td>2.60</td><td>5.00</td></tr><tr><td>105.000</td><td>104.740</td><td>33.975</td><td>33.975</td><td>5.00</td><td>5.00</td></tr><tr><td>104.740</td><td>104.410</td><td>33.975</td><td>33.975</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.400</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.240</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>104.240</td><td>103.740</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.740</td><td>103.603</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.603</td><td>103.479</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.479</td><td>103.467</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.467</td><td>103.355</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.355</td><td>103.325</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.325</td><td>103.231</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.231</td><td>103.216</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.216</td><td>103.106</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>103.106</td><td>102.982</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.982</td><td>102.957</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.957</td><td>102.948</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.948</td><td>102.858</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.858</td><td>102.659</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.659</td><td>102.651</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.651</td><td>102.640</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.640</td><td>102.553</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.553</td><td>102.550</td><td>22.650</td><td>22.650</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.362</td><td>79.702</td><td>84.235</td><td>5.00</td><td>5.00</td></tr><tr><td>102.362</td><td>102.223</td><td>84.235</td><td>80.954</td><td>5.00</td><td>5.00</td></tr><tr><td>102.223</td><td>102.083</td><td>80.954</td><td>77.673</td><td>5.00</td><td>5.00</td></tr><tr><td>102.083</td><td>102.065</td><td>77.673</td><td>77.873</td><td>5.00</td><td>5.00</td></tr><tr><td>102.065</td><td>101.817</td><td>77.873</td><td>71.559</td><td>5.00</td><td>5.00</td></tr><tr><td>101.817</td><td>101.768</td><td>71.559</td><td>70.296</td><td>5.00</td><td>5.00</td></tr><tr><td>101.768</td><td>101.613</td><td>70.296</td><td>61.903</td><td>5.00</td><td>5.00</td></tr><tr><td>101.613</td><td>101.195</td><td>61.903</td><td>49.733</td><td>5.00</td><td>5.00</td></tr><tr><td>101.195</td><td>101.143</td><td>49.733</td><td>48.212</td><td>5.00</td><td>5.00</td></tr><tr><td>101.143</td><td>100.672</td><td>48.212</td><td>43.598</td><td>5.00</td><td>5.00</td></tr><tr><td>100.672</td><td>100.231</td><td>43.598</td><td>45.976</td><td>5.00</td><td>5.00</td></tr><tr><td>100.231</td><td>100.036</td><td>45.976</td><td>47.032</td><td>5.00</td><td>5.00</td></tr><tr><td>100.036</td><td>99.889</td><td>47.032</td><td>47.825</td><td>5.00</td><td>5.00</td></tr><tr><td>99.889</td><td>99.191</td><td>47.825</td><td>50.688</td><td>5.00</td><td>5.00</td></tr><tr><td>99.191</td><td>98.194</td><td>50.688</td><td>54.777</td><td>5.00</td><td>5.00</td></tr><tr><td>98.194</td><td>97.196</td><td>54.777</td><td>58.867</td><td>5.00</td><td>5.00</td></tr><tr><td>97.196</td><td>96.399</td><td>58.867</td><td>62.139</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>80.000</td><td>62.139</td><td>129.400</td><td>5.00</td><td>5.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.24</td><td>102.55</td></tr></table></div>						Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.64	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.240	106.230	33.975	33.975	0.00	0.00	106.230	105.500	33.975	33.975	0.00	0.00	105.500	105.240	33.975	33.975	0.00	2.60	105.240	105.000	33.975	33.975	2.60	5.00	105.000	104.740	33.975	33.975	5.00	5.00	104.740	104.410	33.975	33.975	5.00	5.00	104.410	104.400	22.650	22.650	5.00	5.00	104.400	104.240	22.650	22.650	5.00	5.00	104.240	103.740	22.650	22.650	5.00	5.00	103.740	103.603	22.650	22.650	5.00	5.00	103.603	103.479	22.650	22.650	5.00	5.00	103.479	103.467	22.650	22.650	5.00	5.00	103.467	103.355	22.650	22.650	5.00	5.00	103.355	103.325	22.650	22.650	5.00	5.00	103.325	103.231	22.650	22.650	5.00	5.00	103.231	103.216	22.650	22.650	5.00	5.00	103.216	103.106	22.650	22.650	5.00	5.00	103.106	102.982	22.650	22.650	5.00	5.00	102.982	102.957	22.650	22.650	5.00	5.00	102.957	102.948	22.650	22.650	5.00	5.00	102.948	102.858	22.650	22.650	5.00	5.00	102.858	102.659	22.650	22.650	5.00	5.00	102.659	102.651	22.650	22.650	5.00	5.00	102.651	102.640	22.650	22.650	5.00	5.00	102.640	102.553	22.650	22.650	5.00	5.00	102.553	102.550	22.650	22.650	5.00	5.00	102.550	102.362	79.702	84.235	5.00	5.00	102.362	102.223	84.235	80.954	5.00	5.00	102.223	102.083	80.954	77.673	5.00	5.00	102.083	102.065	77.673	77.873	5.00	5.00	102.065	101.817	77.873	71.559	5.00	5.00	101.817	101.768	71.559	70.296	5.00	5.00	101.768	101.613	70.296	61.903	5.00	5.00	101.613	101.195	61.903	49.733	5.00	5.00	101.195	101.143	49.733	48.212	5.00	5.00	101.143	100.672	48.212	43.598	5.00	5.00	100.672	100.231	43.598	45.976	5.00	5.00	100.231	100.036	45.976	47.032	5.00	5.00	100.036	99.889	47.032	47.825	5.00	5.00	99.889	99.191	47.825	50.688	5.00	5.00	99.191	98.194	50.688	54.777	5.00	5.00	98.194	97.196	54.777	58.867	5.00	5.00	97.196	96.399	58.867	62.139	5.00	5.00	96.399	80.000	62.139	129.400	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.24	102.55
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																														
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2	103.74	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																														
3	102.64	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																																														
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																														
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102.065	101.817	77.873	71.559	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
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97.196	96.399	58.867	62.139	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																		
0.00	0.00	106.24	102.55																																																																																																																																																																																																																																																																																																																																																		
Schnitt: Anlage L2 Schnitt 3L				Seite Anlage L2/12																																																																																																																																																																																																																																																																																																																																																	
Kapitel: 2 LF 2 (BS-T)				Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																	
Vorgang: Genehmigungsstatik				Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.55 102.55 0.00 0.00 102.55 102.36 0.00 -7.99 102.36 102.22 -7.99 -13.92 102.22 102.08 -13.92 -19.85 102.08 102.06 -19.85 -20.62 102.06 101.82 -20.62 -31.15 101.82 101.77 -31.15 -33.26 101.77 101.61 -33.26 -39.83 101.61 101.19 -39.83 -57.60 101.19 101.14 -57.60 -59.82 101.14 100.67 -59.82 -79.81 100.67 100.23 -79.81 -98.54 100.23 100.04 -98.54 -106.87 100.04 99.89 -106.87 -113.12 99.89 99.19 -113.12 -142.78 99.19 98.19 -142.78 -185.16 98.19 97.20 -185.16 -227.54 97.20 96.40 -227.54 -261.44 96.40 80.00 -261.44 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.24 0.0 0.0 0.0 106.23 -0.2 -0.4 0.0 105.50 -16.1 -28.9 -10.7 105.24 -21.8 -39.5 -19.6 105.00 -27.0 -49.9 -30.3 -201.1 105.00 -27.0 151.2 -30.3 104.74 -32.6 139.5 7.5 104.41 -39.8 124.6 51.1 104.41 -39.8 2.6 51.1 104.40 -40.0 2.2 51.1 104.24 -43.5 -2.9 51.0 103.74 -54.4 -18.9 45.6 103.60 -58.3 -23.3 42.7 103.48 -61.9 -27.3 39.6 103.47 -62.3 -27.7 39.2 103.35 -65.5 -31.3 35.9 103.33 -66.3 -32.2 35.0 103.23 -69.0 -35.2 31.8 103.22 -69.5 -35.7 31.3 103.11 -72.6 -39.2 27.2 102.98 -76.2 -43.2 22.1 102.96 -76.9 -44.0 20.9 102.95 -77.2 -44.3 20.6 102.86 -79.8 -47.2 16.4 102.66 -85.5 -53.5 6.4 102.65 -85.7 -53.8 6.0 102.64 -86.0 -54.2 5.4 102.55 -88.8 -56.9 0.6 102.55 -88.9 -57.0 0.4 102.36 -94.3 -74.8 -12.0 102.22 -96.3 -86.3 -23.3 102.08 -97.7 -95.7 -36.0 102.06 -97.8 -96.8 -37.8 101.82 -98.6 -108.1 -63.3 101.77 -98.6 -109.5 -68.7 101.61 -97.9 -112.0 -85.8 101.19 -92.2 -104.2 -131.7</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																			
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<table><tr><td>101.14</td><td>-91.1</td><td>-101.9</td><td>-137.1</td><td></td><td></td></tr><tr><td>100.67</td><td>-77.5</td><td>-69.3</td><td>-178.1</td><td></td><td></td></tr><tr><td>100.23</td><td>-58.4</td><td>-22.3</td><td>-198.8</td><td></td><td></td></tr><tr><td>100.04</td><td>-49.4</td><td>-0.5</td><td>-201.0</td><td></td><td></td></tr><tr><td>99.89</td><td>-43.4</td><td>13.9</td><td>-200.0</td><td></td><td></td></tr><tr><td>99.19</td><td>-22.0</td><td>62.4</td><td>-171.5</td><td></td><td></td></tr><tr><td>98.19</td><td>-9.5</td><td>82.3</td><td>-95.0</td><td></td><td></td></tr><tr><td>97.20</td><td>-14.1</td><td>54.0</td><td>-23.3</td><td></td><td></td></tr><tr><td>96.40</td><td>-28.3</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Schnittgrößen ([g+q+w],k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.23</td><td>-0.2</td><td>-0.3</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-14.0</td><td>-25.1</td><td>-9.3</td><td></td><td></td></tr><tr><td>105.24</td><td>-18.9</td><td>-34.3</td><td>-17.0</td><td></td><td></td></tr><tr><td>105.00</td><td>-23.5</td><td>-43.4</td><td>-26.3</td><td>-170.9</td><td></td></tr><tr><td>105.00</td><td>-23.5</td><td>127.5</td><td>-26.3</td><td></td><td></td></tr><tr><td>104.74</td><td>-28.4</td><td>117.3</td><td>5.5</td><td></td><td></td></tr><tr><td>104.41</td><td>-34.6</td><td>104.5</td><td>42.1</td><td></td><td></td></tr><tr><td>104.41</td><td>-34.6</td><td>2.8</td><td>42.1</td><td></td><td></td></tr><tr><td>104.40</td><td>-34.8</td><td>2.5</td><td>42.1</td><td></td><td></td></tr><tr><td>104.24</td><td>-37.8</td><td>-1.9</td><td>42.2</td><td></td><td></td></tr><tr><td>103.74</td><td>-47.3</td><td>-15.7</td><td>37.8</td><td></td><td></td></tr><tr><td>103.60</td><td>-50.7</td><td>-19.5</td><td>35.3</td><td></td><td></td></tr><tr><td>103.48</td><td>-53.8</td><td>-23.0</td><td>32.7</td><td></td><td></td></tr><tr><td>103.47</td><td>-54.1</td><td>-23.3</td><td>32.4</td><td></td><td></td></tr><tr><td>103.35</td><td>-56.9</td><td>-26.4</td><td>29.6</td><td></td><td></td></tr><tr><td>103.33</td><td>-57.7</td><td>-27.2</td><td>28.8</td><td></td><td></td></tr><tr><td>103.23</td><td>-60.0</td><td>-29.8</td><td>26.1</td><td></td><td></td></tr><tr><td>103.22</td><td>-60.4</td><td>-30.2</td><td>25.7</td><td></td><td></td></tr><tr><td>103.11</td><td>-63.1</td><td>-33.3</td><td>22.2</td><td></td><td></td></tr><tr><td>102.98</td><td>-66.3</td><td>-36.7</td><td>17.9</td><td></td><td></td></tr><tr><td>102.96</td><td>-66.9</td><td>-37.4</td><td>16.9</td><td></td><td></td></tr><tr><td>102.95</td><td>-67.1</td><td>-37.7</td><td>16.6</td><td></td><td></td></tr><tr><td>102.86</td><td>-69.4</td><td>-40.1</td><td>13.1</td><td></td><td></td></tr><tr><td>102.66</td><td>-74.3</td><td>-45.6</td><td>4.6</td><td></td><td></td></tr><tr><td>102.65</td><td>-74.5</td><td>-45.9</td><td>4.2</td><td></td><td></td></tr><tr><td>102.64</td><td>-74.8</td><td>-46.2</td><td>3.7</td><td></td><td></td></tr><tr><td>102.55</td><td>-77.2</td><td>-48.6</td><td>-0.4</td><td></td><td></td></tr><tr><td>102.55</td><td>-77.3</td><td>-48.7</td><td>-0.6</td><td></td><td></td></tr><tr><td>102.36</td><td>-82.0</td><td>-64.1</td><td>-11.2</td><td></td><td></td></tr><tr><td>102.22</td><td>-83.7</td><td>-74.1</td><td>-20.8</td><td></td><td></td></tr><tr><td>102.08</td><td>-85.0</td><td>-82.2</td><td>-31.8</td><td></td><td></td></tr><tr><td>102.06</td><td>-85.1</td><td>-83.2</td><td>-33.3</td><td></td><td></td></tr><tr><td>101.82</td><td>-85.8</td><td>-93.0</td><td>-55.2</td><td></td><td></td></tr><tr><td>101.77</td><td>-85.8</td><td>-94.3</td><td>-59.8</td><td></td><td></td></tr><tr><td>101.61</td><td>-85.2</td><td>-96.4</td><td>-74.6</td><td></td><td></td></tr><tr><td>101.19</td><td>-80.3</td><td>-89.8</td><td>-114.1</td><td></td><td></td></tr><tr><td>101.14</td><td>-79.4</td><td>-87.7</td><td>-118.8</td><td></td><td></td></tr><tr><td>100.67</td><td>-67.6</td><td>-59.7</td><td>-154.1</td><td></td><td></td></tr><tr><td>100.23</td><td>-51.1</td><td>-19.1</td><td>-171.9</td><td></td><td></td></tr><tr><td>100.04</td><td>-43.3</td><td>-0.3</td><td>-173.7</td><td></td><td></td></tr><tr><td>99.89</td><td>-38.1</td><td>12.1</td><td>-172.9</td><td></td><td></td></tr><tr><td>99.19</td><td>-19.6</td><td>54.0</td><td>-148.2</td><td></td><td></td></tr><tr><td>98.19</td><td>-8.8</td><td>71.1</td><td>-82.1</td><td></td><td></td></tr><tr><td>97.20</td><td>-12.9</td><td>46.6</td><td>-20.2</td><td></td><td></td></tr><tr><td>96.40</td><td>-25.3</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Schnittgrößen (g+w,k)</p> 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(q,k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-81.1</td><td></td></tr><tr><td>104.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.96</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.86</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.66</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.64</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.36</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table></div>						104.41	-34.6	2.8	42.1	104.40	-34.8	2.5	42.1	104.24	-37.8	-1.9	42.2	103.74	-47.3	-15.7	37.8	103.60	-50.7	-19.5	35.3	103.48	-53.8	-23.0	32.7	103.47	-54.1	-23.3	32.4	103.35	-56.9	-26.4	29.6	103.33	-57.7	-27.2	28.8	103.23	-60.0	-29.8	26.1	103.22	-60.4	-30.2	25.7	103.11	-63.1	-33.3	22.2	102.98	-66.3	-36.7	17.9	102.96	-66.9	-37.4	16.9	102.95	-67.1	-37.7	16.6	102.86	-69.4	-40.1	13.1	102.66	-74.3	-45.6	4.6	102.65	-74.5	-45.9	4.2	102.64	-74.8	-46.2	3.7	102.55	-77.2	-48.6	-0.4	102.55	-77.3	-48.7	-0.6	102.36	-82.0	-64.1	-11.2	102.22	-83.7	-74.1	-20.8	102.08	-85.0	-82.2	-31.8	102.06	-85.1	-83.2	-33.3	101.82	-85.8	-93.0	-55.2	101.77	-85.8	-94.3	-59.8	101.61	-85.2	-96.4	-74.6	101.19	-80.3	-89.8	-114.1	101.14	-79.4	-87.7	-118.8	100.67	-67.6	-59.7	-154.1	100.23	-51.1	-19.1	-171.9	100.04	-43.3	-0.3	-173.7	99.89	-38.1	12.1	-172.9	99.19	-19.6	54.0	-148.2	98.19	-8.8	71.1	-82.1	97.20	-12.9	46.6	-20.2	96.40	-25.3	0.0	0.0	Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.24	0.0	0.0	0.0			106.23	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.24	0.0	0.0	0.0			105.00	0.0	0.0	0.0	-81.1		104.74	0.0	0.0	0.0			104.41	0.0	0.0	0.0			104.40	0.0	0.0	0.0			104.24	0.0	0.0	0.0			103.74	0.0	0.0	0.0			103.60	0.0	0.0	0.0			103.48	0.0	0.0	0.0			103.47	0.0	0.0	0.0			103.35	0.0	0.0	0.0			103.33	0.0	0.0	0.0			103.23	0.0	0.0	0.0			103.22	0.0	0.0	0.0			103.11	0.0	0.0	0.0			102.98	0.0	0.0	0.0			102.96	0.0	0.0	0.0			102.95	0.0	0.0	0.0			102.86	0.0	0.0	0.0			102.66	0.0	0.0	0.0			102.65	0.0	0.0	0.0			102.64	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.36	0.0	0.0	0.0			102.22	0.0	0.0	0.0		
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103.22	-60.4	-30.2	25.7																																																																																																																																																																																																																																																																																																																																																				
103.11	-63.1	-33.3	22.2																																																																																																																																																																																																																																																																																																																																																				
102.98	-66.3	-36.7	17.9																																																																																																																																																																																																																																																																																																																																																				
102.96	-66.9	-37.4	16.9																																																																																																																																																																																																																																																																																																																																																				
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102.86	-69.4	-40.1	13.1																																																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.82</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.77</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.61</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.19</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.14</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.67</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.23</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.04</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.89</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.19</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.19</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.24</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.29</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.19</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.24</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr></table>						102.08	0.0	0.0	0.0	102.06	0.0	0.0	0.0	101.82	0.0	0.0	0.0	101.77	0.0	0.0	0.0	101.61	0.0	0.0	0.0	101.19	0.0	0.0	0.0	101.14	0.0	0.0	0.0	100.67	0.0	0.0	0.0	100.23	0.0	0.0	0.0	100.04	0.0	0.0	0.0	99.89	0.0	0.0	0.0	99.19	0.0	0.0	0.0	98.19	0.0	0.0	0.0	97.20	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-12.2	-	-	-	106.23	-12.2	-	-	-	106.23	-12.2	-	-	-	106.18	-12.1	-	-	-	105.55	-11.1	-	-	-	105.50	-11.1	-	-	-	105.50	-11.1	-	-	-	105.45	-11.0	-	-	-	105.29	-10.7	-	-	-	105.24	-10.7	-	-	-	105.24	-10.7	-	-	-	105.19	-10.6	-	-	-	105.05	-10.4	-	-	-	105.00	-10.3	-	-	-	105.00	-10.3	-	-	-	104.95	-10.2	-	-	-	104.79	-10.0	-	-	-	104.74	-9.9	-	-	-	104.74	-9.9	-	-	-	104.69	-9.8	-	-	-	104.46	-9.5	-	-	-	104.41	-9.4	-	-	-	104.41	-9.4	-	-	-	104.40	-9.4	-	-	-	104.40	-9.4	-	-	-	104.35	-9.3	-	-	-	104.29	-9.2	-	-	-	104.24	-9.2	-	-	-	104.24	-9.2	-	-	-	104.19	-9.1	-	-	-	103.79	-8.5	-	-	-	103.74	-8.4	-	-	-	103.74	-8.4	-	-	-	103.74	-8.4	-	-	-	103.65	-8.3	-	-	-	103.60	-8.2	-	-	-	103.60	-8.2	-	-	-	103.54	-8.1	-	-	-	103.54	-8.1	-	-	-	103.48	-8.0	-	-	-	103.48	-8.0	-	-	-	103.47	-8.0	-	-	-	103.47	-8.0	-	-	-	103.41	-7.9	-	-	-	103.41	-7.9	-	-	-	103.35	-7.8	-	-	-	103.35	-7.8	-	-	-	103.33	-7.7	-	-	-	103.33	-7.7	-	-	-	103.28	-7.7	-	-	-	103.24	-7.6	-	-	-
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102.27	-6.1	3.20	19.40	19.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-6.0	3.20	19.17	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-6.0	3.78	22.62	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.9	3.78	22.34	25.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-5.8	4.98	29.04	29.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.8	4.98	28.67	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.8	5.60	32.25	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.7	5.60	32.09	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.7	5.85	33.51	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.02	-5.7	5.85	33.05	36.93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.87	-5.4	8.72	47.20	47.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-5.3	8.72	46.52	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-5.3	9.49	50.62	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-5.3	9.49	49.88	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-5.3	10.28	54.04	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.72	-5.2	10.28	53.22	57.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.66	-5.1	12.00	61.17	61.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-5.0	12.00	60.21	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-5.0	12.90	64.73	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.56	-4.9	12.90	63.69	68.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-4.5	20.17	89.99	89.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-4.4	20.17	88.42	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-4.4	21.35	93.60	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-4.3	21.35	91.95	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-4.3	22.57	97.21	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-4.2	22.57	95.48	100.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.72	-3.7	33.98	126.08	126.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-3.6	33.98	123.65	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-3.6	35.64	129.69	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.62	-3.6	35.64	127.32	133.07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.28	-3.1	50.00	156.32	156.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.23	-3.1	50.00	153.27	160.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage L2 Schnitt 3L			Seite Anlage L2/17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Kapitel:		2 LF 2 (BS-T)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

100.23	-3.1	50.00	153.27	160.13
100.18	-3.0	50.00	150.25	163.52
100.08	-2.9	50.00	144.32	170.28
100.04	-2.8	50.00	141.41	173.67
100.04	-2.8	50.00	141.41	173.67
99.99	-2.8	50.00	138.54	177.05
99.94	-2.7	50.00	135.70	180.43
99.89	-2.7	50.00	132.89	183.81
99.89	-2.7	50.00	132.89	183.81
99.84	-2.6	50.00	130.07	187.26
99.24	-2.0	50.00	99.01	228.58
99.19	-1.9	50.00	96.64	232.02
99.19	-1.9	50.00	96.64	232.02
99.14	-1.9	50.00	94.30	235.46
98.24	-1.1	50.00	56.81	297.44
98.19	-1.1	50.00	54.94	300.89
98.19	-1.1	50.00	54.94	300.89
98.14	-1.1	50.00	53.08	304.33
97.25	-0.4	50.00	21.85	366.31
97.20	-0.4	50.00	20.20	369.75
97.20	-0.4	50.00	20.20	369.75
97.15	-0.4	50.00	18.54	373.19
96.45	0.1	50.00	-4.38	421.40
96.40	0.1	50.00	-6.01	424.84

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k}$: -0.03750998
Theoretischer Fußpunkt = 96.399 m

Einbindetiefe t_g = 6.15 m
Profillänge = 9.84 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$
 $G_{v,k}$ = 186.20 kN/m
 $G'_{v,k}$ = 0.00 kN/m
 $P_{v,k}$ = 0.00 kN/m
 $E_{av,k}$ = 81.95 kN/m ($E_{ah,k}$ = 451.26 kN/m)
 $B_{v,k}$ = 169.65
Summe $V_{v,k}$ = 98.50 kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand D = 0.88 m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m}$ = 7.50 MN/m²
(gemittelt von 97.28 bis 93.76 m) ==> $q_{b,k}$ = 1.60 MN/m²
 $R_{b,d}$ = $A \cdot q_{b,k} / \gamma_{(q_{b,k})}$ = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
102.55	96.40	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.40 m = 1.000 m²/m ==> $R_{s1,d}$
 $R_{s1,d}$ = $\eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})}$ = 1.000 · 338.25 / 1.40 = 241.61 kN/m
 R_{d} = $R_{b,d} + R_{s1,d}$ = 1106.66 kN/m

Einwirkungen
 V_{d} = $G_{d} - G'_{k} + E_{av,d} + P_{v,d}$ = 223.44 - 0.00 + 94.25 + 0.00 = 317.69 kN/m
==> μ = V_{d} / R_{d} = 317.69 / 1106.66 = 0.29

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage L2	Schnitt 3L	Seite Anlage L2/18
Kapitel: 2	LF 2 (BS-T)	Archiv Nr.: 2118
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

3 LF 3 (BS-T)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 3
Datei: 13_BS3_LF3.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.24 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	83.10	2.13	103.74	102.86	100.67	nein
2	10.00	2.63	103.74	102.65	99.89	nein

Lasten (zweiseitig begrenzt)


Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast
[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]
1	47.50	0.00	0.33	103.74	103.74	103.74	103.47	103.33	nein
2	117.67	0.33	0.63	103.74	103.60	103.33	103.22	102.95	nein
3	111.80	0.63	0.93	103.74	103.48	102.95	102.96	102.55	nein
4	105.93	0.93	1.23	103.74	103.35	102.55	102.66	102.08	nein
5	100.07	1.23	1.53	103.74	103.23	102.08	102.36	101.61	nein
6	94.20	1.53	1.83	103.74	103.11	101.61	102.06	101.14	nein
7	88.33	1.83	2.13	103.74	102.98	101.14	101.77	100.67	nein

Steuerparameter = 0.50

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	14.50	106.23	104.74	Ständig
2	0.00	29.50	105.50	102.55	Ständig

Schnitt: Anlage L2 Schnitt 3L	Seite Anlage L2/19
Kapitel: 3 LF 3 (BS-T)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.70	-13.30	0.00	0.00	0.00	20.80	0.00
2	104.41	0.00	0.00	-101.70	0.00	0.00	0.00

Art des Fußlagers:

Profillänge von 9.84 m fest und Fuß gebettet

Bettungsmodule

von bis ks(oben) ks(unten)

[mNHN] [mNHN] [MN/m³] [MN/m³]

102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 440.962 / 727.748 = 0.606$

Bettungslager $B_{h,d} = 440.962 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 727.748 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nw,k kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-245.74	-213.69	-213.69	-123.94	3.900E+7	2.100E+7	-272.45 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00

max $M_{d,d}$ [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-9.6	0.0	-251.94	0.00	0.00
-7.47	103.72	-9.6	0.0	-251.94	0.00	0.00
-7.47	103.72	-9.6	0.0	-251.94	0.00	0.00
-6.64	103.72	-9.6	0.0	-251.94	0.00	0.00
-5.81	103.72	-9.6	0.0	-251.94	0.00	0.00
-4.98	103.72	-9.6	0.0	-251.94	0.00	0.00
-4.15	103.72	-9.6	0.0	-251.94	0.00	0.00
-3.32	103.72	-9.6	0.0	-251.94	0.00	0.00
-2.49	103.72	-9.7	0.0	-251.94	0.00	0.00
-1.66	103.72	-9.7	0.0	-251.94	0.00	0.00
-0.83	103.72	-9.7	0.0	-251.94	0.00	0.00
0.00	103.72	-9.7	0.0	-251.94	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden aus der Datei

P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 3\Linkes Ufer\12_BS 3_LF2.vrb

eingeliesen.


Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0084

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.24	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.64	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage L2	Schnitt 3L	Seite Anlage	L2/20
Kapitel:	3	LF 3 (BS-T)	Archiv Nr.:	
Vorgang:	Genehmigungsstatik		Projekt-Nr.:	2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																	
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																	
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.240</td><td>106.230</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.230</td><td>105.700</td><td>0.000</td><td>5.158</td><td>0.00</td><td>0.00</td></tr><tr><td>105.700</td><td>105.500</td><td>5.158</td><td>7.104</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>7.104</td><td>12.234</td><td>0.00</td><td>0.00</td></tr><tr><td>105.240</td><td>104.740</td><td>12.234</td><td>22.100</td><td>0.00</td><td>0.00</td></tr><tr><td>104.740</td><td>104.410</td><td>7.600</td><td>10.900</td><td>0.00</td><td>0.00</td></tr><tr><td>104.410</td><td>104.240</td><td>10.900</td><td>12.600</td><td>0.00</td><td>0.00</td></tr><tr><td>104.240</td><td>103.740</td><td>12.600</td><td>17.600</td><td>0.00</td><td>0.00</td></tr><tr><td>103.740</td><td>103.720</td><td>17.600</td><td>39.999</td><td>0.00</td><td>0.00</td></tr><tr><td>103.720</td><td>103.603</td><td>39.999</td><td>41.663</td><td>0.00</td><td>0.00</td></tr><tr><td>103.603</td><td>103.479</td><td>41.663</td><td>69.735</td><td>0.00</td><td>0.00</td></tr><tr><td>103.479</td><td>103.467</td><td>69.735</td><td>73.839</td><td>0.00</td><td>0.00</td></tr><tr><td>103.467</td><td>103.355</td><td>73.839</td><td>92.118</td><td>0.00</td><td>0.00</td></tr><tr><td>103.355</td><td>103.325</td><td>92.118</td><td>98.953</td><td>0.00</td><td>0.00</td></tr><tr><td>103.325</td><td>103.231</td><td>98.953</td><td>116.505</td><td>0.00</td><td>0.00</td></tr><tr><td>103.231</td><td>103.216</td><td>116.505</td><td>119.860</td><td>0.00</td><td>0.00</td></tr><tr><td>103.216</td><td>103.106</td><td>119.860</td><td>120.929</td><td>0.00</td><td>0.00</td></tr><tr><td>103.106</td><td>102.982</td><td>120.929</td><td>126.064</td><td>0.00</td><td>0.00</td></tr><tr><td>102.982</td><td>102.957</td><td>126.064</td><td>127.726</td><td>0.00</td><td>0.00</td></tr><tr><td>102.957</td><td>102.948</td><td>127.726</td><td>127.079</td><td>0.00</td><td>0.00</td></tr><tr><td>102.948</td><td>102.858</td><td>127.079</td><td>130.760</td><td>0.00</td><td>0.00</td></tr><tr><td>102.858</td><td>102.659</td><td>130.760</td><td>142.652</td><td>0.00</td><td>0.00</td></tr><tr><td>102.659</td><td>102.651</td><td>142.652</td><td>142.373</td><td>0.00</td><td>0.00</td></tr><tr><td>102.651</td><td>102.640</td><td>142.373</td><td>142.051</td><td>0.00</td><td>0.00</td></tr><tr><td>102.640</td><td>102.553</td><td>110.616</td><td>109.088</td><td>0.00</td><td>0.00</td></tr><tr><td>102.553</td><td>102.550</td><td>109.088</td><td>109.202</td><td>0.00</td><td>0.00</td></tr><tr><td>102.550</td><td>102.362</td><td>79.702</td><td>84.235</td><td>0.00</td><td>0.00</td></tr><tr><td>102.362</td><td>102.223</td><td>84.235</td><td>80.954</td><td>0.00</td><td>0.00</td></tr><tr><td>102.223</td><td>102.083</td><td>80.954</td><td>77.673</td><td>0.00</td><td>0.00</td></tr><tr><td>102.083</td><td>102.065</td><td>77.673</td><td>77.873</td><td>0.00</td><td>0.00</td></tr><tr><td>102.065</td><td>101.817</td><td>77.873</td><td>71.559</td><td>0.00</td><td>0.00</td></tr><tr><td>101.817</td><td>101.768</td><td>71.559</td><td>70.296</td><td>0.00</td><td>0.00</td></tr><tr><td>101.768</td><td>101.613</td><td>70.296</td><td>61.903</td><td>0.00</td><td>0.00</td></tr><tr><td>101.613</td><td>101.195</td><td>61.903</td><td>49.733</td><td>0.00</td><td>0.00</td></tr><tr><td>101.195</td><td>101.143</td><td>49.733</td><td>48.212</td><td>0.00</td><td>0.00</td></tr><tr><td>101.143</td><td>100.672</td><td>48.212</td><td>43.598</td><td>0.00</td><td>0.00</td></tr><tr><td>100.672</td><td>100.280</td><td>43.598</td><td>45.712</td><td>0.00</td><td>0.00</td></tr><tr><td>100.280</td><td>100.231</td><td>45.712</td><td>45.976</td><td>0.00</td><td>0.00</td></tr><tr><td>100.231</td><td>99.889</td><td>45.976</td><td>47.825</td><td>0.00</td><td>0.00</td></tr><tr><td>99.889</td><td>99.191</td><td>47.825</td><td>50.688</td><td>0.00</td><td>0.00</td></tr><tr><td>99.191</td><td>98.194</td><td>50.688</td><td>54.777</td><td>0.00</td><td>0.00</td></tr><tr><td>98.194</td><td>97.196</td><td>54.777</td><td>58.867</td><td>0.00</td><td>0.00</td></tr><tr><td>97.196</td><td>96.399</td><td>58.867</td><td>62.139</td><td>0.00</td><td>0.00</td></tr><tr><td>96.399</td><td>80.000</td><td>62.139</td><td>129.400</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.24</td><td>102.55</td></tr></table></div>						Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.64	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.240	106.230	0.000	0.000	0.00	0.00	106.230	105.700	0.000	5.158	0.00	0.00	105.700	105.500	5.158	7.104	0.00	0.00	105.500	105.240	7.104	12.234	0.00	0.00	105.240	104.740	12.234	22.100	0.00	0.00	104.740	104.410	7.600	10.900	0.00	0.00	104.410	104.240	10.900	12.600	0.00	0.00	104.240	103.740	12.600	17.600	0.00	0.00	103.740	103.720	17.600	39.999	0.00	0.00	103.720	103.603	39.999	41.663	0.00	0.00	103.603	103.479	41.663	69.735	0.00	0.00	103.479	103.467	69.735	73.839	0.00	0.00	103.467	103.355	73.839	92.118	0.00	0.00	103.355	103.325	92.118	98.953	0.00	0.00	103.325	103.231	98.953	116.505	0.00	0.00	103.231	103.216	116.505	119.860	0.00	0.00	103.216	103.106	119.860	120.929	0.00	0.00	103.106	102.982	120.929	126.064	0.00	0.00	102.982	102.957	126.064	127.726	0.00	0.00	102.957	102.948	127.726	127.079	0.00	0.00	102.948	102.858	127.079	130.760	0.00	0.00	102.858	102.659	130.760	142.652	0.00	0.00	102.659	102.651	142.652	142.373	0.00	0.00	102.651	102.640	142.373	142.051	0.00	0.00	102.640	102.553	110.616	109.088	0.00	0.00	102.553	102.550	109.088	109.202	0.00	0.00	102.550	102.362	79.702	84.235	0.00	0.00	102.362	102.223	84.235	80.954	0.00	0.00	102.223	102.083	80.954	77.673	0.00	0.00	102.083	102.065	77.673	77.873	0.00	0.00	102.065	101.817	77.873	71.559	0.00	0.00	101.817	101.768	71.559	70.296	0.00	0.00	101.768	101.613	70.296	61.903	0.00	0.00	101.613	101.195	61.903	49.733	0.00	0.00	101.195	101.143	49.733	48.212	0.00	0.00	101.143	100.672	48.212	43.598	0.00	0.00	100.672	100.280	43.598	45.712	0.00	0.00	100.280	100.231	45.712	45.976	0.00	0.00	100.231	99.889	45.976	47.825	0.00	0.00	99.889	99.191	47.825	50.688	0.00	0.00	99.191	98.194	50.688	54.777	0.00	0.00	98.194	97.196	54.777	58.867	0.00	0.00	97.196	96.399	58.867	62.139	0.00	0.00	96.399	80.000	62.139	129.400	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.24	102.55
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																														
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																														
1	105.24	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																														
2	103.74	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																														
3	102.64	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																																														
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																														
von	bis	oben	unten	Wasserdruck																																																																																																																																																																																																																																																																																																																																																	
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																																																
106.240	106.230	0.000	0.000	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
106.230	105.700	0.000	5.158	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
105.700	105.500	5.158	7.104	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
105.500	105.240	7.104	12.234	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
105.240	104.740	12.234	22.100	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
104.740	104.410	7.600	10.900	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
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104.240	103.740	12.600	17.600	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.740	103.720	17.600	39.999	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.720	103.603	39.999	41.663	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.603	103.479	41.663	69.735	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.479	103.467	69.735	73.839	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.467	103.355	73.839	92.118	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.355	103.325	92.118	98.953	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.325	103.231	98.953	116.505	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.231	103.216	116.505	119.860	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.216	103.106	119.860	120.929	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.106	102.982	120.929	126.064	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.982	102.957	126.064	127.726	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.957	102.948	127.726	127.079	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.948	102.858	127.079	130.760	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.858	102.659	130.760	142.652	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.659	102.651	142.652	142.373	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.651	102.640	142.373	142.051	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.640	102.553	110.616	109.088	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.553	102.550	109.088	109.202	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.550	102.362	79.702	84.235	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.362	102.223	84.235	80.954	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.223	102.083	80.954	77.673	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.083	102.065	77.673	77.873	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.065	101.817	77.873	71.559	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.817	101.768	71.559	70.296	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.768	101.613	70.296	61.903	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.613	101.195	61.903	49.733	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.195	101.143	49.733	48.212	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.143	100.672	48.212	43.598	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.672	100.280	43.598	45.712	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.280	100.231	45.712	45.976	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.231	99.889	45.976	47.825	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.889	99.191	47.825	50.688	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.191	98.194	50.688	54.777	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
98.194	97.196	54.777	58.867	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
97.196	96.399	58.867	62.139	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
96.399	80.000	62.139	129.400	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																																																		
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																		
0.00	0.00	106.24	102.55																																																																																																																																																																																																																																																																																																																																																		
Schnitt:		Anlage L2	Schnitt 3L	Seite Anlage L2/24																																																																																																																																																																																																																																																																																																																																																	
Kapitel:		3	LF 3 (BS-T)	Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.55 102.55 0.00 0.00 102.55 102.36 0.00 -7.99 102.36 102.22 -7.99 -13.92 102.22 102.08 -13.92 -19.85 102.08 102.06 -19.85 -20.62 102.06 101.82 -20.62 -31.15 101.82 101.77 -31.15 -33.26 101.77 101.61 -33.26 -39.83 101.61 101.19 -39.83 -57.60 101.19 101.14 -57.60 -59.82 101.14 100.67 -59.82 -79.81 100.67 100.28 -79.81 -96.46 100.28 100.23 -96.46 -98.54 100.23 99.89 -98.54 -113.12 99.89 99.19 -113.12 -142.78 99.19 98.19 -142.78 -185.16 98.19 97.20 -185.16 -227.54 97.20 96.40 -227.54 -261.44 96.40 80.00 -261.44 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.24 0.0 0.0 0.0 106.23 -0.2 0.0 0.0 105.70 -11.8 -1.6 -0.3 105.70 -36.7 -1.6 -16.2 105.50 -41.1 -3.0 -16.7 105.24 -46.7 -5.9 -17.8 104.74 -57.6 -15.7 -23.0 104.41 -64.8 -19.3 -28.7 104.41 -64.8 -141.3 -28.7 104.24 -68.5 -143.6 -52.9 103.74 -79.4 -152.3 -126.8 103.72 -80.0 -153.2 -129.8 -251.9 103.72 -80.0 98.8 -129.8 103.60 -84.0 93.3 -118.6 103.48 -88.9 85.3 -107.5 103.47 -89.4 84.3 -106.4 103.35 -94.7 73.6 -97.6 103.33 -96.2 70.4 -95.4 103.23 -101.4 58.7 -89.3 103.22 -102.3 56.7 -88.5 103.11 -108.7 41.5 -83.1 102.98 -116.2 23.8 -79.0 102.96 -117.7 20.1 -78.5 102.95 -118.3 18.8 -78.3 102.86 -123.8 5.5 -77.2 102.66 -136.5 -25.7 -79.1 102.65 -137.1 -27.1 -79.4 102.64 -137.8 -28.9 -79.7 102.55 -144.0 -39.8 -82.6 102.55 -144.2 -40.2 -82.8 102.36 -149.6 -56.9 -91.9 102.22 -151.6 -67.6 -100.6 102.08 -153.0 -76.2 -110.7 102.06 -153.1 -77.1 -112.1 101.82 -154.0 -87.0 -132.6 101.77 -153.9 -88.2 -136.9 101.61 -153.2 -89.8 -150.7</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/22
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>101.19</div><div>-147.6</div><div>-79.9</div><div>-186.9</div></div><div><div>101.14</div><div>-146.6</div><div>-77.3</div><div>-191.0</div></div><div><div>100.67</div><div>-133.0</div><div>-42.5</div><div>-219.9</div></div><div><div>100.28</div><div>-116.7</div><div>-0.6</div><div>-228.5</div></div><div><div>100.23</div><div>-114.7</div><div>4.6</div><div>-228.4</div></div><div><div>99.89</div><div>-102.3</div><div>35.7</div><div>-221.3</div></div><div><div>99.19</div><div>-85.9</div><div>75.3</div><div>-180.8</div></div><div><div>98.19</div><div>-79.0</div><div>86.3</div><div>-96.2</div></div><div><div>97.20</div><div>-87.6</div><div>53.8</div><div>-23.1</div></div><div><div>96.40</div><div>-102.8</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.24</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.23</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.70</div><div>-10.2</div><div>-1.4</div><div>-0.2</div><div></div></div><div><div>105.70</div><div>-31.0</div><div>-1.4</div><div>-13.5</div><div></div></div><div><div>105.50</div><div>-34.8</div><div>-2.6</div><div>-13.9</div><div></div></div><div><div>105.24</div><div>-39.7</div><div>-5.1</div><div>-14.9</div><div></div></div><div><div>104.74</div><div>-49.2</div><div>-13.7</div><div>-19.4</div><div></div></div><div><div>104.41</div><div>-55.4</div><div>-16.7</div><div>-24.4</div><div></div></div><div><div>104.41</div><div>-55.4</div><div>-118.4</div><div>-24.4</div><div></div></div><div><div>104.24</div><div>-58.6</div><div>-120.4</div><div>-44.7</div><div></div></div><div><div>103.74</div><div>-68.1</div><div>-128.0</div><div>-106.7</div><div></div></div><div><div>103.72</div><div>-68.7</div><div>-128.8</div><div>-109.3</div><div>-213.7</div></div><div><div>103.72</div><div>-68.7</div><div>84.9</div><div>-109.3</div><div></div></div><div><div>103.60</div><div>-72.2</div><div>80.2</div><div>-99.6</div><div></div></div><div><div>103.48</div><div>-76.4</div><div>73.2</div><div>-90.1</div><div></div></div><div><div>103.47</div><div>-76.9</div><div>72.4</div><div>-89.2</div><div></div></div><div><div>103.35</div><div>-81.5</div><div>63.1</div><div>-81.6</div><div></div></div><div><div>103.33</div><div>-82.8</div><div>60.2</div><div>-79.7</div><div></div></div><div><div>103.23</div><div>-87.3</div><div>50.0</div><div>-74.5</div><div></div></div><div><div>103.22</div><div>-88.0</div><div>48.3</div><div>-73.8</div><div></div></div><div><div>103.11</div><div>-93.7</div><div>35.1</div><div>-69.2</div><div></div></div><div><div>102.98</div><div>-100.1</div><div>19.8</div><div>-65.8</div><div></div></div><div><div>102.96</div><div>-101.5</div><div>16.5</div><div>-65.3</div><div></div></div><div><div>102.95</div><div>-101.9</div><div>15.4</div><div>-65.2</div><div></div></div><div><div>102.86</div><div>-106.8</div><div>3.8</div><div>-64.3</div><div></div></div><div><div>102.66</div><div>-117.8</div><div>-23.3</div><div>-66.2</div><div></div></div><div><div>102.65</div><div>-118.3</div><div>-24.5</div><div>-66.4</div><div></div></div><div><div>102.64</div><div>-118.9</div><div>-26.1</div><div>-66.7</div><div></div></div><div><div>102.55</div><div>-124.3</div><div>-35.6</div><div>-69.4</div><div></div></div><div><div>102.55</div><div>-124.5</div><div>-35.9</div><div>-69.5</div><div></div></div><div><div>102.36</div><div>-129.2</div><div>-50.4</div><div>-77.6</div><div></div></div><div><div>102.22</div><div>-130.9</div><div>-59.7</div><div>-85.3</div><div></div></div><div><div>102.08</div><div>-132.2</div><div>-67.2</div><div>-94.2</div><div></div></div><div><div>102.06</div><div>-132.3</div><div>-68.0</div><div>-95.4</div><div></div></div><div><div>101.82</div><div>-133.0</div><div>-76.6</div><div>-113.5</div><div></div></div><div><div>101.77</div><div>-133.0</div><div>-77.7</div><div>-117.3</div><div></div></div><div><div>101.61</div><div>-132.4</div><div>-79.0</div><div>-129.4</div><div></div></div><div><div>101.19</div><div>-127.6</div><div>-70.3</div><div>-161.3</div><div></div></div><div><div>101.14</div><div>-126.6</div><div>-68.1</div><div>-164.9</div><div></div></div><div><div>100.67</div><div>-114.9</div><div>-37.7</div><div>-190.4</div><div></div></div><div><div>100.28</div><div>-100.8</div><div>-1.1</div><div>-198.2</div><div></div></div><div><div>100.23</div><div>-99.0</div><div>3.4</div><div>-198.1</div><div></div></div><div><div>99.89</div><div>-88.3</div><div>30.6</div><div>-192.1</div><div></div></div><div><div>99.19</div><div>-74.1</div><div>65.2</div><div>-157.1</div><div></div></div><div><div>98.19</div><div>-68.2</div><div>75.0</div><div>-83.7</div><div></div></div><div><div>97.20</div><div>-75.7</div><div>46.8</div><div>-20.1</div><div></div></div><div><div>96.40</div><div>-88.9</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.24</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.23</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.70</div><div>-10.2</div><div>-1.4</div><div>-0.2</div><div></div></div><div><div>105.70</div><div>-31.0</div><div>-1.4</div><div>-13.5</div><div></div></div><div><div>105.50</div><div>-34.8</div><div>-2.6</div><div>-13.9</div><div></div></div><div><div>105.24</div><div>-39.7</div><div>-5.1</div><div>-14.9</div><div></div></div></div></div>					
Schnitt:		Anlage L2 Schnitt 3L		Seite Anlage L2/23	
Kapitel:		3 LF 3 (BS-T)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div><div><div>104.74</div><div>-49.2</div><div>-13.7</div><div>-19.4</div></div><div>104.41</div><div>-55.4</div><div>-16.7</div><div>-24.4</div></div><div><div>104.41</div><div>-55.4</div><div>-118.4</div><div>-24.4</div></div><div><div>104.24</div><div>-58.6</div><div>-120.4</div><div>-44.7</div></div><div><div>103.74</div><div>-68.1</div><div>-128.0</div><div>-106.7</div></div><div><div>103.72</div><div>-68.7</div><div>-128.8</div><div>-109.3</div></div><div><div>103.72</div><div>-68.7</div><div>84.9</div><div>-109.3</div></div><div><div>103.60</div><div>-72.2</div><div>80.2</div><div>-99.6</div></div><div><div>103.48</div><div>-76.4</div><div>73.2</div><div>-90.1</div></div><div><div>103.47</div><div>-76.9</div><div>72.4</div><div>-89.2</div></div><div><div>103.35</div><div>-81.5</div><div>63.1</div><div>-81.6</div></div><div><div>103.33</div><div>-82.8</div><div>60.2</div><div>-79.7</div></div><div><div>103.23</div><div>-87.3</div><div>50.0</div><div>-74.5</div></div><div><div>103.22</div><div>-88.0</div><div>48.3</div><div>-73.8</div></div><div><div>103.11</div><div>-93.7</div><div>35.1</div><div>-69.2</div></div><div><div>102.98</div><div>-100.1</div><div>19.8</div><div>-65.8</div></div><div><div>102.96</div><div>-101.5</div><div>16.5</div><div>-65.3</div></div><div><div>102.95</div><div>-101.9</div><div>15.4</div><div>-65.2</div></div><div><div>102.86</div><div>-106.8</div><div>3.8</div><div>-64.3</div></div><div><div>102.66</div><div>-117.8</div><div>-23.3</div><div>-66.2</div></div><div><div>102.65</div><div>-118.3</div><div>-24.5</div><div>-66.4</div></div><div><div>102.64</div><div>-118.9</div><div>-26.1</div><div>-66.7</div></div><div><div>102.55</div><div>-124.3</div><div>-35.6</div><div>-69.4</div></div><div><div>102.55</div><div>-124.5</div><div>-35.9</div><div>-69.5</div></div><div><div>102.36</div><div>-129.2</div><div>-50.4</div><div>-77.6</div></div><div><div>102.22</div><div>-130.9</div><div>-59.7</div><div>-85.3</div></div><div><div>102.08</div><div>-132.2</div><div>-67.2</div><div>-94.2</div></div><div><div>102.06</div><div>-132.3</div><div>-68.0</div><div>-95.4</div></div><div><div>101.82</div><div>-133.0</div><div>-76.6</div><div>-113.5</div></div><div><div>101.77</div><div>-133.0</div><div>-77.7</div><div>-117.3</div></div><div><div>101.61</div><div>-132.4</div><div>-79.0</div><div>-129.4</div></div><div><div>101.19</div><div>-127.6</div><div>-70.3</div><div>-161.3</div></div><div><div>101.14</div><div>-126.6</div><div>-68.1</div><div>-164.9</div></div><div><div>100.67</div><div>-114.9</div><div>-37.7</div><div>-190.4</div></div><div><div>100.28</div><div>-100.8</div><div>-1.1</div><div>-198.2</div></div><div><div>100.23</div><div>-99.0</div><div>3.4</div><div>-198.1</div></div><div><div>99.89</div><div>-88.3</div><div>30.6</div><div>-192.1</div></div><div><div>99.19</div><div>-74.1</div><div>65.2</div><div>-157.1</div></div><div><div>98.19</div><div>-68.2</div><div>75.0</div><div>-83.7</div></div><div><div>97.20</div><div>-75.7</div><div>46.8</div><div>-20.1</div></div><div><div>96.40</div><div>-88.9</div><div>0.0</div><div>0.0</div></div></div><div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.24</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.23</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.24</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.24</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-123.9</div></div><div><div>103.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.48</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.47</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.33</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.23</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.22</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.11</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.98</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.96</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.86</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.66</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.64</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div></div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/24
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																			
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> 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102.36	-5.9	1.62	9.60	12.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.36	-5.9	2.19	12.98	12.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.32	-5.9	2.19	12.81	16.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.27	-5.8	3.36	19.40	19.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.7	3.36	19.14	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.7	3.97	22.62	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.6	3.97	22.30	25.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-5.5	5.24	29.04	29.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.5	5.24	28.62	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.5	5.91	32.25	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.4	5.91	32.07	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.4	6.17	33.51	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.02	-5.3	6.17	33.00	36.93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.87	-5.1	9.26	47.20	47.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-5.0	9.26	46.44	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-5.0	10.10	50.62	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-4.9	10.10	49.80	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-4.9	10.96	54.04	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.72	-4.8	10.96	53.12	57.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.66	-4.8	12.84	61.17	61.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-4.7	12.84	60.10	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-4.7	13.83	64.73	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.56	-4.6	13.83	63.57	68.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-4.1	21.90	89.99	89.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-4.0	21.90	88.26	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-4.0	23.22	93.60	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-4.0	23.22	91.78	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-4.0	24.60	97.21	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-3.9	24.60	95.30	100.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.72	-3.4	37.58	126.08	126.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage L2		Schnitt 3L		Seite Anlage L2/26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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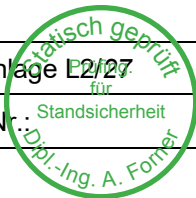
Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																							
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																							
<table><tr><td>100.67</td><td>-3.3</td><td>37.58</td><td>123.42</td><td>129.68</td></tr><tr><td>100.67</td><td>-3.3</td><td>39.49</td><td>129.69</td><td>129.68</td></tr><tr><td>100.62</td><td>-3.2</td><td>39.49</td><td>127.10</td><td>133.07</td></tr><tr><td>100.33</td><td>-2.8</td><td>50.00</td><td>142.10</td><td>153.37</td></tr><tr><td>100.28</td><td>-2.8</td><td>50.00</td><td>139.10</td><td>156.75</td></tr><tr><td>100.28</td><td>-2.8</td><td>50.00</td><td>139.10</td><td>156.75</td></tr><tr><td>100.23</td><td>-2.7</td><td>50.00</td><td>136.14</td><td>160.13</td></tr><tr><td>100.23</td><td>-2.7</td><td>50.00</td><td>136.14</td><td>160.13</td></tr><tr><td>100.18</td><td>-2.7</td><td>50.00</td><td>133.22</td><td>163.52</td></tr><tr><td>99.94</td><td>-2.4</td><td>50.00</td><td>119.23</td><td>180.43</td></tr><tr><td>99.89</td><td>-2.3</td><td>50.00</td><td>116.55</td><td>183.81</td></tr><tr><td>99.89</td><td>-2.3</td><td>50.00</td><td>116.55</td><td>183.81</td></tr><tr><td>99.84</td><td>-2.3</td><td>50.00</td><td>113.86</td><td>187.26</td></tr><tr><td>99.24</td><td>-1.7</td><td>50.00</td><td>84.62</td><td>228.58</td></tr><tr><td>99.19</td><td>-1.6</td><td>50.00</td><td>82.42</td><td>232.02</td></tr><tr><td>99.19</td><td>-1.6</td><td>50.00</td><td>82.42</td><td>232.02</td></tr><tr><td>99.14</td><td>-1.6</td><td>50.00</td><td>80.25</td><td>235.46</td></tr><tr><td>98.24</td><td>-0.9</td><td>50.00</td><td>46.03</td><td>297.44</td></tr><tr><td>98.19</td><td>-0.9</td><td>50.00</td><td>44.35</td><td>300.89</td></tr><tr><td>98.19</td><td>-0.9</td><td>50.00</td><td>44.35</td><td>300.89</td></tr><tr><td>98.14</td><td>-0.9</td><td>50.00</td><td>42.69</td><td>304.33</td></tr><tr><td>97.25</td><td>-0.3</td><td>50.00</td><td>14.89</td><td>366.31</td></tr><tr><td>97.20</td><td>-0.3</td><td>50.00</td><td>13.42</td><td>369.75</td></tr><tr><td>97.20</td><td>-0.3</td><td>50.00</td><td>13.42</td><td>369.75</td></tr><tr><td>97.15</td><td>-0.2</td><td>50.00</td><td>11.96</td><td>373.19</td></tr><tr><td>96.45</td><td>0.2</td><td>50.00</td><td>-8.29</td><td>421.40</td></tr><tr><td>96.40</td><td>0.2</td><td>50.00</td><td>-9.74</td><td>424.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03312675 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.84 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 186.20 kN/m G',k = 0.00 kN/m Pv,k = 20.80 kN/m Eav,k = 85.88 kN/m (Eah,k = 494.77 kN/m) Bv,k = 152.81 Summe V,k = 140.07 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m R,d = Rb,d + Rs1,d = 1106.66 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 223.44 - 0.00 + 98.76 + 24.96 = 347.16 kN/m ==> µ = V,d / R,d = 347.16 / 1106.66 = 0.31</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.67	-3.3	37.58	123.42	129.68	100.67	-3.3	39.49	129.69	129.68	100.62	-3.2	39.49	127.10	133.07	100.33	-2.8	50.00	142.10	153.37	100.28	-2.8	50.00	139.10	156.75	100.28	-2.8	50.00	139.10	156.75	100.23	-2.7	50.00	136.14	160.13	100.23	-2.7	50.00	136.14	160.13	100.18	-2.7	50.00	133.22	163.52	99.94	-2.4	50.00	119.23	180.43	99.89	-2.3	50.00	116.55	183.81	99.89	-2.3	50.00	116.55	183.81	99.84	-2.3	50.00	113.86	187.26	99.24	-1.7	50.00	84.62	228.58	99.19	-1.6	50.00	82.42	232.02	99.19	-1.6	50.00	82.42	232.02	99.14	-1.6	50.00	80.25	235.46	98.24	-0.9	50.00	46.03	297.44	98.19	-0.9	50.00	44.35	300.89	98.19	-0.9	50.00	44.35	300.89	98.14	-0.9	50.00	42.69	304.33	97.25	-0.3	50.00	14.89	366.31	97.20	-0.3	50.00	13.42	369.75	97.20	-0.3	50.00	13.42	369.75	97.15	-0.2	50.00	11.96	373.19	96.45	0.2	50.00	-8.29	421.40	96.40	0.2	50.00	-9.74	424.84
100.67	-3.3	37.58	123.42	129.68																																																																																																																																					
100.67	-3.3	39.49	129.69	129.68																																																																																																																																					
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100.18	-2.7	50.00	133.22	163.52																																																																																																																																					
99.94	-2.4	50.00	119.23	180.43																																																																																																																																					
99.89	-2.3	50.00	116.55	183.81																																																																																																																																					
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99.84	-2.3	50.00	113.86	187.26																																																																																																																																					
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98.19	-0.9	50.00	44.35	300.89																																																																																																																																					
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97.20	-0.3	50.00	13.42	369.75																																																																																																																																					
97.15	-0.2	50.00	11.96	373.19																																																																																																																																					
96.45	0.2	50.00	-8.29	421.40																																																																																																																																					
96.40	0.2	50.00	-9.74	424.84																																																																																																																																					
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/27																																																																																																																																							
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025																																																																																																																																							
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																							

Statistisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 4 (BS-P)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 3 Datei: 14_BS3_LF4.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.24 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 83.10 2.13 103.74 102.86 100.67 nein 2 5.00 2.63 103.74 102.65 99.89 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 47.50 0.00 0.33 103.74 103.74 103.74 103.47 103.33 nein 2 117.67 0.33 0.63 103.74 103.60 103.33 103.22 102.95 nein 3 111.80 0.63 0.93 103.74 103.48 102.95 102.96 102.55 nein 4 105.93 0.93 1.23 103.74 103.35 102.55 102.66 102.08 nein 5 100.07 1.23 1.53 103.74 103.23 102.08 102.36 101.61 nein 6 94.20 1.53 1.83 103.74 103.11 101.61 102.06 101.14 nein 7 88.33 1.83 2.13 103.74 102.98 101.14 101.77 100.67 nein Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 14.50 106.23 104.74 Ständig 2 0.00 29.50 105.50 102.55 Ständig</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/28
Kapitel: 4 LF 4 (BS-P)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.70	-13.30	0.00	0.00	0.00	20.80	0.00	
2	104.41	0.00	0.00	-101.70	0.00	0.00	0.00	

Art des Fußlagers:
Profillänge von 9.84 m fest und Fuß gebettet

Bettungsmodule
von bis ks(oben) ks(unten)
[mNHN] [mNHN] [MN/m³] [MN/m³]
102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 504.285 / 717.547 = 0.703$
Bettungslager $B_{h,d} = 504.285 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 717.547 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-246.23	-193.12	-193.12	-124.78	3.900E+7	2.100E+7	-246.23 Steife

Zusätzlich für Steifen
Steife I
Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-10.7	0.0	-255.58	0.00	0.00
-7.47	103.72	-10.7	0.0	-255.58	0.00	0.00
-7.47	103.72	-10.7	0.0	-255.58	0.00	0.00
-6.64	103.72	-10.7	0.0	-255.58	0.00	0.00
-5.81	103.72	-10.7	0.0	-255.58	0.00	0.00
-4.98	103.72	-10.7	0.0	-255.58	0.00	0.00
-4.15	103.72	-10.7	0.0	-255.58	0.00	0.00
-3.32	103.72	-10.7	0.0	-255.58	0.00	0.00
-2.49	103.72	-10.7	0.0	-255.58	0.00	0.00
-1.66	103.72	-10.7	0.0	-255.58	0.00	0.00
-0.83	103.72	-10.7	0.0	-255.58	0.00	0.00
0.00	103.72	-10.7	0.0	-255.58	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 3\Linkes Ufer\12_BS 3_LF2.vrb
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0084

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.24	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.64	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .

Schnitt:	Anlage L2	Schnitt 3L	Seite Anlage	L2/29
Kapitel:	4	LF 4 (BS-P)	Archiv Nr.:	
Vorgang:	Genehmigungsstatik		Projekt-Nr.:	2004-0025

statisch geprüft
 für
 Standsicherheit
 Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																	
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																	
<div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.24</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.64</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k) mit Zusatzdrücke</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.240</td><td>106.230</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.230</td><td>105.700</td><td>0.000</td><td>5.158</td><td>0.00</td><td>0.00</td></tr><tr><td>105.700</td><td>105.500</td><td>5.158</td><td>7.104</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.240</td><td>7.104</td><td>12.234</td><td>0.00</td><td>0.00</td></tr><tr><td>105.240</td><td>104.740</td><td>12.234</td><td>22.100</td><td>0.00</td><td>0.00</td></tr><tr><td>104.740</td><td>104.410</td><td>7.600</td><td>10.900</td><td>0.00</td><td>0.00</td></tr><tr><td>104.410</td><td>104.240</td><td>10.900</td><td>12.600</td><td>0.00</td><td>0.00</td></tr><tr><td>104.240</td><td>103.740</td><td>12.600</td><td>17.600</td><td>0.00</td><td>0.00</td></tr><tr><td>103.740</td><td>103.720</td><td>17.600</td><td>39.999</td><td>0.00</td><td>0.00</td></tr><tr><td>103.720</td><td>103.603</td><td>39.999</td><td>41.663</td><td>0.00</td><td>0.00</td></tr><tr><td>103.603</td><td>103.479</td><td>41.663</td><td>69.735</td><td>0.00</td><td>0.00</td></tr><tr><td>103.479</td><td>103.467</td><td>69.735</td><td>73.839</td><td>0.00</td><td>0.00</td></tr><tr><td>103.467</td><td>103.355</td><td>73.839</td><td>92.118</td><td>0.00</td><td>0.00</td></tr><tr><td>103.355</td><td>103.325</td><td>92.118</td><td>98.953</td><td>0.00</td><td>0.00</td></tr><tr><td>103.325</td><td>103.231</td><td>98.953</td><td>116.505</td><td>0.00</td><td>0.00</td></tr><tr><td>103.231</td><td>103.216</td><td>116.505</td><td>119.860</td><td>0.00</td><td>0.00</td></tr><tr><td>103.216</td><td>103.106</td><td>119.860</td><td>120.929</td><td>0.00</td><td>0.00</td></tr><tr><td>103.106</td><td>102.982</td><td>120.929</td><td>126.064</td><td>0.00</td><td>0.00</td></tr><tr><td>102.982</td><td>102.957</td><td>126.064</td><td>127.726</td><td>0.00</td><td>0.00</td></tr><tr><td>102.957</td><td>102.948</td><td>127.726</td><td>127.079</td><td>0.00</td><td>0.00</td></tr><tr><td>102.948</td><td>102.858</td><td>127.079</td><td>130.760</td><td>0.00</td><td>0.00</td></tr><tr><td>102.858</td><td>102.659</td><td>130.760</td><td>142.652</td><td>0.00</td><td>0.00</td></tr><tr><td>102.659</td><td>102.651</td><td>142.652</td><td>142.373</td><td>0.00</td><td>0.00</td></tr><tr><td>102.651</td><td>102.640</td><td>142.373</td><td>142.042</td><td>0.00</td><td>0.00</td></tr><tr><td>102.640</td><td>102.553</td><td>110.610</td><td>109.025</td><td>0.00</td><td>0.00</td></tr><tr><td>102.553</td><td>102.550</td><td>109.025</td><td>109.137</td><td>0.00</td><td>0.00</td></tr><tr><td>102.550</td><td>102.362</td><td>79.637</td><td>84.048</td><td>0.00</td><td>0.00</td></tr><tr><td>102.362</td><td>102.223</td><td>84.048</td><td>80.678</td><td>0.00</td><td>0.00</td></tr><tr><td>102.223</td><td>102.130</td><td>80.678</td><td>78.430</td><td>0.00</td><td>0.00</td></tr><tr><td>102.130</td><td>102.083</td><td>78.430</td><td>77.307</td><td>0.00</td><td>0.00</td></tr><tr><td>102.083</td><td>102.065</td><td>77.307</td><td>77.495</td><td>0.00</td><td>0.00</td></tr><tr><td>102.065</td><td>101.768</td><td>77.495</td><td>69.726</td><td>0.00</td><td>0.00</td></tr><tr><td>101.768</td><td>101.613</td><td>69.726</td><td>61.233</td><td>0.00</td><td>0.00</td></tr><tr><td>101.613</td><td>101.195</td><td>61.233</td><td>48.793</td><td>0.00</td><td>0.00</td></tr><tr><td>101.195</td><td>101.143</td><td>48.793</td><td>47.238</td><td>0.00</td><td>0.00</td></tr><tr><td>101.143</td><td>100.672</td><td>47.238</td><td>42.321</td><td>0.00</td><td>0.00</td></tr><tr><td>100.672</td><td>100.476</td><td>42.321</td><td>43.251</td><td>0.00</td><td>0.00</td></tr><tr><td>100.476</td><td>100.231</td><td>43.251</td><td>44.414</td><td>0.00</td><td>0.00</td></tr><tr><td>100.231</td><td>99.889</td><td>44.414</td><td>46.042</td><td>0.00</td><td>0.00</td></tr><tr><td>99.889</td><td>99.191</td><td>46.042</td><td>48.904</td><td>0.00</td><td>0.00</td></tr><tr><td>99.191</td><td>98.194</td><td>48.904</td><td>52.994</td><td>0.00</td><td>0.00</td></tr><tr><td>98.194</td><td>97.196</td><td>52.994</td><td>57.084</td><td>0.00</td><td>0.00</td></tr><tr><td>97.196</td><td>96.399</td><td>57.084</td><td>60.355</td><td>0.00</td><td>0.00</td></tr><tr><td>96.399</td><td>80.000</td><td>60.355</td><td>127.616</td><td>0.00</td><td>0.00</td></tr></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.24</td><td>102.55</td></tr></table>						Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.24	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.64	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.240	106.230	0.000	0.000	0.00	0.00	106.230	105.700	0.000	5.158	0.00	0.00	105.700	105.500	5.158	7.104	0.00	0.00	105.500	105.240	7.104	12.234	0.00	0.00	105.240	104.740	12.234	22.100	0.00	0.00	104.740	104.410	7.600	10.900	0.00	0.00	104.410	104.240	10.900	12.600	0.00	0.00	104.240	103.740	12.600	17.600	0.00	0.00	103.740	103.720	17.600	39.999	0.00	0.00	103.720	103.603	39.999	41.663	0.00	0.00	103.603	103.479	41.663	69.735	0.00	0.00	103.479	103.467	69.735	73.839	0.00	0.00	103.467	103.355	73.839	92.118	0.00	0.00	103.355	103.325	92.118	98.953	0.00	0.00	103.325	103.231	98.953	116.505	0.00	0.00	103.231	103.216	116.505	119.860	0.00	0.00	103.216	103.106	119.860	120.929	0.00	0.00	103.106	102.982	120.929	126.064	0.00	0.00	102.982	102.957	126.064	127.726	0.00	0.00	102.957	102.948	127.726	127.079	0.00	0.00	102.948	102.858	127.079	130.760	0.00	0.00	102.858	102.659	130.760	142.652	0.00	0.00	102.659	102.651	142.652	142.373	0.00	0.00	102.651	102.640	142.373	142.042	0.00	0.00	102.640	102.553	110.610	109.025	0.00	0.00	102.553	102.550	109.025	109.137	0.00	0.00	102.550	102.362	79.637	84.048	0.00	0.00	102.362	102.223	84.048	80.678	0.00	0.00	102.223	102.130	80.678	78.430	0.00	0.00	102.130	102.083	78.430	77.307	0.00	0.00	102.083	102.065	77.307	77.495	0.00	0.00	102.065	101.768	77.495	69.726	0.00	0.00	101.768	101.613	69.726	61.233	0.00	0.00	101.613	101.195	61.233	48.793	0.00	0.00	101.195	101.143	48.793	47.238	0.00	0.00	101.143	100.672	47.238	42.321	0.00	0.00	100.672	100.476	42.321	43.251	0.00	0.00	100.476	100.231	43.251	44.414	0.00	0.00	100.231	99.889	44.414	46.042	0.00	0.00	99.889	99.191	46.042	48.904	0.00	0.00	99.191	98.194	48.904	52.994	0.00	0.00	98.194	97.196	52.994	57.084	0.00	0.00	97.196	96.399	57.084	60.355	0.00	0.00	96.399	80.000	60.355	127.616	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.24	102.55
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																														
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103.740	103.720	17.600	39.999	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.720	103.603	39.999	41.663	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.603	103.479	41.663	69.735	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.479	103.467	69.735	73.839	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.467	103.355	73.839	92.118	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.355	103.325	92.118	98.953	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.325	103.231	98.953	116.505	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.231	103.216	116.505	119.860	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.216	103.106	119.860	120.929	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
103.106	102.982	120.929	126.064	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.982	102.957	126.064	127.726	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.957	102.948	127.726	127.079	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.948	102.858	127.079	130.760	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.858	102.659	130.760	142.652	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.659	102.651	142.652	142.373	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.651	102.640	142.373	142.042	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.640	102.553	110.610	109.025	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.553	102.550	109.025	109.137	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.550	102.362	79.637	84.048	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.362	102.223	84.048	80.678	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.223	102.130	80.678	78.430	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.130	102.083	78.430	77.307	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.083	102.065	77.307	77.495	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
102.065	101.768	77.495	69.726	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.768	101.613	69.726	61.233	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.613	101.195	61.233	48.793	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.195	101.143	48.793	47.238	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
101.143	100.672	47.238	42.321	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.672	100.476	42.321	43.251	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.476	100.231	43.251	44.414	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.231	99.889	44.414	46.042	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.889	99.191	46.042	48.904	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.191	98.194	48.904	52.994	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
98.194	97.196	52.994	57.084	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
97.196	96.399	57.084	60.355	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
96.399	80.000	60.355	127.616	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																																																		
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																		
0.00	0.00	106.24	102.55																																																																																																																																																																																																																																																																																																																																																		
Schnitt:		Anlage L2	Schnitt 3L	Seite Anlage L2/30																																																																																																																																																																																																																																																																																																																																																	
Kapitel:		4	LF 4 (BS-P)	Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																	

Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpg_h kp_{ch} phi_{i,k} delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.55 102.55 0.00 0.00 102.55 102.36 -11.33 -18.74 102.36 102.22 -18.74 -24.25 102.22 102.13 -24.25 -27.92 102.13 102.08 -27.92 -29.75 102.08 102.06 -29.75 -30.47 102.06 101.77 -30.47 -42.21 101.77 101.61 -42.21 -48.31 101.61 101.19 -48.31 -64.81 101.19 101.14 -64.81 -66.87 101.14 100.67 -66.87 -85.43 100.67 100.48 -85.43 -93.16 100.48 100.23 -93.16 -102.83 100.23 99.89 -102.83 -116.36 99.89 99.19 -116.36 -143.91 99.19 98.19 -143.91 -183.26 98.19 97.20 -183.26 -222.61 97.20 96.40 -222.61 -254.09 96.40 80.00 -254.09 -901.29</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.24 0.0 0.0 0.0 106.23 -0.2 0.0 0.0 105.70 -13.0 -1.7 -0.3 105.70 -41.1 -1.7 -18.3 105.50 -45.9 -3.3 -18.8 105.24 -52.2 -6.5 -20.0 104.74 -64.3 -17.5 -25.7 104.41 -72.2 -21.3 -32.1 104.41 -72.2 -158.6 -32.1 104.24 -76.3 -161.2 -59.3 103.74 -88.4 -170.8 -142.1 103.72 -89.1 -171.8 -145.6 -255.6 103.72 -89.1 83.8 -145.6 103.60 -93.6 77.7 -136.1 103.48 -99.0 68.9 -127.0 103.47 -99.6 67.8 -126.1 103.35 -105.4 55.9 -119.2 103.33 -107.1 52.3 -117.6 103.23 -112.9 39.3 -113.2 103.22 -113.8 37.1 -112.7 103.11 -121.0 20.3 -109.5 102.98 -129.2 0.7 -108.2 102.96 -130.9 -3.4 -108.3 102.95 -131.5 -4.8 -108.3 102.86 -137.7 -19.6 -109.4 102.66 -151.7 -54.2 -116.7 102.65 -152.4 -55.8 -117.1 102.64 -153.1 -57.7 -117.7 102.55 -160.1 -69.9 -123.3 102.55 -160.3 -70.3 -123.5 102.36 -164.3 -85.2 -138.2 102.22 -165.1 -93.5 -150.7 102.13 -165.3 -97.8 -159.6 102.08 -165.2 -99.6 -164.2 102.06 -165.2 -100.1 -166.1 101.77 -163.1 -104.8 -196.8 101.61 -160.8 -102.7 -212.9</div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/3L
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 101.19 -150.5 -80.9 -252.0 101.14 -148.7 -76.6 -256.1 100.67 -129.0 -25.7 -281.0 100.48 -119.2 -0.1 -283.5 100.23 -108.6 27.5 -280.0 99.89 -96.7 58.0 -265.1 99.19 -81.8 94.9 -209.9 98.19 -77.9 99.8 -108.7 97.20 -89.9 60.0 -25.6 96.40 -107.0 0.0 0.0 </div> </div> <div> Schnittgrößen ([g+q+w],k) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.24 0.0 0.0 0.0 106.23 -0.2 0.0 0.0 105.70 -10.2 -1.4 -0.2 105.70 -31.0 -1.4 -13.5 105.50 -34.8 -2.6 -13.9 105.24 -39.7 -5.1 -14.9 104.74 -49.2 -13.7 -19.4 104.41 -55.4 -16.7 -24.4 104.41 -55.4 -118.4 -24.4 104.24 -58.6 -120.4 -44.7 103.74 -68.1 -128.0 -106.7 103.72 -68.7 -128.8 -109.3 -193.1 103.72 -68.7 64.4 -109.3 103.60 -72.2 59.6 -102.0 103.48 -76.4 52.7 -95.0 103.47 -76.9 51.8 -94.4 103.35 -81.5 42.5 -89.1 103.33 -82.8 39.7 -87.9 103.23 -87.3 29.5 -84.6 103.22 -88.0 27.7 -84.2 103.11 -93.7 14.5 -81.8 102.98 -100.1 -0.8 -81.0 102.96 -101.5 -4.0 -81.0 102.95 -101.9 -5.1 -81.1 102.86 -106.8 -16.8 -82.1 102.66 -117.8 -43.9 -88.0 102.65 -118.3 -45.1 -88.4 102.64 -118.9 -46.6 -88.9 102.55 -124.3 -56.1 -93.4 102.55 -124.5 -56.5 -93.6 102.36 -127.9 -68.2 -105.4 102.22 -128.5 -74.7 -115.3 102.13 -128.7 -78.0 -122.5 102.08 -128.7 -79.4 -126.1 102.06 -128.6 -79.9 -127.6 101.77 -127.0 -83.5 -152.1 101.61 -125.2 -81.8 -164.9 101.19 -117.1 -64.6 -196.1 101.14 -115.8 -61.2 -199.3 100.67 -100.4 -21.1 -219.4 100.48 -92.7 -1.0 -221.5 100.23 -84.5 20.8 -219.0 99.89 -75.2 45.0 -207.5 99.19 -63.6 74.2 -164.5 98.19 -60.7 78.3 -85.2 97.20 -70.1 47.1 -20.1 96.40 -83.5 0.0 0.0 </div>		

Schnittgrößen (g+w,k)
Tiefe N Q M A(h)
[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]
106.24 0.0 0.0 0.0
106.23 -0.2 0.0 0.0
105.70 -10.2 -1.4 -0.2
105.70 -31.0 -1.4 -13.5
105.50 -34.8 -2.6 -13.9
105.24 -39.7 -5.1 -14.9


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																														
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																																																																																																																																																																																																																																																														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																														
<table><tr><td>104.74</td><td>-49.2</td><td>-13.7</td><td>-19.4</td><td></td></tr><tr><td>104.41</td><td>-55.4</td><td>-16.7</td><td>-24.4</td><td></td></tr><tr><td>104.41</td><td>-55.4</td><td>-118.4</td><td>-24.4</td><td></td></tr><tr><td>104.24</td><td>-58.6</td><td>-120.4</td><td>-44.7</td><td></td></tr><tr><td>103.74</td><td>-68.1</td><td>-128.0</td><td>-106.7</td><td></td></tr><tr><td>103.72</td><td>-68.7</td><td>-128.8</td><td>-109.3</td><td>-193.1</td></tr><tr><td>103.72</td><td>-68.7</td><td>64.4</td><td>-109.3</td><td></td></tr><tr><td>103.60</td><td>-72.2</td><td>59.6</td><td>-102.0</td><td></td></tr><tr><td>103.48</td><td>-76.4</td><td>52.7</td><td>-95.0</td><td></td></tr><tr><td>103.47</td><td>-76.9</td><td>51.8</td><td>-94.4</td><td></td></tr><tr><td>103.35</td><td>-81.5</td><td>42.5</td><td>-89.1</td><td></td></tr><tr><td>103.33</td><td>-82.8</td><td>39.7</td><td>-87.9</td><td></td></tr><tr><td>103.23</td><td>-87.3</td><td>29.5</td><td>-84.6</td><td></td></tr><tr><td>103.22</td><td>-88.0</td><td>27.7</td><td>-84.2</td><td></td></tr><tr><td>103.11</td><td>-93.7</td><td>14.5</td><td>-81.8</td><td></td></tr><tr><td>102.98</td><td>-100.1</td><td>-0.8</td><td>-81.0</td><td></td></tr><tr><td>102.96</td><td>-101.5</td><td>-4.0</td><td>-81.0</td><td></td></tr><tr><td>102.95</td><td>-101.9</td><td>-5.1</td><td>-81.1</td><td></td></tr><tr><td>102.86</td><td>-106.8</td><td>-16.8</td><td>-82.1</td><td></td></tr><tr><td>102.66</td><td>-117.8</td><td>-43.9</td><td>-88.0</td><td></td></tr><tr><td>102.65</td><td>-118.3</td><td>-45.1</td><td>-88.4</td><td></td></tr><tr><td>102.64</td><td>-118.9</td><td>-46.6</td><td>-88.9</td><td></td></tr><tr><td>102.55</td><td>-124.3</td><td>-56.1</td><td>-93.4</td><td></td></tr><tr><td>102.55</td><td>-124.5</td><td>-56.5</td><td>-93.6</td><td></td></tr><tr><td>102.36</td><td>-127.9</td><td>-68.2</td><td>-105.4</td><td></td></tr><tr><td>102.22</td><td>-128.5</td><td>-74.7</td><td>-115.3</td><td></td></tr><tr><td>102.13</td><td>-128.7</td><td>-78.0</td><td>-122.5</td><td></td></tr><tr><td>102.08</td><td>-128.7</td><td>-79.4</td><td>-126.1</td><td></td></tr><tr><td>102.06</td><td>-128.6</td><td>-79.9</td><td>-127.6</td><td></td></tr><tr><td>101.77</td><td>-127.0</td><td>-83.5</td><td>-152.1</td><td></td></tr><tr><td>101.61</td><td>-125.2</td><td>-81.8</td><td>-164.9</td><td></td></tr><tr><td>101.19</td><td>-117.1</td><td>-64.6</td><td>-196.1</td><td></td></tr><tr><td>101.14</td><td>-115.8</td><td>-61.2</td><td>-199.3</td><td></td></tr><tr><td>100.67</td><td>-100.4</td><td>-21.1</td><td>-219.4</td><td></td></tr><tr><td>100.48</td><td>-92.7</td><td>-1.0</td><td>-221.5</td><td></td></tr><tr><td>100.23</td><td>-84.5</td><td>20.8</td><td>-219.0</td><td></td></tr><tr><td>99.89</td><td>-75.2</td><td>45.0</td><td>-207.5</td><td></td></tr><tr><td>99.19</td><td>-63.6</td><td>74.2</td><td>-164.5</td><td></td></tr><tr><td>98.19</td><td>-60.7</td><td>78.3</td><td>-85.2</td><td></td></tr><tr><td>97.20</td><td>-70.1</td><td>47.1</td><td>-20.1</td><td></td></tr><tr><td>96.40</td><td>-83.5</td><td>0.0</td><td>0.0</td><td></td></tr></table> <table><tr><td colspan="5">Schnittgrößen (q,k)</td></tr><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td></td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>106.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.70</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-124.8</td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.96</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.86</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.66</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.64</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>			104.74	-49.2	-13.7	-19.4		104.41	-55.4	-16.7	-24.4		104.41	-55.4	-118.4	-24.4		104.24	-58.6	-120.4	-44.7		103.74	-68.1	-128.0	-106.7		103.72	-68.7	-128.8	-109.3	-193.1	103.72	-68.7	64.4	-109.3		103.60	-72.2	59.6	-102.0		103.48	-76.4	52.7	-95.0		103.47	-76.9	51.8	-94.4		103.35	-81.5	42.5	-89.1		103.33	-82.8	39.7	-87.9		103.23	-87.3	29.5	-84.6		103.22	-88.0	27.7	-84.2		103.11	-93.7	14.5	-81.8		102.98	-100.1	-0.8	-81.0		102.96	-101.5	-4.0	-81.0		102.95	-101.9	-5.1	-81.1		102.86	-106.8	-16.8	-82.1		102.66	-117.8	-43.9	-88.0		102.65	-118.3	-45.1	-88.4		102.64	-118.9	-46.6	-88.9		102.55	-124.3	-56.1	-93.4		102.55	-124.5	-56.5	-93.6		102.36	-127.9	-68.2	-105.4		102.22	-128.5	-74.7	-115.3		102.13	-128.7	-78.0	-122.5		102.08	-128.7	-79.4	-126.1		102.06	-128.6	-79.9	-127.6		101.77	-127.0	-83.5	-152.1		101.61	-125.2	-81.8	-164.9		101.19	-117.1	-64.6	-196.1		101.14	-115.8	-61.2	-199.3		100.67	-100.4	-21.1	-219.4		100.48	-92.7	-1.0	-221.5		100.23	-84.5	20.8	-219.0		99.89	-75.2	45.0	-207.5		99.19	-63.6	74.2	-164.5		98.19	-60.7	78.3	-85.2		97.20	-70.1	47.1	-20.1		96.40	-83.5	0.0	0.0		Schnittgrößen (q,k)					Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]		[kN·m/m]	[kN/m]	106.24	0.0	0.0	0.0		106.23	0.0	0.0	0.0		105.70	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.24	0.0	0.0	0.0		104.74	0.0	0.0	0.0		104.41	0.0	0.0	0.0		104.24	0.0	0.0	0.0		103.74	0.0	0.0	0.0		103.72	0.0	0.0	0.0	-124.8	103.60	0.0	0.0	0.0		103.48	0.0	0.0	0.0		103.47	0.0	0.0	0.0		103.35	0.0	0.0	0.0		103.33	0.0	0.0	0.0		103.23	0.0	0.0	0.0		103.22	0.0	0.0	0.0		103.11	0.0	0.0	0.0		102.98	0.0	0.0	0.0		102.96	0.0	0.0	0.0		102.95	0.0	0.0	0.0		102.86	0.0	0.0	0.0		102.66	0.0	0.0	0.0		102.65	0.0	0.0	0.0		102.64	0.0	0.0	0.0		102.55	0.0	0.0	0.0	
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102.55	-124.3	-56.1	-93.4																																																																																																																																																																																																																																																																																																																																																													
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102.36	-127.9	-68.2	-105.4																																																																																																																																																																																																																																																																																																																																																													
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.24</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.19</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr></table>						102.55	0.0	0.0	0.0	102.36	0.0	0.0	0.0	102.22	0.0	0.0	0.0	102.13	0.0	0.0	0.0	102.08	0.0	0.0	0.0	102.06	0.0	0.0	0.0	101.77	0.0	0.0	0.0	101.61	0.0	0.0	0.0	101.19	0.0	0.0	0.0	101.14	0.0	0.0	0.0	100.67	0.0	0.0	0.0	100.48	0.0	0.0	0.0	100.23	0.0	0.0	0.0	99.89	0.0	0.0	0.0	99.19	0.0	0.0	0.0	98.19	0.0	0.0	0.0	97.20	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-13.8	-	-	-	106.23	-13.7	-	-	-	106.23	-13.7	-	-	-	106.18	-13.6	-	-	-	105.74	-12.7	-	-	-	105.70	-12.6	-	-	-	105.70	-12.6	-	-	-	105.65	-12.5	-	-	-	105.55	-12.3	-	-	-	105.50	-12.2	-	-	-	105.50	-12.2	-	-	-	105.45	-12.0	-	-	-	105.29	-11.7	-	-	-	105.24	-11.6	-	-	-	105.24	-11.6	-	-	-	105.19	-11.5	-	-	-	104.79	-10.6	-	-	-	104.74	-10.5	-	-	-	104.74	-10.5	-	-	-	104.69	-10.4	-	-	-	104.46	-9.9	-	-	-	104.41	-9.8	-	-	-	104.41	-9.8	-	-	-	104.35	-9.7	-	-	-	104.30	-9.6	-	-	-	104.24	-9.5	-	-	-	104.24	-9.5	-	-	-	104.19	-9.4	-	-	-	103.79	-8.5	-	-	-	103.74	-8.4	-	-	-	103.74	-8.4	-	-	-	103.74	-8.4	-	-	-	103.74	-8.4	-	-	-	103.72	-8.4	-	-	-	103.72	-8.4	-	-	-	103.66	-8.3	-	-	-	103.66	-8.3	-	-	-	103.60	-8.2	-	-	-	103.60	-8.2	-	-	-	103.54	-8.0	-	-	-	103.54	-8.0	-	-	-	103.48	-7.9	-	-	-	103.48	-7.9	-	-	-	103.47	-7.9	-	-	-	103.47	-7.9	-	-	-	103.41	-7.8	-	-	-	103.41	-7.8	-	-	-	103.35	-7.7	-	-	-
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102.55	-6.1	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.55	-6.1	0.00	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
102.50	-6.0	0.00	0.00	0.00	23.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
102.41	-5.9	5.03	29.56	29.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.36	-5.8	5.03	29.12	32.80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.36	-5.8	5.67	32.80	32.80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.32	-5.7	5.67	32.32	36.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.27	-5.6	6.98	39.22	39.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.5	6.98	38.64	42.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.5	7.67	42.43	42.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.4	7.67	41.79	45.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.4	8.38	45.65	45.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-5.4	8.38	44.95	48.86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-5.4	9.11	48.86	48.86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.3	9.11	48.11	52.07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-5.3	9.86	52.07	52.07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.3	9.86	51.75	53.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-5.3	10.16	53.33	53.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.02	-5.2	10.16	52.45	56.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-4.8	14.61	70.44	70.44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-4.7	14.61	69.21	73.86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-4.7	15.60	73.86	73.86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.72	-4.6	15.60	72.50	77.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.66	-4.6	17.75	80.99	80.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-4.5	17.75	79.46	84.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-4.5	18.89	84.55	84.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.56	-4.4	18.89	82.92	88.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-3.9	28.22	109.81	109.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-3.8	28.22	107.55	113.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-3.8	29.76	113.42	113.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-3.7	29.76	111.06	117.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-3.7	31.36	117.03	117.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-3.7	31.36	114.57	120.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.72	-3.1	46.59	145.90	145.89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage L2	Schnitt 3L		Seite Anlage L2/35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Kapitel:		4	LF 4 (BS-P)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.67</div><div>-3.1</div><div>46.59</div><div>142.61</div><div>149.50</div></div><div><div>100.67</div><div>-3.1</div><div>48.84</div><div>149.51</div><div>149.50</div></div><div><div>100.62</div><div>-3.0</div><div>48.84</div><div>146.32</div><div>152.89</div></div><div><div>100.53</div><div>-2.9</div><div>50.00</div><div>143.40</div><div>159.65</div></div><div><div>100.48</div><div>-2.8</div><div>50.00</div><div>140.28</div><div>163.04</div></div><div><div>100.48</div><div>-2.8</div><div>50.00</div><div>140.28</div><div>163.04</div></div><div><div>100.43</div><div>-2.7</div><div>50.00</div><div>137.20</div><div>166.42</div></div><div><div>100.28</div><div>-2.6</div><div>50.00</div><div>128.23</div><div>176.57</div></div><div><div>100.23</div><div>-2.5</div><div>50.00</div><div>125.33</div><div>179.95</div></div><div><div>100.23</div><div>-2.5</div><div>50.00</div><div>125.33</div><div>179.95</div></div><div><div>100.18</div><div>-2.4</div><div>50.00</div><div>122.48</div><div>183.33</div></div><div><div>99.94</div><div>-2.2</div><div>50.00</div><div>108.86</div><div>200.25</div></div><div><div>99.89</div><div>-2.1</div><div>50.00</div><div>106.27</div><div>203.63</div></div><div><div>99.89</div><div>-2.1</div><div>50.00</div><div>106.27</div><div>203.63</div></div><div><div>99.84</div><div>-2.1</div><div>50.00</div><div>103.67</div><div>207.08</div></div><div><div>99.24</div><div>-1.5</div><div>50.00</div><div>75.73</div><div>248.40</div></div><div><div>99.19</div><div>-1.5</div><div>50.00</div><div>73.65</div><div>251.84</div></div><div><div>99.19</div><div>-1.5</div><div>50.00</div><div>73.65</div><div>251.84</div></div><div><div>99.14</div><div>-1.4</div><div>50.00</div><div>71.60</div><div>255.28</div></div><div><div>98.24</div><div>-0.8</div><div>50.00</div><div>39.78</div><div>317.26</div></div><div><div>98.19</div><div>-0.8</div><div>50.00</div><div>38.23</div><div>320.70</div></div><div><div>98.19</div><div>-0.8</div><div>50.00</div><div>38.23</div><div>320.70</div></div><div><div>98.14</div><div>-0.7</div><div>50.00</div><div>36.71</div><div>324.15</div></div><div><div>97.25</div><div>-0.2</div><div>50.00</div><div>11.44</div><div>386.13</div></div><div><div>97.20</div><div>-0.2</div><div>50.00</div><div>10.11</div><div>389.57</div></div><div><div>97.20</div><div>-0.2</div><div>50.00</div><div>10.11</div><div>389.57</div></div><div><div>97.15</div><div>-0.2</div><div>50.00</div><div>8.79</div><div>393.01</div></div><div><div>96.45</div><div>0.2</div><div>50.00</div><div>-9.48</div><div>441.22</div></div><div><div>96.40</div><div>0.2</div><div>50.00</div><div>-10.78</div><div>444.66</div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02988137 Theoretischer Fußpunkt = 96.399 m</div><div>Einbindetiefe tg = 6.15 m Profillänge = 9.84 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 186.20 kN/m G',k = 0.00 kN/m Pv,k = 20.80 kN/m Eav,k = 84.15 kN/m (Eah,k = 486.08 kN/m) Bv,k = 157.77 Summe V,k = 133.39 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m Rd = Rb,d + Rs1,d = 1106.66 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 251.37 - 0.00 + 107.29 + 28.08 = 386.75 kN/m ==> µ = V,d / Rd = 386.75 / 1106.66 = 0.35</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage L2 Schnitt 3L		Seite Anlage L2/36
Kapitel: 4 LF 4 (BS-P)		Archiv Nr. 2104-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Anlage M2 Schnitt 4L</div> <div>1 LF 1 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 11_BS 4_LF1.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.20 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.30 2.14 103.74 102.85 100.66 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.70 0.00 0.34 103.74 103.74 103.74 103.46 103.31 nein 2 18.90 5.48 10.08 103.74 100.85 95.43 93.07 88.22 nein 3 0.65 10.08 13.88 103.74 97.92 88.22 88.88 82.26 nein 4 2.50 2.14 5.48 103.75 103.75 100.68 99.60 95.45 nein 5 74.17 0.34 0.64 103.74 103.60 103.31 103.21 102.94 nein 6 81.33 0.64 0.94 103.74 103.47 102.94 102.95 102.54 nein 7 88.47 0.94 1.24 103.74 103.35 102.54 102.65 102.07 nein 8 95.63 1.24 1.54 103.74 103.23 102.07 102.35 101.60 nein 9 102.78 1.54 1.84 103.74 103.10 101.60 102.06 101.13 nein 10 109.92 1.84 2.14 103.74 102.98 101.13 101.76 100.66 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 14.00 106.19 104.74 Ständig</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/1
Kapitel: 1 LF 1 (BS-T)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div>Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k</div> <div>[-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m]</div> <div>1 104.41 0.00 0.00 -89.50 0.00 0.00 0.00</div> <div>Art des Fußlagers:</div> <div>Profillänge von 9.80 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.32 5.000 5.000</div> <div>105.32 103.74 5.000 5.000</div> <div>103.74 102.62 5.000 5.000</div> <div>102.62 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 645.264 / 1725.919 = 0.374$</div> <div>Bettungslager $B_{h,d} = 645.264 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1725.919 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c,k d(p)/phi d(a)/phi</div> <div>pas/akt [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [-] [-]</div> <div>1 105.32 19.00/0.00 10.00/0.00 30.00/0.00 0.00/0.00 -0.667 0.667</div> <div>2 103.74 17.00/0.00 8.50/0.00 22.50/0.00 0.00/0.00 -0.667 0.667</div> <div>3 102.62 17.00/17.00 8.50/8.50 22.50/22.50 3.00/3.00 -0.667 0.667</div> <div>4 80.00 21.00/21.00 11.50/11.50 32.50/32.50 0.00/0.00 -0.667 0.667</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.32 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.74 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.62 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.200 106.190 0.000 0.000 0.00 0.00</div> <div>106.190 105.750 0.000 4.248 0.00 0.00</div> <div>105.750 105.500 4.248 6.662 0.00 0.00</div> <div>105.500 105.320 6.662 8.400 0.00 1.80</div> <div>105.320 105.160 8.400 9.945 1.80 3.40</div> <div>105.160 105.000 9.945 11.490 3.40 5.00</div> <div>105.000 104.740 11.490 14.000 5.00 5.00</div> <div>104.740 104.410 0.000 0.000 5.00 5.00</div> <div>104.410 104.156 0.000 0.000 5.00 5.00</div> <div>104.156 103.750 0.000 0.000 5.00 5.00</div> <div>103.750 103.740 0.000 0.008 5.00 5.00</div> <div>103.740 103.737 0.003 21.730 5.00 5.00</div> <div>103.737 103.599 21.730 22.375 5.00 5.00</div> <div>103.599 103.475 22.375 39.045 5.00 5.00</div> <div>103.475 103.458 39.045 42.525 5.00 5.00</div> <div>103.458 103.351 42.525 47.834 5.00 5.00</div> <div>103.351 103.312 47.834 51.813 5.00 5.00</div> <div>103.312 103.226 51.813 63.421 5.00 5.00</div> <div>103.226 103.208 63.421 66.745 5.00 5.00</div> <div>103.208 103.155 66.745 68.857 5.00 5.00</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/2
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																							
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																			
<table><tr><td>103.155</td><td>103.102</td><td>68.857</td><td>70.969</td><td>5.00</td><td>5.00</td></tr><tr><td>103.102</td><td>102.978</td><td>70.969</td><td>80.210</td><td>5.00</td><td>5.00</td></tr><tr><td>102.978</td><td>102.949</td><td>80.210</td><td>83.203</td><td>5.00</td><td>5.00</td></tr><tr><td>102.949</td><td>102.935</td><td>83.203</td><td>83.260</td><td>5.00</td><td>5.00</td></tr><tr><td>102.935</td><td>102.854</td><td>83.260</td><td>88.555</td><td>5.00</td><td>5.00</td></tr><tr><td>102.854</td><td>102.652</td><td>88.555</td><td>105.072</td><td>5.00</td><td>5.00</td></tr><tr><td>102.652</td><td>102.620</td><td>105.072</td><td>105.246</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.581</td><td>76.170</td><td>76.362</td><td>5.00</td><td>5.00</td></tr><tr><td>102.581</td><td>102.543</td><td>76.362</td><td>76.554</td><td>5.00</td><td>5.00</td></tr><tr><td>102.543</td><td>102.355</td><td>76.554</td><td>83.559</td><td>5.00</td><td>5.00</td></tr><tr><td>102.355</td><td>102.166</td><td>83.559</td><td>82.042</td><td>5.00</td><td>5.00</td></tr><tr><td>102.166</td><td>102.072</td><td>82.042</td><td>81.284</td><td>5.00</td><td>5.00</td></tr><tr><td>102.072</td><td>102.057</td><td>81.284</td><td>81.536</td><td>5.00</td><td>5.00</td></tr><tr><td>102.057</td><td>101.760</td><td>81.536</td><td>74.766</td><td>5.00</td><td>5.00</td></tr><tr><td>101.760</td><td>101.602</td><td>74.766</td><td>65.529</td><td>5.00</td><td>5.00</td></tr><tr><td>101.602</td><td>101.184</td><td>65.529</td><td>49.821</td><td>5.00</td><td>5.00</td></tr><tr><td>101.184</td><td>101.132</td><td>49.821</td><td>47.857</td><td>5.00</td><td>5.00</td></tr><tr><td>101.132</td><td>101.085</td><td>47.857</td><td>46.960</td><td>5.00</td><td>5.00</td></tr><tr><td>101.085</td><td>100.851</td><td>46.960</td><td>42.472</td><td>5.00</td><td>5.00</td></tr><tr><td>100.851</td><td>100.682</td><td>42.472</td><td>39.425</td><td>5.00</td><td>5.00</td></tr><tr><td>100.682</td><td>100.662</td><td>39.425</td><td>39.055</td><td>5.00</td><td>5.00</td></tr><tr><td>100.662</td><td>100.156</td><td>39.055</td><td>41.755</td><td>5.00</td><td>5.00</td></tr><tr><td>100.156</td><td>99.601</td><td>41.755</td><td>44.725</td><td>5.00</td><td>5.00</td></tr><tr><td>99.601</td><td>99.156</td><td>44.725</td><td>47.006</td><td>5.00</td><td>5.00</td></tr><tr><td>99.156</td><td>98.168</td><td>47.006</td><td>52.074</td><td>5.00</td><td>5.00</td></tr><tr><td>98.168</td><td>97.921</td><td>52.074</td><td>53.341</td><td>5.00</td><td>5.00</td></tr><tr><td>97.921</td><td>97.160</td><td>53.341</td><td>57.263</td><td>5.00</td><td>5.00</td></tr><tr><td>97.160</td><td>96.399</td><td>57.263</td><td>61.185</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>95.446</td><td>61.185</td><td>66.093</td><td>5.00</td><td>5.00</td></tr><tr><td>95.446</td><td>95.426</td><td>66.093</td><td>66.202</td><td>5.00</td><td>5.00</td></tr><tr><td>95.426</td><td>93.071</td><td>66.202</td><td>75.919</td><td>5.00</td><td>5.00</td></tr><tr><td>93.071</td><td>88.882</td><td>75.919</td><td>87.384</td><td>5.00</td><td>5.00</td></tr><tr><td>88.882</td><td>88.216</td><td>87.384</td><td>89.185</td><td>5.00</td><td>5.00</td></tr><tr><td>88.216</td><td>82.259</td><td>89.185</td><td>113.407</td><td>5.00</td><td>5.00</td></tr><tr><td>82.259</td><td>80.000</td><td>113.407</td><td>122.673</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.20 105.75</p> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 1 105.32 5.005 5.388 30.000 -20.01 18.10 2 103.74 3.034 3.911 22.500 -15.01 23.23 3 102.62 3.034 3.911 22.500 -15.01 23.23 4 80.00 6.006 6.054 32.500 -21.68 16.35</p> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 106.19 105.75 0.00 0.00 105.75 105.50 0.00 -14.63 105.50 105.32 -14.63 -25.16 105.32 105.16 -15.25 -20.33 105.16 105.00 -20.33 -25.41 105.00 104.74 -25.41 -29.53 104.74 104.41 -29.53 -34.77 104.41 104.16 -34.77 -38.80 104.16 103.75 -38.80 -45.24 103.75 103.74 -45.24 -45.40 103.74 103.74 -52.62 -52.66 103.74 103.60 -52.66 -54.86 103.60 103.47 -54.86 -56.83 103.47 103.46 -56.83 -57.09 103.46 103.35 -57.09 -58.80</p>								103.155	103.102	68.857	70.969	5.00	5.00	103.102	102.978	70.969	80.210	5.00	5.00	102.978	102.949	80.210	83.203	5.00	5.00	102.949	102.935	83.203	83.260	5.00	5.00	102.935	102.854	83.260	88.555	5.00	5.00	102.854	102.652	88.555	105.072	5.00	5.00	102.652	102.620	105.072	105.246	5.00	5.00	102.620	102.581	76.170	76.362	5.00	5.00	102.581	102.543	76.362	76.554	5.00	5.00	102.543	102.355	76.554	83.559	5.00	5.00	102.355	102.166	83.559	82.042	5.00	5.00	102.166	102.072	82.042	81.284	5.00	5.00	102.072	102.057	81.284	81.536	5.00	5.00	102.057	101.760	81.536	74.766	5.00	5.00	101.760	101.602	74.766	65.529	5.00	5.00	101.602	101.184	65.529	49.821	5.00	5.00	101.184	101.132	49.821	47.857	5.00	5.00	101.132	101.085	47.857	46.960	5.00	5.00	101.085	100.851	46.960	42.472	5.00	5.00	100.851	100.682	42.472	39.425	5.00	5.00	100.682	100.662	39.425	39.055	5.00	5.00	100.662	100.156	39.055	41.755	5.00	5.00	100.156	99.601	41.755	44.725	5.00	5.00	99.601	99.156	44.725	47.006	5.00	5.00	99.156	98.168	47.006	52.074	5.00	5.00	98.168	97.921	52.074	53.341	5.00	5.00	97.921	97.160	53.341	57.263	5.00	5.00	97.160	96.399	57.263	61.185	5.00	5.00	96.399	95.446	61.185	66.093	5.00	5.00	95.446	95.426	66.093	66.202	5.00	5.00	95.426	93.071	66.202	75.919	5.00	5.00	93.071	88.882	75.919	87.384	5.00	5.00	88.882	88.216	87.384	89.185	5.00	5.00	88.216	82.259	89.185	113.407	5.00	5.00	82.259	80.000	113.407	122.673	5.00	5.00
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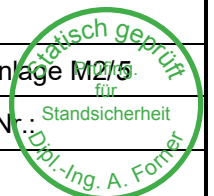
Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



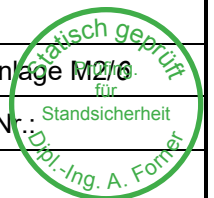
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):									
Auftraggeber: Stadtverwaltung Leipzig		-									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>103.35103.31-58.80-59.41</div><div>103.31103.23-59.41-60.77</div><div>103.23103.21-60.77-61.07</div><div>103.21103.15-61.07-61.91</div><div>103.15103.10-61.91-62.74</div><div>103.10102.98-62.74-64.71</div><div>102.98102.95-64.71-65.17</div><div>102.95102.94-65.17-65.39</div><div>102.94102.85-65.39-66.69</div><div>102.85102.65-66.69-69.89</div><div>102.65102.62-69.89-70.39</div><div>102.62102.58-125.07-126.71</div><div>102.58102.54-126.71-128.36</div><div>102.54102.35-128.36-136.35</div><div>102.35102.17-136.35-144.35</div><div>102.17102.07-144.35-148.34</div><div>102.07102.06-148.34-148.98</div><div>102.06101.76-148.98-161.62</div><div>101.76101.60-161.62-168.33</div><div>101.60101.18-168.33-186.10</div><div>101.18101.13-186.10-188.32</div><div>101.13101.09-188.32-190.30</div><div>101.09100.85-190.30-200.24</div><div>100.85100.68-200.24-207.44</div><div>100.68100.66-207.44-208.30</div><div>100.66100.16-208.30-229.78</div><div>100.1699.60-229.78-253.40</div><div>99.6099.16-253.40-272.29</div><div>99.1698.17-272.29-314.29</div><div>98.1797.92-314.29-324.79</div><div>97.9297.16-324.79-357.14</div><div>97.1696.40-357.14-389.48</div><div>96.4095.45-389.48-429.96</div><div>95.4595.43-429.96-430.82</div><div>95.4393.07-430.82-530.93</div><div>93.0788.88-530.93-708.96</div><div>88.8888.22-708.96-737.29</div><div>88.2282.26-737.29-990.45</div><div>82.2680.00-990.45-1086.47</div></div></div> <div><div>Schnittgrößen (Bemessungswerte)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.19</div><div>-0.2</div><div>0.0</div><div>0.0</div></div><div><div>105.75</div><div>-9.8</div><div>-1.1</div><div>-0.2</div></div><div><div>105.50</div><div>-14.2</div><div>0.1</div><div>-0.4</div></div><div><div>105.32</div><div>-15.8</div><div>4.8</div><div>0.0</div></div><div><div>105.16</div><div>-17.9</div><div>7.8</div><div>1.0</div></div><div><div>105.00</div><div>-19.6</div><div>11.5</div><div>2.5</div></div><div><div>104.74</div><div>-22.5</div><div>16.5</div><div>6.2</div></div><div><div>104.41</div><div>-26.3</div><div>26.9</div><div>13.4</div></div><div><div>104.41</div><div>-26.3</div><div>-80.5</div><div>13.4</div></div><div><div>104.16</div><div>-29.5</div><div>-73.1</div><div>-6.1</div></div><div><div>103.75</div><div>-34.8</div><div>-62.3</div><div>-33.5</div></div><div><div>103.74</div><div>-34.9</div><div>-62.0</div><div>-34.2</div></div><div><div>103.74</div><div>-35.0</div><div>-62.0</div><div>-34.3</div></div><div><div>103.60</div><div>-36.8</div><div>-62.1</div><div>-42.9</div></div><div><div>103.47</div><div>-38.6</div><div>-63.6</div><div>-50.7</div></div><div><div>103.46</div><div>-38.8</div><div>-64.0</div><div>-51.7</div></div><div><div>103.35</div><div>-40.3</div><div>-67.3</div><div>-58.8</div></div><div><div>103.31</div><div>-40.9</div><div>-68.6</div><div>-61.4</div></div><div><div>103.23</div><div>-42.1</div><div>-72.5</div><div>-67.5</div></div><div><div>103.21</div><div>-42.4</div><div>-73.5</div><div>-68.8</div></div><div><div>103.15</div><div>-43.2</div><div>-76.5</div><div>-72.8</div></div><div><div>103.10</div><div>-44.0</div><div>-79.7</div><div>-76.9</div></div><div><div>102.98</div><div>-45.8</div><div>-88.1</div><div>-87.3</div></div><div><div>102.95</div><div>-46.3</div><div>-90.3</div><div>-89.9</div></div><div><div>102.94</div><div>-46.5</div><div>-91.4</div><div>-91.2</div></div><div><div>102.85</div><div>-47.7</div><div>-97.9</div><div>-98.9</div></div><div><div>102.65</div><div>-50.9</div><div>-116.9</div><div>-120.5</div></div></div> <tr><td colspan="2">Schnitt: Anlage M2 Schnitt 4L</td><td>Seite Anlage M2/4</td></tr> <tr><td colspan="2">Kapitel: 1 LF 1 (BS-T)</td><td>Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/4	Kapitel: 1 LF 1 (BS-T)		Archiv Nr.:	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
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Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 99.16 35.6 57.1 -104.8 98.17 35.5 50.0 -50.4 97.92 34.7 45.6 -38.6 97.16 31.1 26.6 -10.6 96.40 25.5 0.0 0.0 </div> <div> Schnittgrößen (g+w,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 106.20 0.0 0.0 0.0 106.19 -0.2 0.0 0.0 105.75 -8.5 -0.9 -0.1 105.50 -12.4 0.1 -0.4 105.32 -13.8 4.0 0.0 105.16 -15.6 6.5 0.8 105.00 -17.2 9.6 2.1 104.74 -19.8 13.8 5.2 104.41 -23.2 22.7 11.2 104.41 -23.2 -66.8 11.2 104.16 -25.9 -60.5 -5.0 103.75 -30.6 -51.3 -27.6 103.74 -30.7 -51.1 -28.2 103.74 -30.8 -51.1 -28.3 103.60 -32.4 -51.2 -35.4 103.47 -33.9 -52.6 -41.8 103.46 -34.2 -52.9 -42.7 103.35 -35.5 -55.8 -48.5 103.31 -36.0 -57.0 -50.7 103.23 -37.1 -60.4 -55.7 103.21 -37.3 -61.3 -56.8 103.15 -38.0 -63.9 -60.1 103.10 -38.7 -66.7 -63.6 102.98 -40.3 -74.0 -72.3 102.95 -40.7 -75.9 -74.5 102.94 -40.9 -76.8 -75.5 102.85 -42.0 -82.6 -82.0 102.65 -44.7 -99.1 -100.3 102.62 -45.2 -102.0 -103.5 102.58 -45.6 -104.4 -107.5 102.54 -43.5 -100.4 -111.5 102.35 -33.7 -82.8 -128.6 102.17 -24.7 -67.7 -142.7 102.07 -20.5 -60.8 -148.8 102.06 -19.8 -59.8 -149.7 101.76 -7.9 -40.4 -164.5 101.60 -2.4 -30.8 -170.1 101.18 10.1 -5.7 -177.7 101.13 11.4 -2.7 -177.9 101.09 12.6 0.0 -178.0 100.85 17.8 12.7 -176.5 100.68 21.1 21.3 -173.6 100.66 21.5 22.2 -173.2 100.16 28.9 41.9 -156.6 99.60 33.7 53.7 -129.6 99.16 35.6 57.1 -104.8 98.17 35.5 50.0 -50.4 97.92 34.7 45.6 -38.6 97.16 31.1 26.6 -10.6 96.40 25.5 0.0 0.0 </div> </div>		
<div> Schnittgrößen (q,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 106.20 0.0 0.0 0.0 106.19 0.0 0.0 0.0 105.75 0.0 0.0 0.0 105.50 0.0 0.0 0.0 105.32 0.0 0.0 0.0 105.16 0.0 0.0 0.0 105.00 0.0 0.0 0.0 104.74 0.0 0.0 0.0 </div>		
Schnitt:	Anlage M2 Schnitt 4L	Seite Anlage M2/6
Kapitel:	1 LF 1 (BS-T)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
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<table><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.46</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.31</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.21</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.15</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.94</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.85</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.62</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.58</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.54</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.35</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.17</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.07</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.76</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.60</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.18</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.13</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.85</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.68</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.66</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.60</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.17</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.92</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.20</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.14</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-8.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-8.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-7.9</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-7.7</td><td>2.47</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-7.6</td><td>2.47</td><td>18.85</td><td>23.77</td></tr><tr><td>105.50</td><td>-7.6</td><td>3.11</td><td>23.78</td><td>23.77</td></tr><tr><td>105.45</td><td>-7.6</td><td>3.11</td><td>23.59</td><td>28.05</td></tr><tr><td>105.36</td><td>-7.5</td><td>4.91</td><td>36.61</td><td>36.61</td></tr><tr><td>105.32</td><td>-7.4</td><td>4.91</td><td>36.32</td><td>40.89</td></tr><tr><td>105.32</td><td>-7.4</td><td>3.35</td><td>24.79</td><td>24.78</td></tr><tr><td>105.27</td><td>-7.3</td><td>3.35</td><td>24.54</td><td>27.53</td></tr><tr><td>105.21</td><td>-7.2</td><td>4.18</td><td>30.29</td><td>30.29</td></tr><tr><td>105.16</td><td>-7.2</td><td>4.18</td><td>29.99</td><td>33.04</td></tr><tr><td>105.16</td><td>-7.2</td><td>4.60</td><td>33.04</td><td>33.04</td></tr><tr><td>105.11</td><td>-7.1</td><td>4.60</td><td>32.70</td><td>35.79</td></tr><tr><td>105.05</td><td>-7.0</td><td>5.00</td><td>35.15</td><td>38.54</td></tr><tr><td>105.00</td><td>-7.0</td><td>5.00</td><td>34.79</td><td>41.29</td></tr><tr><td>105.00</td><td>-7.0</td><td>5.00</td><td>34.79</td><td>41.29</td></tr><tr><td>104.95</td><td>-6.9</td><td>5.00</td><td>34.44</td><td>42.63</td></tr><tr><td>104.79</td><td>-6.7</td><td>5.00</td><td>33.38</td><td>46.65</td></tr></table>						104.41	0.0	0.0	0.0	104.16	0.0	0.0	0.0	103.75	0.0	0.0	0.0	103.74	0.0	0.0	0.0	103.74	0.0	0.0	0.0	103.60	0.0	0.0	0.0	103.47	0.0	0.0	0.0	103.46	0.0	0.0	0.0	103.35	0.0	0.0	0.0	103.31	0.0	0.0	0.0	103.23	0.0	0.0	0.0	103.21	0.0	0.0	0.0	103.15	0.0	0.0	0.0	103.10	0.0	0.0	0.0	102.98	0.0	0.0	0.0	102.95	0.0	0.0	0.0	102.94	0.0	0.0	0.0	102.85	0.0	0.0	0.0	102.65	0.0	0.0	0.0	102.62	0.0	0.0	0.0	102.58	0.0	0.0	0.0	102.54	0.0	0.0	0.0	102.35	0.0	0.0	0.0	102.17	0.0	0.0	0.0	102.07	0.0	0.0	0.0	102.06	0.0	0.0	0.0	101.76	0.0	0.0	0.0	101.60	0.0	0.0	0.0	101.18	0.0	0.0	0.0	101.13	0.0	0.0	0.0	101.09	0.0	0.0	0.0	100.85	0.0	0.0	0.0	100.68	0.0	0.0	0.0	100.66	0.0	0.0	0.0	100.16	0.0	0.0	0.0	99.60	0.0	0.0	0.0	99.16	0.0	0.0	0.0	98.17	0.0	0.0	0.0	97.92	0.0	0.0	0.0	97.16	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m²]	[kN/m²]	[kN/m²]	106.20	-8.6	-	-	-	106.19	-8.6	-	-	-	106.19	-8.6	-	-	-	106.14	-8.5	-	-	-	105.80	-8.0	-	-	-	105.75	-8.0	0.00	0.00	0.00	105.75	-8.0	0.00	0.00	0.00	105.70	-7.9	0.00	0.00	4.75	105.55	-7.7	2.47	19.02	19.02	105.50	-7.6	2.47	18.85	23.77	105.50	-7.6	3.11	23.78	23.77	105.45	-7.6	3.11	23.59	28.05	105.36	-7.5	4.91	36.61	36.61	105.32	-7.4	4.91	36.32	40.89	105.32	-7.4	3.35	24.79	24.78	105.27	-7.3	3.35	24.54	27.53	105.21	-7.2	4.18	30.29	30.29	105.16	-7.2	4.18	29.99	33.04	105.16	-7.2	4.60	33.04	33.04	105.11	-7.1	4.60	32.70	35.79	105.05	-7.0	5.00	35.15	38.54	105.00	-7.0	5.00	34.79	41.29	105.00	-7.0	5.00	34.79	41.29	104.95	-6.9	5.00	34.44	42.63	104.79	-6.7	5.00	33.38	46.65
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105.50	-7.6	3.11	23.78	23.77																																																																																																																																																																																																																																																																																																												
105.45	-7.6	3.11	23.59	28.05																																																																																																																																																																																																																																																																																																												
105.36	-7.5	4.91	36.61	36.61																																																																																																																																																																																																																																																																																																												
105.32	-7.4	4.91	36.32	40.89																																																																																																																																																																																																																																																																																																												
105.32	-7.4	3.35	24.79	24.78																																																																																																																																																																																																																																																																																																												
105.27	-7.3	3.35	24.54	27.53																																																																																																																																																																																																																																																																																																												
105.21	-7.2	4.18	30.29	30.29																																																																																																																																																																																																																																																																																																												
105.16	-7.2	4.18	29.99	33.04																																																																																																																																																																																																																																																																																																												
105.16	-7.2	4.60	33.04	33.04																																																																																																																																																																																																																																																																																																												
105.11	-7.1	4.60	32.70	35.79																																																																																																																																																																																																																																																																																																												
105.05	-7.0	5.00	35.15	38.54																																																																																																																																																																																																																																																																																																												
105.00	-7.0	5.00	34.79	41.29																																																																																																																																																																																																																																																																																																												
105.00	-7.0	5.00	34.79	41.29																																																																																																																																																																																																																																																																																																												
104.95	-6.9	5.00	34.44	42.63																																																																																																																																																																																																																																																																																																												
104.79	-6.7	5.00	33.38	46.65																																																																																																																																																																																																																																																																																																												
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																				
<table><tr><td>104.74</td><td>-6.6</td><td>5.00</td><td>33.03</td><td>47.99</td></tr><tr><td>104.74</td><td>-6.6</td><td>5.00</td><td>33.03</td><td>47.99</td></tr><tr><td>104.69</td><td>-6.5</td><td>5.00</td><td>32.71</td><td>49.21</td></tr><tr><td>104.46</td><td>-6.2</td><td>5.00</td><td>31.11</td><td>55.29</td></tr><tr><td>104.41</td><td>-6.2</td><td>5.00</td><td>30.79</td><td>56.50</td></tr><tr><td>104.41</td><td>-6.2</td><td>5.00</td><td>30.79</td><td>56.50</td></tr><tr><td>104.36</td><td>-6.1</td><td>5.00</td><td>30.44</td><td>57.81</td></tr><tr><td>104.21</td><td>-5.9</td><td>5.00</td><td>29.40</td><td>61.74</td></tr><tr><td>104.16</td><td>-5.8</td><td>5.00</td><td>29.06</td><td>63.05</td></tr><tr><td>104.16</td><td>-5.8</td><td>5.00</td><td>29.06</td><td>63.05</td></tr><tr><td>104.11</td><td>-5.7</td><td>5.00</td><td>28.71</td><td>64.36</td></tr><tr><td>103.80</td><td>-5.3</td><td>5.00</td><td>26.64</td><td>72.21</td></tr><tr><td>103.75</td><td>-5.3</td><td>5.00</td><td>26.30</td><td>73.52</td></tr><tr><td>103.75</td><td>-5.3</td><td>5.00</td><td>26.30</td><td>73.52</td></tr><tr><td>103.74</td><td>-5.2</td><td>5.00</td><td>26.23</td><td>73.78</td></tr><tr><td>103.74</td><td>-5.2</td><td>5.00</td><td>26.23</td><td>85.51</td></tr><tr><td>103.74</td><td>-5.2</td><td>5.00</td><td>26.22</td><td>85.57</td></tr><tr><td>103.74</td><td>-5.2</td><td>5.00</td><td>26.22</td><td>85.57</td></tr><tr><td>103.69</td><td>-5.2</td><td>5.00</td><td>25.91</td><td>86.76</td></tr><tr><td>103.65</td><td>-5.1</td><td>5.00</td><td>25.60</td><td>87.95</td></tr><tr><td>103.60</td><td>-5.1</td><td>5.00</td><td>25.29</td><td>89.14</td></tr><tr><td>103.60</td><td>-5.1</td><td>5.00</td><td>25.29</td><td>89.14</td></tr><tr><td>103.54</td><td>-5.0</td><td>5.00</td><td>24.87</td><td>90.74</td></tr><tr><td>103.54</td><td>-5.0</td><td>5.00</td><td>24.87</td><td>90.74</td></tr><tr><td>103.47</td><td>-4.9</td><td>5.00</td><td>24.45</td><td>92.34</td></tr><tr><td>103.47</td><td>-4.9</td><td>5.00</td><td>24.45</td><td>92.34</td></tr><tr><td>103.46</td><td>-4.9</td><td>5.00</td><td>24.34</td><td>92.77</td></tr><tr><td>103.46</td><td>-4.9</td><td>5.00</td><td>24.34</td><td>92.77</td></tr><tr><td>103.40</td><td>-4.8</td><td>5.00</td><td>23.99</td><td>94.16</td></tr><tr><td>103.40</td><td>-4.8</td><td>5.00</td><td>23.99</td><td>94.16</td></tr><tr><td>103.35</td><td>-4.7</td><td>5.00</td><td>23.63</td><td>95.55</td></tr><tr><td>103.35</td><td>-4.7</td><td>5.00</td><td>23.63</td><td>95.55</td></tr><tr><td>103.31</td><td>-4.7</td><td>5.00</td><td>23.38</td><td>96.53</td></tr><tr><td>103.31</td><td>-4.7</td><td>5.00</td><td>23.38</td><td>96.53</td></tr><tr><td>103.27</td><td>-4.6</td><td>5.00</td><td>23.09</td><td>97.64</td></tr><tr><td>103.27</td><td>-4.6</td><td>5.00</td><td>23.09</td><td>97.64</td></tr><tr><td>103.23</td><td>-4.6</td><td>5.00</td><td>22.81</td><td>98.75</td></tr><tr><td>103.23</td><td>-4.6</td><td>5.00</td><td>22.81</td><td>98.75</td></tr><tr><td>103.21</td><td>-4.5</td><td>5.00</td><td>22.69</td><td>99.24</td></tr><tr><td>103.21</td><td>-4.5</td><td>5.00</td><td>22.69</td><td>99.24</td></tr><tr><td>103.15</td><td>-4.5</td><td>5.00</td><td>22.34</td><td>100.60</td></tr><tr><td>103.15</td><td>-4.5</td><td>5.00</td><td>22.34</td><td>100.60</td></tr><tr><td>103.10</td><td>-4.4</td><td>5.00</td><td>22.00</td><td>101.96</td></tr><tr><td>103.10</td><td>-4.4</td><td>5.00</td><td>22.00</td><td>101.96</td></tr><tr><td>103.04</td><td>-4.3</td><td>5.00</td><td>21.59</td><td>103.56</td></tr><tr><td>103.04</td><td>-4.3</td><td>5.00</td><td>21.59</td><td>103.56</td></tr><tr><td>102.98</td><td>-4.2</td><td>5.00</td><td>21.19</td><td>105.16</td></tr><tr><td>102.98</td><td>-4.2</td><td>5.00</td><td>21.19</td><td>105.16</td></tr><tr><td>102.95</td><td>-4.2</td><td>5.00</td><td>21.01</td><td>105.90</td></tr><tr><td>102.95</td><td>-4.2</td><td>5.00</td><td>21.01</td><td>105.90</td></tr><tr><td>102.94</td><td>-4.2</td><td>5.00</td><td>20.92</td><td>106.26</td></tr><tr><td>102.94</td><td>-4.2</td><td>5.00</td><td>20.92</td><td>106.26</td></tr><tr><td>102.89</td><td>-4.1</td><td>5.00</td><td>20.66</td><td>107.31</td></tr><tr><td>102.89</td><td>-4.1</td><td>5.00</td><td>20.66</td><td>107.31</td></tr><tr><td>102.85</td><td>-4.1</td><td>5.00</td><td>20.40</td><td>108.37</td></tr><tr><td>102.85</td><td>-4.1</td><td>5.00</td><td>20.40</td><td>108.37</td></tr><tr><td>102.80</td><td>-4.0</td><td>5.00</td><td>20.08</td><td>109.67</td></tr><tr><td>102.70</td><td>-3.9</td><td>5.00</td><td>19.45</td><td>112.27</td></tr><tr><td>102.65</td><td>-3.8</td><td>5.00</td><td>19.13</td><td>113.57</td></tr><tr><td>102.65</td><td>-3.8</td><td>5.00</td><td>19.13</td><td>113.57</td></tr><tr><td>102.62</td><td>-3.8</td><td>5.00</td><td>18.94</td><td>114.39</td></tr><tr><td>102.62</td><td>-3.8</td><td>5.00</td><td>18.94</td><td>203.23</td></tr><tr><td>102.58</td><td>-3.7</td><td>5.00</td><td>18.70</td><td>205.91</td></tr><tr><td>102.58</td><td>-3.7</td><td>50.00</td><td>186.98</td><td>205.91</td></tr><tr><td>102.54</td><td>-3.7</td><td>50.00</td><td>184.61</td><td>208.58</td></tr><tr><td>102.54</td><td>-3.7</td><td>50.00</td><td>184.61</td><td>208.58</td></tr><tr><td>102.50</td><td>-3.6</td><td>50.00</td><td>181.75</td><td>211.83</td></tr><tr><td>102.40</td><td>-3.5</td><td>50.00</td><td>176.11</td><td>218.32</td></tr><tr><td>102.35</td><td>-3.5</td><td>50.00</td><td>173.32</td><td>221.57</td></tr><tr><td>102.35</td><td>-3.5</td><td>50.00</td><td>173.32</td><td>221.57</td></tr><tr><td>102.31</td><td>-3.4</td><td>50.00</td><td>170.56</td><td>224.81</td></tr></table>							104.74	-6.6	5.00	33.03	47.99	104.74	-6.6	5.00	33.03	47.99	104.69	-6.5	5.00	32.71	49.21	104.46	-6.2	5.00	31.11	55.29	104.41	-6.2	5.00	30.79	56.50	104.41	-6.2	5.00	30.79	56.50	104.36	-6.1	5.00	30.44	57.81	104.21	-5.9	5.00	29.40	61.74	104.16	-5.8	5.00	29.06	63.05	104.16	-5.8	5.00	29.06	63.05	104.11	-5.7	5.00	28.71	64.36	103.80	-5.3	5.00	26.64	72.21	103.75	-5.3	5.00	26.30	73.52	103.75	-5.3	5.00	26.30	73.52	103.74	-5.2	5.00	26.23	73.78	103.74	-5.2	5.00	26.23	85.51	103.74	-5.2	5.00	26.22	85.57	103.74	-5.2	5.00	26.22	85.57	103.69	-5.2	5.00	25.91	86.76	103.65	-5.1	5.00	25.60	87.95	103.60	-5.1	5.00	25.29	89.14	103.60	-5.1	5.00	25.29	89.14	103.54	-5.0	5.00	24.87	90.74	103.54	-5.0	5.00	24.87	90.74	103.47	-4.9	5.00	24.45	92.34	103.47	-4.9	5.00	24.45	92.34	103.46	-4.9	5.00	24.34	92.77	103.46	-4.9	5.00	24.34	92.77	103.40	-4.8	5.00	23.99	94.16	103.40	-4.8	5.00	23.99	94.16	103.35	-4.7	5.00	23.63	95.55	103.35	-4.7	5.00	23.63	95.55	103.31	-4.7	5.00	23.38	96.53	103.31	-4.7	5.00	23.38	96.53	103.27	-4.6	5.00	23.09	97.64	103.27	-4.6	5.00	23.09	97.64	103.23	-4.6	5.00	22.81	98.75	103.23	-4.6	5.00	22.81	98.75	103.21	-4.5	5.00	22.69	99.24	103.21	-4.5	5.00	22.69	99.24	103.15	-4.5	5.00	22.34	100.60	103.15	-4.5	5.00	22.34	100.60	103.10	-4.4	5.00	22.00	101.96	103.10	-4.4	5.00	22.00	101.96	103.04	-4.3	5.00	21.59	103.56	103.04	-4.3	5.00	21.59	103.56	102.98	-4.2	5.00	21.19	105.16	102.98	-4.2	5.00	21.19	105.16	102.95	-4.2	5.00	21.01	105.90	102.95	-4.2	5.00	21.01	105.90	102.94	-4.2	5.00	20.92	106.26	102.94	-4.2	5.00	20.92	106.26	102.89	-4.1	5.00	20.66	107.31	102.89	-4.1	5.00	20.66	107.31	102.85	-4.1	5.00	20.40	108.37	102.85	-4.1	5.00	20.40	108.37	102.80	-4.0	5.00	20.08	109.67	102.70	-3.9	5.00	19.45	112.27	102.65	-3.8	5.00	19.13	113.57	102.65	-3.8	5.00	19.13	113.57	102.62	-3.8	5.00	18.94	114.39	102.62	-3.8	5.00	18.94	203.23	102.58	-3.7	5.00	18.70	205.91	102.58	-3.7	50.00	186.98	205.91	102.54	-3.7	50.00	184.61	208.58	102.54	-3.7	50.00	184.61	208.58	102.50	-3.6	50.00	181.75	211.83	102.40	-3.5	50.00	176.11	218.32	102.35	-3.5	50.00	173.32	221.57	102.35	-3.5	50.00	173.32	221.57	102.31	-3.4	50.00	170.56	224.81
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103.23	-4.6	5.00	22.81	98.75																																																																																																																																																																																																																																																																																																																																																																					
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103.04	-4.3	5.00	21.59	103.56																																																																																																																																																																																																																																																																																																																																																																					
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102.94	-4.2	5.00	20.92	106.26																																																																																																																																																																																																																																																																																																																																																																					
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102.89	-4.1	5.00	20.66	107.31																																																																																																																																																																																																																																																																																																																																																																					
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102.85	-4.1	5.00	20.40	108.37																																																																																																																																																																																																																																																																																																																																																																					
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102.80	-4.0	5.00	20.08	109.67																																																																																																																																																																																																																																																																																																																																																																					
102.70	-3.9	5.00	19.45	112.27																																																																																																																																																																																																																																																																																																																																																																					
102.65	-3.8	5.00	19.13	113.57																																																																																																																																																																																																																																																																																																																																																																					
102.65	-3.8	5.00	19.13	113.57																																																																																																																																																																																																																																																																																																																																																																					
102.62	-3.8	5.00	18.94	114.39																																																																																																																																																																																																																																																																																																																																																																					
102.62	-3.8	5.00	18.94	203.23																																																																																																																																																																																																																																																																																																																																																																					
102.58	-3.7	5.00	18.70	205.91																																																																																																																																																																																																																																																																																																																																																																					
102.58	-3.7	50.00	186.98	205.91																																																																																																																																																																																																																																																																																																																																																																					
102.54	-3.7	50.00	184.61	208.58																																																																																																																																																																																																																																																																																																																																																																					
102.54	-3.7	50.00	184.61	208.58																																																																																																																																																																																																																																																																																																																																																																					
102.50	-3.6	50.00	181.75	211.83																																																																																																																																																																																																																																																																																																																																																																					
102.40	-3.5	50.00	176.11	218.32																																																																																																																																																																																																																																																																																																																																																																					
102.35	-3.5	50.00	173.32	221.57																																																																																																																																																																																																																																																																																																																																																																					
102.35	-3.5	50.00	173.32	221.57																																																																																																																																																																																																																																																																																																																																																																					
102.31	-3.4	50.00	170.56	224.81																																																																																																																																																																																																																																																																																																																																																																					
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																						
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																						
<table><tr><td>102.21</td><td>-3.3</td><td>50.00</td><td>165.10</td><td>231.31</td></tr><tr><td>102.17</td><td>-3.2</td><td>50.00</td><td>162.41</td><td>234.56</td></tr><tr><td>102.17</td><td>-3.2</td><td>50.00</td><td>162.41</td><td>234.56</td></tr><tr><td>102.12</td><td>-3.2</td><td>50.00</td><td>159.75</td><td>237.81</td></tr><tr><td>102.12</td><td>-3.2</td><td>50.00</td><td>159.75</td><td>237.81</td></tr><tr><td>102.07</td><td>-3.1</td><td>50.00</td><td>157.11</td><td>241.06</td></tr><tr><td>102.07</td><td>-3.1</td><td>50.00</td><td>157.11</td><td>241.06</td></tr><tr><td>102.06</td><td>-3.1</td><td>50.00</td><td>156.28</td><td>242.10</td></tr><tr><td>102.06</td><td>-3.1</td><td>50.00</td><td>156.28</td><td>242.10</td></tr><tr><td>102.01</td><td>-3.1</td><td>50.00</td><td>153.54</td><td>245.52</td></tr><tr><td>101.81</td><td>-2.9</td><td>50.00</td><td>142.93</td><td>259.20</td></tr><tr><td>101.76</td><td>-2.8</td><td>50.00</td><td>140.36</td><td>262.63</td></tr><tr><td>101.76</td><td>-2.8</td><td>50.00</td><td>140.36</td><td>262.63</td></tr><tr><td>101.71</td><td>-2.8</td><td>50.00</td><td>137.66</td><td>266.26</td></tr><tr><td>101.65</td><td>-2.7</td><td>50.00</td><td>135.00</td><td>269.90</td></tr><tr><td>101.60</td><td>-2.6</td><td>50.00</td><td>132.39</td><td>273.54</td></tr><tr><td>101.60</td><td>-2.6</td><td>50.00</td><td>132.39</td><td>273.54</td></tr><tr><td>101.55</td><td>-2.6</td><td>50.00</td><td>129.83</td><td>277.15</td></tr><tr><td>101.24</td><td>-2.3</td><td>50.00</td><td>115.34</td><td>298.80</td></tr><tr><td>101.18</td><td>-2.3</td><td>50.00</td><td>113.07</td><td>302.41</td></tr><tr><td>101.18</td><td>-2.3</td><td>50.00</td><td>113.07</td><td>302.41</td></tr><tr><td>101.13</td><td>-2.2</td><td>50.00</td><td>110.83</td><td>306.02</td></tr><tr><td>101.13</td><td>-2.2</td><td>50.00</td><td>110.83</td><td>306.02</td></tr><tr><td>101.09</td><td>-2.2</td><td>50.00</td><td>108.87</td><td>309.24</td></tr><tr><td>101.09</td><td>-2.2</td><td>50.00</td><td>108.87</td><td>309.24</td></tr><tr><td>101.04</td><td>-2.1</td><td>50.00</td><td>106.95</td><td>312.47</td></tr><tr><td>100.90</td><td>-2.0</td><td>50.00</td><td>101.36</td><td>322.15</td></tr><tr><td>100.85</td><td>-2.0</td><td>50.00</td><td>99.57</td><td>325.38</td></tr><tr><td>100.85</td><td>-2.0</td><td>50.00</td><td>99.57</td><td>325.38</td></tr><tr><td>100.79</td><td>-1.9</td><td>50.00</td><td>97.44</td><td>329.29</td></tr><tr><td>100.74</td><td>-1.9</td><td>50.00</td><td>95.36</td><td>333.19</td></tr><tr><td>100.68</td><td>-1.9</td><td>50.00</td><td>93.32</td><td>337.10</td></tr><tr><td>100.68</td><td>-1.9</td><td>50.00</td><td>93.32</td><td>337.10</td></tr><tr><td>100.66</td><td>-1.9</td><td>50.00</td><td>92.60</td><td>338.50</td></tr><tr><td>100.66</td><td>-1.9</td><td>50.00</td><td>92.60</td><td>338.50</td></tr><tr><td>100.61</td><td>-1.8</td><td>50.00</td><td>90.84</td><td>341.98</td></tr><tr><td>100.21</td><td>-1.6</td><td>50.00</td><td>78.06</td><td>369.90</td></tr><tr><td>100.16</td><td>-1.5</td><td>50.00</td><td>76.62</td><td>373.39</td></tr><tr><td>100.16</td><td>-1.5</td><td>50.00</td><td>76.62</td><td>373.39</td></tr><tr><td>100.11</td><td>-1.5</td><td>50.00</td><td>75.21</td><td>376.88</td></tr><tr><td>99.65</td><td>-1.3</td><td>50.00</td><td>64.01</td><td>408.28</td></tr><tr><td>99.60</td><td>-1.3</td><td>50.00</td><td>62.92</td><td>411.77</td></tr><tr><td>99.60</td><td>-1.3</td><td>50.00</td><td>62.92</td><td>411.77</td></tr><tr><td>99.55</td><td>-1.2</td><td>50.00</td><td>61.88</td><td>415.18</td></tr><tr><td>99.21</td><td>-1.1</td><td>50.00</td><td>55.28</td><td>439.07</td></tr><tr><td>99.16</td><td>-1.1</td><td>50.00</td><td>54.44</td><td>442.48</td></tr><tr><td>99.16</td><td>-1.1</td><td>50.00</td><td>54.44</td><td>442.48</td></tr><tr><td>99.11</td><td>-1.1</td><td>50.00</td><td>53.61</td><td>445.89</td></tr><tr><td>98.22</td><td>-0.8</td><td>50.00</td><td>41.79</td><td>507.31</td></tr><tr><td>98.17</td><td>-0.8</td><td>50.00</td><td>41.27</td><td>510.72</td></tr><tr><td>98.17</td><td>-0.8</td><td>50.00</td><td>41.27</td><td>510.72</td></tr><tr><td>98.12</td><td>-0.8</td><td>50.00</td><td>40.75</td><td>514.13</td></tr><tr><td>97.97</td><td>-0.8</td><td>50.00</td><td>39.27</td><td>524.37</td></tr><tr><td>97.92</td><td>-0.8</td><td>50.00</td><td>38.80</td><td>527.78</td></tr><tr><td>97.92</td><td>-0.8</td><td>50.00</td><td>38.80</td><td>527.78</td></tr><tr><td>97.87</td><td>-0.8</td><td>50.00</td><td>38.32</td><td>531.29</td></tr><tr><td>97.21</td><td>-0.7</td><td>50.00</td><td>32.63</td><td>576.84</td></tr><tr><td>97.16</td><td>-0.6</td><td>50.00</td><td>32.22</td><td>580.35</td></tr><tr><td>97.16</td><td>-0.6</td><td>50.00</td><td>32.22</td><td>580.35</td></tr><tr><td>97.11</td><td>-0.6</td><td>50.00</td><td>31.82</td><td>583.85</td></tr><tr><td>96.45</td><td>-0.5</td><td>50.00</td><td>26.64</td><td>629.41</td></tr><tr><td>96.40</td><td>-0.5</td><td>50.00</td><td>26.24</td><td>632.91</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.00893788 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 9.35 m Profillänge = 9.80 m</p>			102.21	-3.3	50.00	165.10	231.31	102.17	-3.2	50.00	162.41	234.56	102.17	-3.2	50.00	162.41	234.56	102.12	-3.2	50.00	159.75	237.81	102.12	-3.2	50.00	159.75	237.81	102.07	-3.1	50.00	157.11	241.06	102.07	-3.1	50.00	157.11	241.06	102.06	-3.1	50.00	156.28	242.10	102.06	-3.1	50.00	156.28	242.10	102.01	-3.1	50.00	153.54	245.52	101.81	-2.9	50.00	142.93	259.20	101.76	-2.8	50.00	140.36	262.63	101.76	-2.8	50.00	140.36	262.63	101.71	-2.8	50.00	137.66	266.26	101.65	-2.7	50.00	135.00	269.90	101.60	-2.6	50.00	132.39	273.54	101.60	-2.6	50.00	132.39	273.54	101.55	-2.6	50.00	129.83	277.15	101.24	-2.3	50.00	115.34	298.80	101.18	-2.3	50.00	113.07	302.41	101.18	-2.3	50.00	113.07	302.41	101.13	-2.2	50.00	110.83	306.02	101.13	-2.2	50.00	110.83	306.02	101.09	-2.2	50.00	108.87	309.24	101.09	-2.2	50.00	108.87	309.24	101.04	-2.1	50.00	106.95	312.47	100.90	-2.0	50.00	101.36	322.15	100.85	-2.0	50.00	99.57	325.38	100.85	-2.0	50.00	99.57	325.38	100.79	-1.9	50.00	97.44	329.29	100.74	-1.9	50.00	95.36	333.19	100.68	-1.9	50.00	93.32	337.10	100.68	-1.9	50.00	93.32	337.10	100.66	-1.9	50.00	92.60	338.50	100.66	-1.9	50.00	92.60	338.50	100.61	-1.8	50.00	90.84	341.98	100.21	-1.6	50.00	78.06	369.90	100.16	-1.5	50.00	76.62	373.39	100.16	-1.5	50.00	76.62	373.39	100.11	-1.5	50.00	75.21	376.88	99.65	-1.3	50.00	64.01	408.28	99.60	-1.3	50.00	62.92	411.77	99.60	-1.3	50.00	62.92	411.77	99.55	-1.2	50.00	61.88	415.18	99.21	-1.1	50.00	55.28	439.07	99.16	-1.1	50.00	54.44	442.48	99.16	-1.1	50.00	54.44	442.48	99.11	-1.1	50.00	53.61	445.89	98.22	-0.8	50.00	41.79	507.31	98.17	-0.8	50.00	41.27	510.72	98.17	-0.8	50.00	41.27	510.72	98.12	-0.8	50.00	40.75	514.13	97.97	-0.8	50.00	39.27	524.37	97.92	-0.8	50.00	38.80	527.78	97.92	-0.8	50.00	38.80	527.78	97.87	-0.8	50.00	38.32	531.29	97.21	-0.7	50.00	32.63	576.84	97.16	-0.6	50.00	32.22	580.35	97.16	-0.6	50.00	32.22	580.35	97.11	-0.6	50.00	31.82	583.85	96.45	-0.5	50.00	26.64	629.41	96.40	-0.5	50.00	26.24	632.91
102.21	-3.3	50.00	165.10	231.31																																																																																																																																																																																																																																																																																																																				
102.17	-3.2	50.00	162.41	234.56																																																																																																																																																																																																																																																																																																																				
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102.07	-3.1	50.00	157.11	241.06																																																																																																																																																																																																																																																																																																																				
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102.06	-3.1	50.00	156.28	242.10																																																																																																																																																																																																																																																																																																																				
102.06	-3.1	50.00	156.28	242.10																																																																																																																																																																																																																																																																																																																				
102.01	-3.1	50.00	153.54	245.52																																																																																																																																																																																																																																																																																																																				
101.81	-2.9	50.00	142.93	259.20																																																																																																																																																																																																																																																																																																																				
101.76	-2.8	50.00	140.36	262.63																																																																																																																																																																																																																																																																																																																				
101.76	-2.8	50.00	140.36	262.63																																																																																																																																																																																																																																																																																																																				
101.71	-2.8	50.00	137.66	266.26																																																																																																																																																																																																																																																																																																																				
101.65	-2.7	50.00	135.00	269.90																																																																																																																																																																																																																																																																																																																				
101.60	-2.6	50.00	132.39	273.54																																																																																																																																																																																																																																																																																																																				
101.60	-2.6	50.00	132.39	273.54																																																																																																																																																																																																																																																																																																																				
101.55	-2.6	50.00	129.83	277.15																																																																																																																																																																																																																																																																																																																				
101.24	-2.3	50.00	115.34	298.80																																																																																																																																																																																																																																																																																																																				
101.18	-2.3	50.00	113.07	302.41																																																																																																																																																																																																																																																																																																																				
101.18	-2.3	50.00	113.07	302.41																																																																																																																																																																																																																																																																																																																				
101.13	-2.2	50.00	110.83	306.02																																																																																																																																																																																																																																																																																																																				
101.13	-2.2	50.00	110.83	306.02																																																																																																																																																																																																																																																																																																																				
101.09	-2.2	50.00	108.87	309.24																																																																																																																																																																																																																																																																																																																				
101.09	-2.2	50.00	108.87	309.24																																																																																																																																																																																																																																																																																																																				
101.04	-2.1	50.00	106.95	312.47																																																																																																																																																																																																																																																																																																																				
100.90	-2.0	50.00	101.36	322.15																																																																																																																																																																																																																																																																																																																				
100.85	-2.0	50.00	99.57	325.38																																																																																																																																																																																																																																																																																																																				
100.85	-2.0	50.00	99.57	325.38																																																																																																																																																																																																																																																																																																																				
100.79	-1.9	50.00	97.44	329.29																																																																																																																																																																																																																																																																																																																				
100.74	-1.9	50.00	95.36	333.19																																																																																																																																																																																																																																																																																																																				
100.68	-1.9	50.00	93.32	337.10																																																																																																																																																																																																																																																																																																																				
100.68	-1.9	50.00	93.32	337.10																																																																																																																																																																																																																																																																																																																				
100.66	-1.9	50.00	92.60	338.50																																																																																																																																																																																																																																																																																																																				
100.66	-1.9	50.00	92.60	338.50																																																																																																																																																																																																																																																																																																																				
100.61	-1.8	50.00	90.84	341.98																																																																																																																																																																																																																																																																																																																				
100.21	-1.6	50.00	78.06	369.90																																																																																																																																																																																																																																																																																																																				
100.16	-1.5	50.00	76.62	373.39																																																																																																																																																																																																																																																																																																																				
100.16	-1.5	50.00	76.62	373.39																																																																																																																																																																																																																																																																																																																				
100.11	-1.5	50.00	75.21	376.88																																																																																																																																																																																																																																																																																																																				
99.65	-1.3	50.00	64.01	408.28																																																																																																																																																																																																																																																																																																																				
99.60	-1.3	50.00	62.92	411.77																																																																																																																																																																																																																																																																																																																				
99.60	-1.3	50.00	62.92	411.77																																																																																																																																																																																																																																																																																																																				
99.55	-1.2	50.00	61.88	415.18																																																																																																																																																																																																																																																																																																																				
99.21	-1.1	50.00	55.28	439.07																																																																																																																																																																																																																																																																																																																				
99.16	-1.1	50.00	54.44	442.48																																																																																																																																																																																																																																																																																																																				
99.16	-1.1	50.00	54.44	442.48																																																																																																																																																																																																																																																																																																																				
99.11	-1.1	50.00	53.61	445.89																																																																																																																																																																																																																																																																																																																				
98.22	-0.8	50.00	41.79	507.31																																																																																																																																																																																																																																																																																																																				
98.17	-0.8	50.00	41.27	510.72																																																																																																																																																																																																																																																																																																																				
98.17	-0.8	50.00	41.27	510.72																																																																																																																																																																																																																																																																																																																				
98.12	-0.8	50.00	40.75	514.13																																																																																																																																																																																																																																																																																																																				
97.97	-0.8	50.00	39.27	524.37																																																																																																																																																																																																																																																																																																																				
97.92	-0.8	50.00	38.80	527.78																																																																																																																																																																																																																																																																																																																				
97.92	-0.8	50.00	38.80	527.78																																																																																																																																																																																																																																																																																																																				
97.87	-0.8	50.00	38.32	531.29																																																																																																																																																																																																																																																																																																																				
97.21	-0.7	50.00	32.63	576.84																																																																																																																																																																																																																																																																																																																				
97.16	-0.6	50.00	32.22	580.35																																																																																																																																																																																																																																																																																																																				
97.16	-0.6	50.00	32.22	580.35																																																																																																																																																																																																																																																																																																																				
97.11	-0.6	50.00	31.82	583.85																																																																																																																																																																																																																																																																																																																				
96.45	-0.5	50.00	26.64	629.41																																																																																																																																																																																																																																																																																																																				
96.40	-0.5	50.00	26.24	632.91																																																																																																																																																																																																																																																																																																																				
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/9																																																																																																																																																																																																																																																																																																																						
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																						
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																						



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																				
Auftraggeber: Stadtverwaltung Leipzig																						
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																				
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 185.44 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 77.19 \text{ kN/m}$ ($E_{ah,k} = 421.52 \text{ kN/m}$) $B_{v,k} = 210.94$ Summe $V_{,k} = 51.69 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 97.28 bis 93.76 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr><tr><td>105.75</td><td>105.32</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.32</td><td>103.74</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>103.74</td><td>102.62</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.62</td><td>96.40</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 96.40 m = 1.000 m²/m/m $\implies R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 342.10 / 1.40 = 244.36 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1109.41 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 222.53 - 0.00 + 88.77 + 0.00 = 311.30 \text{ kN/m}$ $\implies \mu = V_{,d} / R_{,d} = 311.30 / 1109.41 = 0.28$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.75	105.32	0.00	S1: Auffüllungen	105.32	103.74	0.00	S2: Auelehm (über GS)	103.74	102.62	0.00	S2: Auelehm (unter GS)	102.62	96.40	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung																			
105.75	105.32	0.00	S1: Auffüllungen																			
105.32	103.74	0.00	S2: Auelehm (über GS)																			
103.74	102.62	0.00	S2: Auelehm (unter GS)																			
102.62	96.40	55.00	s3: Flussskies, -sand																			
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/10																				
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025																				
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																				

statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 2 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 12_BS 4_LF2.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.20 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.30 2.14 103.74 102.85 100.66 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.70 0.00 0.34 103.74 103.74 103.74 103.46 103.31 nein 2 18.90 5.48 10.08 103.74 100.85 95.43 93.07 88.22 nein 3 0.65 10.08 13.88 103.74 97.92 88.22 88.88 82.26 nein 4 2.50 2.14 5.48 103.75 103.75 100.68 99.60 95.45 nein 5 74.17 0.34 0.64 103.74 103.60 103.31 103.21 102.94 nein 6 81.33 0.64 0.94 103.74 103.47 102.94 102.95 102.54 nein 7 88.47 0.94 1.24 103.74 103.35 102.54 102.65 102.07 nein 8 95.63 1.24 1.54 103.74 103.23 102.07 102.35 101.60 nein 9 102.78 1.54 1.84 103.74 103.10 101.60 102.06 101.13 nein 10 109.92 1.84 2.14 103.74 102.98 101.13 101.76 100.66 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 14.00 106.19 104.74 Ständig</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/11
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	104.41	0.00	0.00	-89.50	0.00	0.00	0.00

Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.38 m / eaho/eahu = 1.5)

Art des Fußlagers:
Profillänge von 9.80 m fest und Fuß gebettet

Bettungsmodule
von bis ks(oben) ks(unten)
[mNHN] [mNHN] [MN/m³] [MN/m³]
102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 472.291 / 804.096 = 0.587$
Bettungslager $B_{h,d} = 472.291 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 804.096 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	N _{w,k}	EA	EI	N _{d'}
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-169.10	-146.52	-146.52	-82.92	6.900E+4	2.100E+7	-186.81 Steife

Zusätzlich für Steifen
Steife 1
Vertikallast [kN/m²/m]: 0.00
max M_d [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-8.0	0.0	-172.64	0.00	0.00
-0.90	105.00	-8.3	0.0	-172.64	0.00	0.00
-0.90	105.00	-8.3	0.0	-172.64	0.00	0.00
-0.80	105.00	-8.5	0.0	-172.64	0.00	0.00
-0.70	105.00	-8.8	0.0	-172.64	0.00	0.00
-0.60	105.00	-9.0	0.0	-172.64	0.00	0.00
-0.50	105.00	-9.3	0.0	-172.64	0.00	0.00
-0.40	105.00	-9.5	0.0	-172.64	0.00	0.00
-0.30	105.00	-9.8	0.0	-172.64	0.00	0.00
-0.20	105.00	-10.0	0.0	-172.64	0.00	0.00
-0.10	105.00	-10.3	0.0	-172.64	0.00	0.00
0.00	105.00	-10.5	0.0	-172.64	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 4\Linkes Ufer\11_BS 4_LF1.vrb
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0070

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.32	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.62	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.

Schnitt:	Anlage M2 Schnitt 4L	Seite Anlage M2/12
Kapitel:	2 LF 2 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

statisch geprüft
 für
 Standsicherheit
 Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																							
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																																																																									
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																																							
<div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td></td></tr><tr><td>1</td><td>105.32</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.200</td><td>106.190</td><td>28.311</td><td>28.311</td><td>0.00</td><td>0.00</td></tr><tr><td>106.190</td><td>105.500</td><td>28.311</td><td>28.311</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.320</td><td>28.311</td><td>28.311</td><td>0.00</td><td>1.80</td></tr><tr><td>105.320</td><td>105.150</td><td>28.311</td><td>28.311</td><td>1.80</td><td>3.50</td></tr><tr><td>105.150</td><td>105.000</td><td>28.311</td><td>28.311</td><td>3.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.740</td><td>28.311</td><td>28.311</td><td>5.00</td><td>5.00</td></tr><tr><td>104.740</td><td>104.410</td><td>28.311</td><td>28.311</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.380</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>104.380</td><td>104.200</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>104.200</td><td>103.750</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.750</td><td>103.740</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.740</td><td>103.599</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.599</td><td>103.475</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.475</td><td>103.458</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.458</td><td>103.351</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.351</td><td>103.312</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.312</td><td>103.226</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.226</td><td>103.208</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.208</td><td>103.200</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.200</td><td>103.102</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>103.102</td><td>102.978</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.978</td><td>102.949</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.949</td><td>102.935</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.935</td><td>102.854</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.854</td><td>102.652</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.652</td><td>102.620</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.620</td><td>102.550</td><td>18.874</td><td>18.874</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.543</td><td>76.518</td><td>76.554</td><td>5.00</td><td>5.00</td></tr><tr><td>102.543</td><td>102.355</td><td>76.554</td><td>83.559</td><td>5.00</td><td>5.00</td></tr><tr><td>102.355</td><td>102.166</td><td>83.559</td><td>82.042</td><td>5.00</td><td>5.00</td></tr><tr><td>102.166</td><td>102.072</td><td>82.042</td><td>81.284</td><td>5.00</td><td>5.00</td></tr><tr><td>102.072</td><td>102.057</td><td>81.284</td><td>81.536</td><td>5.00</td><td>5.00</td></tr><tr><td>102.057</td><td>101.810</td><td>81.536</td><td>75.894</td><td>5.00</td><td>5.00</td></tr><tr><td>101.810</td><td>101.760</td><td>75.894</td><td>74.766</td><td>5.00</td><td>5.00</td></tr><tr><td>101.760</td><td>101.602</td><td>74.766</td><td>65.529</td><td>5.00</td><td>5.00</td></tr><tr><td>101.602</td><td>101.184</td><td>65.529</td><td>49.821</td><td>5.00</td><td>5.00</td></tr><tr><td>101.184</td><td>101.132</td><td>49.821</td><td>47.857</td><td>5.00</td><td>5.00</td></tr><tr><td>101.132</td><td>100.851</td><td>47.857</td><td>42.472</td><td>5.00</td><td>5.00</td></tr><tr><td>100.851</td><td>100.682</td><td>42.472</td><td>39.425</td><td>5.00</td><td>5.00</td></tr><tr><td>100.682</td><td>100.662</td><td>39.425</td><td>39.055</td><td>5.00</td><td>5.00</td></tr><tr><td>100.662</td><td>100.156</td><td>39.055</td><td>41.755</td><td>5.00</td><td>5.00</td></tr><tr><td>100.156</td><td>100.055</td><td>41.755</td><td>42.295</td><td>5.00</td><td>5.00</td></tr><tr><td>100.055</td><td>99.601</td><td>42.295</td><td>44.725</td><td>5.00</td><td>5.00</td></tr><tr><td>99.601</td><td>99.156</td><td>44.725</td><td>47.006</td><td>5.00</td><td>5.00</td></tr><tr><td>99.156</td><td>98.168</td><td>47.006</td><td>52.074</td><td>5.00</td><td>5.00</td></tr><tr><td>98.168</td><td>97.921</td><td>52.074</td><td>53.341</td><td>5.00</td><td>5.00</td></tr><tr><td>97.921</td><td>97.160</td><td>53.341</td><td>57.263</td><td>5.00</td><td>5.00</td></tr><tr><td>97.160</td><td>96.399</td><td>57.263</td><td>61.185</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>95.446</td><td>61.185</td><td>66.093</td><td>5.00</td><td>5.00</td></tr><tr><td>95.446</td><td>95.426</td><td>66.093</td><td>66.202</td><td>5.00</td><td>5.00</td></tr><tr><td>95.426</td><td>93.071</td><td>66.202</td><td>75.919</td><td>5.00</td><td>5.00</td></tr><tr><td>93.071</td><td>88.882</td><td>75.919</td><td>87.384</td><td>5.00</td><td>5.00</td></tr><tr><td>88.882</td><td>88.216</td><td>87.384</td><td>89.185</td><td>5.00</td><td>5.00</td></tr><tr><td>88.216</td><td>82.259</td><td>89.185</td><td>113.407</td><td>5.00</td><td>5.00</td></tr><tr><td>82.259</td><td>80.000</td><td>113.407</td><td>122.673</td><td>5.00</td><td>5.00</td></tr></table>						Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]		1	105.32	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.62	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.200	106.190	28.311	28.311	0.00	0.00	106.190	105.500	28.311	28.311	0.00	0.00	105.500	105.320	28.311	28.311	0.00	1.80	105.320	105.150	28.311	28.311	1.80	3.50	105.150	105.000	28.311	28.311	3.50	5.00	105.000	104.740	28.311	28.311	5.00	5.00	104.740	104.410	28.311	28.311	5.00	5.00	104.410	104.380	18.874	18.874	5.00	5.00	104.380	104.200	18.874	18.874	5.00	5.00	104.200	103.750	18.874	18.874	5.00	5.00	103.750	103.740	18.874	18.874	5.00	5.00	103.740	103.599	18.874	18.874	5.00	5.00	103.599	103.475	18.874	18.874	5.00	5.00	103.475	103.458	18.874	18.874	5.00	5.00	103.458	103.351	18.874	18.874	5.00	5.00	103.351	103.312	18.874	18.874	5.00	5.00	103.312	103.226	18.874	18.874	5.00	5.00	103.226	103.208	18.874	18.874	5.00	5.00	103.208	103.200	18.874	18.874	5.00	5.00	103.200	103.102	18.874	18.874	5.00	5.00	103.102	102.978	18.874	18.874	5.00	5.00	102.978	102.949	18.874	18.874	5.00	5.00	102.949	102.935	18.874	18.874	5.00	5.00	102.935	102.854	18.874	18.874	5.00	5.00	102.854	102.652	18.874	18.874	5.00	5.00	102.652	102.620	18.874	18.874	5.00	5.00	102.620	102.550	18.874	18.874	5.00	5.00	102.550	102.543	76.518	76.554	5.00	5.00	102.543	102.355	76.554	83.559	5.00	5.00	102.355	102.166	83.559	82.042	5.00	5.00	102.166	102.072	82.042	81.284	5.00	5.00	102.072	102.057	81.284	81.536	5.00	5.00	102.057	101.810	81.536	75.894	5.00	5.00	101.810	101.760	75.894	74.766	5.00	5.00	101.760	101.602	74.766	65.529	5.00	5.00	101.602	101.184	65.529	49.821	5.00	5.00	101.184	101.132	49.821	47.857	5.00	5.00	101.132	100.851	47.857	42.472	5.00	5.00	100.851	100.682	42.472	39.425	5.00	5.00	100.682	100.662	39.425	39.055	5.00	5.00	100.662	100.156	39.055	41.755	5.00	5.00	100.156	100.055	41.755	42.295	5.00	5.00	100.055	99.601	42.295	44.725	5.00	5.00	99.601	99.156	44.725	47.006	5.00	5.00	99.156	98.168	47.006	52.074	5.00	5.00	98.168	97.921	52.074	53.341	5.00	5.00	97.921	97.160	53.341	57.263	5.00	5.00	97.160	96.399	57.263	61.185	5.00	5.00	96.399	95.446	61.185	66.093	5.00	5.00	95.446	95.426	66.093	66.202	5.00	5.00	95.426	93.071	66.202	75.919	5.00	5.00	93.071	88.882	75.919	87.384	5.00	5.00	88.882	88.216	87.384	89.185	5.00	5.00	88.216	82.259	89.185	113.407	5.00	5.00	82.259	80.000	113.407	122.673	5.00	5.00
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																																																																																				
[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																																																																					
1	105.32	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																																																																																				
2	103.74	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																																																																																				
3	102.62	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																																																																																																				
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																																																																																				
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																																																																																																						
106.200	106.190	28.311	28.311	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																						
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104.740	104.410	28.311	28.311	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
104.410	104.380	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
104.380	104.200	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
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103.750	103.740	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
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103.599	103.475	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.475	103.458	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.458	103.351	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.351	103.312	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.312	103.226	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.226	103.208	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.208	103.200	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.200	103.102	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
103.102	102.978	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.978	102.949	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.949	102.935	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.935	102.854	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.854	102.652	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.652	102.620	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.620	102.550	18.874	18.874	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.550	102.543	76.518	76.554	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.543	102.355	76.554	83.559	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.355	102.166	83.559	82.042	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.166	102.072	82.042	81.284	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.072	102.057	81.284	81.536	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
102.057	101.810	81.536	75.894	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
101.810	101.760	75.894	74.766	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
101.760	101.602	74.766	65.529	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
101.602	101.184	65.529	49.821	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
101.184	101.132	49.821	47.857	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
101.132	100.851	47.857	42.472	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
100.851	100.682	42.472	39.425	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
100.682	100.662	39.425	39.055	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
100.662	100.156	39.055	41.755	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
100.156	100.055	41.755	42.295	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
100.055	99.601	42.295	44.725	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
99.601	99.156	44.725	47.006	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
99.156	98.168	47.006	52.074	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
98.168	97.921	52.074	53.341	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
97.921	97.160	53.341	57.263	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
97.160	96.399	57.263	61.185	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
96.399	95.446	61.185	66.093	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
95.446	95.426	66.093	66.202	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
95.426	93.071	66.202	75.919	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
93.071	88.882	75.919	87.384	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
88.882	88.216	87.384	89.185	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
88.216	82.259	89.185	113.407	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
82.259	80.000	113.407	122.673	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																																						
Schnitt: Anlage M2 Schnitt 4L				Seite Anlage M2/13																																																																																																																																																																																																																																																																																																																																																																																																							
Kapitel: 2 LF 2 (BS-T)				Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																							
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statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.20 102.55</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.62 102.55 0.00 0.00 102.55 102.54 0.00 -0.32 102.54 102.35 -0.32 -8.31 102.35 102.17 -8.31 -16.30 102.17 102.07 -16.30 -20.30 102.07 102.06 -20.30 -20.94 102.06 101.81 -20.94 -31.47 101.81 101.76 -31.47 -33.57 101.76 101.60 -33.57 -40.29 101.60 101.18 -40.29 -58.05 101.18 101.13 -58.05 -60.28 101.13 100.85 -60.28 -72.19 100.85 100.68 -72.19 -79.40 100.68 100.66 -79.40 -80.26 100.66 100.16 -80.26 -101.73 100.16 100.06 -101.73 -106.03 100.06 99.60 -106.03 -125.35 99.60 99.16 -125.35 -144.25 99.16 98.17 -144.25 -186.25 98.17 97.92 -186.25 -196.75 97.92 97.16 -196.75 -229.09 97.16 96.40 -229.09 -261.44 96.40 95.45 -261.44 -301.92 95.45 95.43 -301.92 -302.78 95.43 93.07 -302.78 -402.89 93.07 88.88 -402.89 -580.92 88.88 88.22 -580.92 -609.24 88.22 82.26 -609.24 -862.41 82.26 80.00 -862.41 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.20 0.0 0.0 0.0 106.19 -0.2 -0.3 0.0 105.50 -15.2 -22.8 -8.0 105.32 -19.2 -28.8 -12.6 105.15 -22.8 -34.9 -18.0 105.00 -26.1 -40.6 -23.7 -172.6 105.00 -26.1 132.1 -23.7 104.74 -31.8 122.0 9.3 104.41 -39.0 109.3 47.5 104.41 -39.0 1.9 47.5 104.38 -39.6 1.1 47.6 104.20 -43.5 -3.9 47.3 103.75 -53.3 -16.4 42.8 103.74 -53.5 -16.6 42.6 103.60 -57.4 -20.5 40.0 103.47 -60.8 -24.0 37.2 103.46 -61.3 -24.4 36.8 103.35 -64.3 -27.4 34.0 103.31 -65.3 -28.5 32.9 103.23 -67.7 -30.9 30.4 103.21 -68.2 -31.4 29.8</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



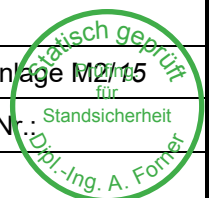
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																															
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																																																																																																	
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																																																															
<table><tr><td>103.20</td><td>-68.4</td><td>-31.6</td><td>29.6</td><td></td><td></td></tr><tr><td>103.10</td><td>-71.1</td><td>-34.3</td><td>26.3</td><td></td><td></td></tr><tr><td>102.98</td><td>-74.6</td><td>-37.8</td><td>21.9</td><td></td><td></td></tr><tr><td>102.95</td><td>-75.3</td><td>-38.5</td><td>20.8</td><td></td><td></td></tr><tr><td>102.94</td><td>-75.7</td><td>-38.9</td><td>20.2</td><td></td><td></td></tr><tr><td>102.85</td><td>-78.0</td><td>-41.2</td><td>17.0</td><td></td><td></td></tr><tr><td>102.65</td><td>-83.5</td><td>-46.8</td><td>8.1</td><td></td><td></td></tr><tr><td>102.62</td><td>-84.4</td><td>-47.7</td><td>6.6</td><td></td><td></td></tr><tr><td>102.55</td><td>-86.6</td><td>-49.6</td><td>3.2</td><td></td><td></td></tr><tr><td>102.54</td><td>-87.0</td><td>-50.3</td><td>2.8</td><td></td><td></td></tr><tr><td>102.35</td><td>-90.6</td><td>-67.6</td><td>-8.3</td><td></td><td></td></tr><tr><td>102.17</td><td>-93.1</td><td>-82.6</td><td>-22.5</td><td></td><td></td></tr><tr><td>102.07</td><td>-94.0</td><td>-89.0</td><td>-30.6</td><td></td><td></td></tr><tr><td>102.06</td><td>-94.1</td><td>-89.9</td><td>-31.9</td><td></td><td></td></tr><tr><td>101.81</td><td>-94.8</td><td>-102.2</td><td>-55.8</td><td></td><td></td></tr><tr><td>101.76</td><td>-94.7</td><td>-103.9</td><td>-60.9</td><td></td><td></td></tr><tr><td>101.60</td><td>-94.0</td><td>-107.0</td><td>-77.6</td><td></td><td></td></tr><tr><td>101.18</td><td>-88.2</td><td>-99.8</td><td>-121.6</td><td></td><td></td></tr><tr><td>101.13</td><td>-87.1</td><td>-97.4</td><td>-126.7</td><td></td><td></td></tr><tr><td>100.85</td><td>-79.7</td><td>-79.5</td><td>-151.7</td><td></td><td></td></tr><tr><td>100.68</td><td>-74.0</td><td>-64.9</td><td>-164.0</td><td></td><td></td></tr><tr><td>100.66</td><td>-73.3</td><td>-62.9</td><td>-165.3</td><td></td><td></td></tr><tr><td>100.16</td><td>-52.4</td><td>-8.9</td><td>-183.5</td><td></td><td></td></tr><tr><td>100.06</td><td>-48.5</td><td>0.7</td><td>-183.9</td><td></td><td></td></tr><tr><td>99.60</td><td>-34.3</td><td>36.2</td><td>-175.0</td><td></td><td></td></tr><tr><td>99.16</td><td>-24.5</td><td>59.1</td><td>-153.4</td><td></td><td></td></tr><tr><td>98.17</td><td>-15.4</td><td>74.4</td><td>-83.7</td><td></td><td></td></tr><tr><td>97.92</td><td>-15.4</td><td>71.4</td><td>-65.6</td><td></td><td></td></tr><tr><td>97.16</td><td>-20.6</td><td>46.8</td><td>-19.2</td><td></td><td></td></tr><tr><td>96.40</td><td>-33.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <div><div>Schnittgrößen ([g+q+w],k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.19</td><td>-0.2</td><td>-0.3</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-13.2</td><td>-19.8</td><td>-6.9</td><td></td><td></td></tr><tr><td>105.32</td><td>-16.7</td><td>-25.1</td><td>-11.0</td><td></td><td></td></tr><tr><td>105.15</td><td>-19.9</td><td>-30.3</td><td>-15.7</td><td></td><td></td></tr><tr><td>105.00</td><td>-22.7</td><td>-35.2</td><td>-20.6</td><td>-146.5</td><td></td></tr><tr><td>105.00</td><td>-22.7</td><td>111.3</td><td>-20.6</td><td></td><td></td></tr><tr><td>104.74</td><td>-27.6</td><td>102.6</td><td>7.2</td><td></td><td></td></tr><tr><td>104.41</td><td>-33.9</td><td>91.6</td><td>39.3</td><td></td><td></td></tr><tr><td>104.41</td><td>-33.9</td><td>2.1</td><td>39.3</td><td></td><td></td></tr><tr><td>104.38</td><td>-34.4</td><td>1.4</td><td>39.3</td><td></td><td></td></tr><tr><td>104.20</td><td>-37.8</td><td>-2.9</td><td>39.2</td><td></td><td></td></tr><tr><td>103.75</td><td>-46.4</td><td>-13.6</td><td>35.5</td><td></td><td></td></tr><tr><td>103.74</td><td>-46.6</td><td>-13.9</td><td>35.4</td><td></td><td></td></tr><tr><td>103.60</td><td>-49.9</td><td>-17.2</td><td>33.2</td><td></td><td></td></tr><tr><td>103.47</td><td>-52.9</td><td>-20.2</td><td>30.8</td><td></td><td></td></tr><tr><td>103.46</td><td>-53.3</td><td>-20.6</td><td>30.5</td><td></td><td></td></tr><tr><td>103.35</td><td>-55.9</td><td>-23.1</td><td>28.1</td><td></td><td></td></tr><tr><td>103.31</td><td>-56.8</td><td>-24.1</td><td>27.2</td><td></td><td></td></tr><tr><td>103.23</td><td>-58.9</td><td>-26.1</td><td>25.1</td><td></td><td></td></tr><tr><td>103.21</td><td>-59.3</td><td>-26.6</td><td>24.6</td><td></td><td></td></tr><tr><td>103.20</td><td>-59.5</td><td>-26.7</td><td>24.4</td><td></td><td></td></tr><tr><td>103.10</td><td>-61.8</td><td>-29.1</td><td>21.7</td><td></td><td></td></tr><tr><td>102.98</td><td>-64.8</td><td>-32.0</td><td>17.9</td><td></td><td></td></tr><tr><td>102.95</td><td>-65.5</td><td>-32.7</td><td>16.9</td><td></td><td></td></tr><tr><td>102.94</td><td>-65.9</td><td>-33.1</td><td>16.5</td><td></td><td></td></tr><tr><td>102.85</td><td>-67.8</td><td>-35.0</td><td>13.7</td><td></td><td></td></tr><tr><td>102.65</td><td>-72.6</td><td>-39.8</td><td>6.1</td><td></td><td></td></tr><tr><td>102.62</td><td>-73.4</td><td>-40.6</td><td>4.9</td><td></td><td></td></tr><tr><td>102.55</td><td>-75.3</td><td>-42.3</td><td>2.0</td><td></td><td></td></tr><tr><td>102.54</td><td>-75.6</td><td>-42.9</td><td>1.6</td><td></td><td></td></tr><tr><td>102.35</td><td>-78.8</td><td>-57.9</td><td>-7.8</td><td></td><td></td></tr><tr><td>102.17</td><td>-81.0</td><td>-70.9</td><td>-20.0</td><td></td><td></td></tr><tr><td>102.07</td><td>-81.7</td><td>-76.5</td><td>-26.9</td><td></td><td></td></tr><tr><td>102.06</td><td>-81.8</td><td>-77.3</td><td>-28.1</td><td></td><td></td></tr><tr><td>101.81</td><td>-82.5</td><td>-88.0</td><td>-48.7</td><td></td><td></td></tr><tr><td>101.76</td><td>-82.4</td><td>-89.4</td><td>-53.1</td><td></td><td></td></tr></table></div>						103.20	-68.4	-31.6	29.6			103.10	-71.1	-34.3	26.3			102.98	-74.6	-37.8	21.9			102.95	-75.3	-38.5	20.8			102.94	-75.7	-38.9	20.2			102.85	-78.0	-41.2	17.0			102.65	-83.5	-46.8	8.1			102.62	-84.4	-47.7	6.6			102.55	-86.6	-49.6	3.2			102.54	-87.0	-50.3	2.8			102.35	-90.6	-67.6	-8.3			102.17	-93.1	-82.6	-22.5			102.07	-94.0	-89.0	-30.6			102.06	-94.1	-89.9	-31.9			101.81	-94.8	-102.2	-55.8			101.76	-94.7	-103.9	-60.9			101.60	-94.0	-107.0	-77.6			101.18	-88.2	-99.8	-121.6			101.13	-87.1	-97.4	-126.7			100.85	-79.7	-79.5	-151.7			100.68	-74.0	-64.9	-164.0			100.66	-73.3	-62.9	-165.3			100.16	-52.4	-8.9	-183.5			100.06	-48.5	0.7	-183.9			99.60	-34.3	36.2	-175.0			99.16	-24.5	59.1	-153.4			98.17	-15.4	74.4	-83.7			97.92	-15.4	71.4	-65.6			97.16	-20.6	46.8	-19.2			96.40	-33.2	0.0	0.0			Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.20	0.0	0.0	0.0			106.19	-0.2	-0.3	0.0			105.50	-13.2	-19.8	-6.9			105.32	-16.7	-25.1	-11.0			105.15	-19.9	-30.3	-15.7			105.00	-22.7	-35.2	-20.6	-146.5		105.00	-22.7	111.3	-20.6			104.74	-27.6	102.6	7.2			104.41	-33.9	91.6	39.3			104.41	-33.9	2.1	39.3			104.38	-34.4	1.4	39.3			104.20	-37.8	-2.9	39.2			103.75	-46.4	-13.6	35.5			103.74	-46.6	-13.9	35.4			103.60	-49.9	-17.2	33.2			103.47	-52.9	-20.2	30.8			103.46	-53.3	-20.6	30.5			103.35	-55.9	-23.1	28.1			103.31	-56.8	-24.1	27.2			103.23	-58.9	-26.1	25.1			103.21	-59.3	-26.6	24.6			103.20	-59.5	-26.7	24.4			103.10	-61.8	-29.1	21.7			102.98	-64.8	-32.0	17.9			102.95	-65.5	-32.7	16.9			102.94	-65.9	-33.1	16.5			102.85	-67.8	-35.0	13.7			102.65	-72.6	-39.8	6.1			102.62	-73.4	-40.6	4.9			102.55	-75.3	-42.3	2.0			102.54	-75.6	-42.9	1.6			102.35	-78.8	-57.9	-7.8			102.17	-81.0	-70.9	-20.0			102.07	-81.7	-76.5	-26.9			102.06	-81.8	-77.3	-28.1			101.81	-82.5	-88.0	-48.7			101.76	-82.4	-89.4	-53.1		
103.20	-68.4	-31.6	29.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.10	-71.1	-34.3	26.3																																																																																																																																																																																																																																																																																																																																																																																																																																
102.98	-74.6	-37.8	21.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.95	-75.3	-38.5	20.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.94	-75.7	-38.9	20.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.85	-78.0	-41.2	17.0																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-83.5	-46.8	8.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-84.4	-47.7	6.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-86.6	-49.6	3.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.54	-87.0	-50.3	2.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.35	-90.6	-67.6	-8.3																																																																																																																																																																																																																																																																																																																																																																																																																																
102.17	-93.1	-82.6	-22.5																																																																																																																																																																																																																																																																																																																																																																																																																																
102.07	-94.0	-89.0	-30.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.06	-94.1	-89.9	-31.9																																																																																																																																																																																																																																																																																																																																																																																																																																
101.81	-94.8	-102.2	-55.8																																																																																																																																																																																																																																																																																																																																																																																																																																
101.76	-94.7	-103.9	-60.9																																																																																																																																																																																																																																																																																																																																																																																																																																
101.60	-94.0	-107.0	-77.6																																																																																																																																																																																																																																																																																																																																																																																																																																
101.18	-88.2	-99.8	-121.6																																																																																																																																																																																																																																																																																																																																																																																																																																
101.13	-87.1	-97.4	-126.7																																																																																																																																																																																																																																																																																																																																																																																																																																
100.85	-79.7	-79.5	-151.7																																																																																																																																																																																																																																																																																																																																																																																																																																
100.68	-74.0	-64.9	-164.0																																																																																																																																																																																																																																																																																																																																																																																																																																
100.66	-73.3	-62.9	-165.3																																																																																																																																																																																																																																																																																																																																																																																																																																
100.16	-52.4	-8.9	-183.5																																																																																																																																																																																																																																																																																																																																																																																																																																
100.06	-48.5	0.7	-183.9																																																																																																																																																																																																																																																																																																																																																																																																																																
99.60	-34.3	36.2	-175.0																																																																																																																																																																																																																																																																																																																																																																																																																																
99.16	-24.5	59.1	-153.4																																																																																																																																																																																																																																																																																																																																																																																																																																
98.17	-15.4	74.4	-83.7																																																																																																																																																																																																																																																																																																																																																																																																																																
97.92	-15.4	71.4	-65.6																																																																																																																																																																																																																																																																																																																																																																																																																																
97.16	-20.6	46.8	-19.2																																																																																																																																																																																																																																																																																																																																																																																																																																
96.40	-33.2	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
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[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																																																																																																																															
106.20	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
106.19	-0.2	-0.3	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
105.50	-13.2	-19.8	-6.9																																																																																																																																																																																																																																																																																																																																																																																																																																
105.32	-16.7	-25.1	-11.0																																																																																																																																																																																																																																																																																																																																																																																																																																
105.15	-19.9	-30.3	-15.7																																																																																																																																																																																																																																																																																																																																																																																																																																
105.00	-22.7	-35.2	-20.6	-146.5																																																																																																																																																																																																																																																																																																																																																																																																																															
105.00	-22.7	111.3	-20.6																																																																																																																																																																																																																																																																																																																																																																																																																																
104.74	-27.6	102.6	7.2																																																																																																																																																																																																																																																																																																																																																																																																																																
104.41	-33.9	91.6	39.3																																																																																																																																																																																																																																																																																																																																																																																																																																
104.41	-33.9	2.1	39.3																																																																																																																																																																																																																																																																																																																																																																																																																																
104.38	-34.4	1.4	39.3																																																																																																																																																																																																																																																																																																																																																																																																																																
104.20	-37.8	-2.9	39.2																																																																																																																																																																																																																																																																																																																																																																																																																																
103.75	-46.4	-13.6	35.5																																																																																																																																																																																																																																																																																																																																																																																																																																
103.74	-46.6	-13.9	35.4																																																																																																																																																																																																																																																																																																																																																																																																																																
103.60	-49.9	-17.2	33.2																																																																																																																																																																																																																																																																																																																																																																																																																																
103.47	-52.9	-20.2	30.8																																																																																																																																																																																																																																																																																																																																																																																																																																
103.46	-53.3	-20.6	30.5																																																																																																																																																																																																																																																																																																																																																																																																																																
103.35	-55.9	-23.1	28.1																																																																																																																																																																																																																																																																																																																																																																																																																																
103.31	-56.8	-24.1	27.2																																																																																																																																																																																																																																																																																																																																																																																																																																
103.23	-58.9	-26.1	25.1																																																																																																																																																																																																																																																																																																																																																																																																																																
103.21	-59.3	-26.6	24.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.20	-59.5	-26.7	24.4																																																																																																																																																																																																																																																																																																																																																																																																																																
103.10	-61.8	-29.1	21.7																																																																																																																																																																																																																																																																																																																																																																																																																																
102.98	-64.8	-32.0	17.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.95	-65.5	-32.7	16.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.94	-65.9	-33.1	16.5																																																																																																																																																																																																																																																																																																																																																																																																																																
102.85	-67.8	-35.0	13.7																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-72.6	-39.8	6.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-73.4	-40.6	4.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-75.3	-42.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																
102.54	-75.6	-42.9	1.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.35	-78.8	-57.9	-7.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.17	-81.0	-70.9	-20.0																																																																																																																																																																																																																																																																																																																																																																																																																																
102.07	-81.7	-76.5	-26.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.06	-81.8	-77.3	-28.1																																																																																																																																																																																																																																																																																																																																																																																																																																
101.81	-82.5	-88.0	-48.7																																																																																																																																																																																																																																																																																																																																																																																																																																
101.76	-82.4	-89.4	-53.1																																																																																																																																																																																																																																																																																																																																																																																																																																
Schnitt: Anlage M2 Schnitt 4L				Seite Anlage M2/15																																																																																																																																																																																																																																																																																																																																																																																																																															
Kapitel: 2 LF 2 (BS-T)				Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>101.60 -81.8 -92.2 -67.4</div><div>101.18 -76.8 -86.0 -105.3</div><div>101.13 -75.9 -83.9 -109.7</div><div>100.85 -69.5 -68.5 -131.3</div><div>100.68 -64.6 -55.9 -141.9</div><div>100.66 -63.9 -54.2 -143.0</div><div>100.16 -45.8 -7.6 -158.6</div><div>100.06 -42.5 0.7 -159.0</div><div>99.60 -30.2 31.4 -151.3</div><div>99.16 -21.8 51.1 -132.6</div><div>98.17 -13.8 64.3 -72.3</div><div>97.92 -13.9 61.7 -56.7</div><div>97.16 -18.5 40.4 -16.6</div><div>96.40 -29.5 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.19</div><div>-0.2</div><div>-0.3</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-13.2</div><div>-19.8</div><div>-6.9</div><div></div></div><div><div>105.32</div><div>-16.7</div><div>-25.1</div><div>-11.0</div><div></div></div><div><div>105.15</div><div>-19.9</div><div>-30.3</div><div>-15.7</div><div></div></div><div><div>105.00</div><div>-22.7</div><div>-35.2</div><div>-20.6</div><div>-146.5</div></div><div><div>105.00</div><div>-22.7</div><div>111.3</div><div>-20.6</div><div></div></div><div><div>104.74</div><div>-27.6</div><div>102.6</div><div>7.2</div><div></div></div><div><div>104.41</div><div>-33.9</div><div>91.6</div><div>39.3</div><div></div></div><div><div>104.41</div><div>-33.9</div><div>2.1</div><div>39.3</div><div></div></div><div><div>104.38</div><div>-34.4</div><div>1.4</div><div>39.3</div><div></div></div><div><div>104.20</div><div>-37.8</div><div>-2.9</div><div>39.2</div><div></div></div><div><div>103.75</div><div>-46.4</div><div>-13.6</div><div>35.5</div><div></div></div><div><div>103.74</div><div>-46.6</div><div>-13.9</div><div>35.4</div><div></div></div><div><div>103.60</div><div>-49.9</div><div>-17.2</div><div>33.2</div><div></div></div><div><div>103.47</div><div>-52.9</div><div>-20.2</div><div>30.8</div><div></div></div><div><div>103.46</div><div>-53.3</div><div>-20.6</div><div>30.5</div><div></div></div><div><div>103.35</div><div>-55.9</div><div>-23.1</div><div>28.1</div><div></div></div><div><div>103.31</div><div>-56.8</div><div>-24.1</div><div>27.2</div><div></div></div><div><div>103.23</div><div>-58.9</div><div>-26.1</div><div>25.1</div><div></div></div><div><div>103.21</div><div>-59.3</div><div>-26.6</div><div>24.6</div><div></div></div><div><div>103.20</div><div>-59.5</div><div>-26.7</div><div>24.4</div><div></div></div><div><div>103.10</div><div>-61.8</div><div>-29.1</div><div>21.7</div><div></div></div><div><div>102.98</div><div>-64.8</div><div>-32.0</div><div>17.9</div><div></div></div><div><div>102.95</div><div>-65.5</div><div>-32.7</div><div>16.9</div><div></div></div><div><div>102.94</div><div>-65.9</div><div>-33.1</div><div>16.5</div><div></div></div><div><div>102.85</div><div>-67.8</div><div>-35.0</div><div>13.7</div><div></div></div><div><div>102.65</div><div>-72.6</div><div>-39.8</div><div>6.1</div><div></div></div><div><div>102.62</div><div>-73.4</div><div>-40.6</div><div>4.9</div><div></div></div><div><div>102.55</div><div>-75.3</div><div>-42.3</div><div>2.0</div><div></div></div><div><div>102.54</div><div>-75.6</div><div>-42.9</div><div>1.6</div><div></div></div><div><div>102.35</div><div>-78.8</div><div>-57.9</div><div>-7.8</div><div></div></div><div><div>102.17</div><div>-81.0</div><div>-70.9</div><div>-20.0</div><div></div></div><div><div>102.07</div><div>-81.7</div><div>-76.5</div><div>-26.9</div><div></div></div><div><div>102.06</div><div>-81.8</div><div>-77.3</div><div>-28.1</div><div></div></div><div><div>101.81</div><div>-82.5</div><div>-88.0</div><div>-48.7</div><div></div></div><div><div>101.76</div><div>-82.4</div><div>-89.4</div><div>-53.1</div><div></div></div><div><div>101.60</div><div>-81.8</div><div>-92.2</div><div>-67.4</div><div></div></div><div><div>101.18</div><div>-76.8</div><div>-86.0</div><div>-105.3</div><div></div></div><div><div>101.13</div><div>-75.9</div><div>-83.9</div><div>-109.7</div><div></div></div><div><div>100.85</div><div>-69.5</div><div>-68.5</div><div>-131.3</div><div></div></div><div><div>100.68</div><div>-64.6</div><div>-55.9</div><div>-141.9</div><div></div></div><div><div>100.66</div><div>-63.9</div><div>-54.2</div><div>-143.0</div><div></div></div><div><div>100.16</div><div>-45.8</div><div>-7.6</div><div>-158.6</div><div></div></div><div><div>100.06</div><div>-42.5</div><div>0.7</div><div>-159.0</div><div></div></div><div><div>99.60</div><div>-30.2</div><div>31.4</div><div>-151.3</div><div></div></div><div><div>99.16</div><div>-21.8</div><div>51.1</div><div>-132.6</div><div></div></div><div><div>98.17</div><div>-13.8</div><div>64.3</div><div>-72.3</div><div></div></div><div><div>97.92</div><div>-13.9</div><div>61.7</div><div>-56.7</div><div></div></div><div><div>97.16</div><div>-18.5</div><div>40.4</div><div>-16.6</div><div></div></div><div><div>96.40</div><div>-29.5</div><div>0.0</div><div>0.0</div><div></div></div></div></div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/16
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																																																																																					
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<div>Schnittgrößen (q,k)</div> 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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th><th></th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th></th></tr></thead><tbody><tr><td>106.20</td><td>-10.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.19</td><td>-10.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.19</td><td>-10.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.14</td><td>-10.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.55</td><td>-9.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-9.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-9.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.45</td><td>-9.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.36</td><td>-9.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.32</td><td>-9.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.32</td><td>-9.5</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.26</td><td>-9.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.20</td><td>-9.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.15</td><td>-9.3</td><td>-</td><td>-</td><td>-</td><td></td></tr></tbody></table>						Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]		[kN/m]	[kN·m/m]	[kN/m]	106.20	0.0	0.0	0.0			106.19	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.32	0.0	0.0	0.0			105.15	0.0	0.0	0.0			105.00	0.0	0.0	0.0	-70.9		104.74	0.0	0.0	0.0			104.41	0.0	0.0	0.0			104.38	0.0	0.0	0.0			104.20	0.0	0.0	0.0			103.75	0.0	0.0	0.0			103.74	0.0	0.0	0.0			103.60	0.0	0.0	0.0			103.47	0.0	0.0	0.0			103.46	0.0	0.0	0.0			103.35	0.0	0.0	0.0			103.31	0.0	0.0	0.0			103.23	0.0	0.0	0.0			103.21	0.0	0.0	0.0			103.20	0.0	0.0	0.0			103.10	0.0	0.0	0.0			102.98	0.0	0.0	0.0			102.95	0.0	0.0	0.0			102.94	0.0	0.0	0.0			102.85	0.0	0.0	0.0			102.65	0.0	0.0	0.0			102.62	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.54	0.0	0.0	0.0			102.35	0.0	0.0	0.0			102.17	0.0	0.0	0.0			102.07	0.0	0.0	0.0			102.06	0.0	0.0	0.0			101.81	0.0	0.0	0.0			101.76	0.0	0.0	0.0			101.60	0.0	0.0	0.0			101.18	0.0	0.0	0.0			101.13	0.0	0.0	0.0			100.85	0.0	0.0	0.0			100.68	0.0	0.0	0.0			100.66	0.0	0.0	0.0			100.16	0.0	0.0	0.0			100.06	0.0	0.0	0.0			99.60	0.0	0.0	0.0			99.16	0.0	0.0	0.0			98.17	0.0	0.0	0.0			97.92	0.0	0.0	0.0			97.16	0.0	0.0	0.0			96.40	0.0	0.0	0.0			Tiefe	w	ks	sig,Bh,k	eph,k		[m]	[mm]	[kN/m²]	[kN/m²]	[kN/m²]		106.20	-10.7	-	-	-		106.19	-10.7	-	-	-		106.19	-10.7	-	-	-		106.14	-10.6	-	-	-		105.55	-9.8	-	-	-		105.50	-9.7	-	-	-		105.50	-9.7	-	-	-		105.45	-9.7	-	-	-		105.36	-9.6	-	-	-		105.32	-9.5	-	-	-		105.32	-9.5	-	-	-		105.26	-9.4	-	-	-		105.20	-9.3	-	-	-		105.15	-9.3	-	-	-	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div>105.15</div> <div>-9.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.10</div> <div>-9.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.05</div> <div>-9.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-9.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-9.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.95</div> <div>-9.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.79</div> <div>-8.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.74</div> <div>-8.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.74</div> <div>-8.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.70</div> <div>-8.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.46</div> <div>-8.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.41</div> <div>-8.3</div> <div>-</div> 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Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/18
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																				
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																				
<table><tr><td>102.55</td><td>-5.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.54</td><td>-5.7</td><td>0.00</td><td>0.00</td><td>0.51</td></tr><tr><td>102.54</td><td>-5.7</td><td>0.09</td><td>0.51</td><td>0.51</td></tr><tr><td>102.50</td><td>-5.7</td><td>0.09</td><td>0.51</td><td>3.76</td></tr><tr><td>102.40</td><td>-5.5</td><td>1.85</td><td>10.25</td><td>10.25</td></tr><tr><td>102.35</td><td>-5.5</td><td>1.85</td><td>10.13</td><td>13.50</td></tr><tr><td>102.35</td><td>-5.5</td><td>2.47</td><td>13.50</td><td>13.50</td></tr><tr><td>102.31</td><td>-5.4</td><td>2.47</td><td>13.33</td><td>16.75</td></tr><tr><td>102.21</td><td>-5.3</td><td>4.41</td><td>23.24</td><td>23.24</td></tr><tr><td>102.17</td><td>-5.2</td><td>4.41</td><td>22.95</td><td>26.49</td></tr><tr><td>102.17</td><td>-5.2</td><td>5.09</td><td>26.49</td><td>26.49</td></tr><tr><td>102.12</td><td>-5.1</td><td>5.09</td><td>26.16</td><td>29.74</td></tr><tr><td>102.12</td><td>-5.1</td><td>5.78</td><td>29.74</td><td>29.74</td></tr><tr><td>102.07</td><td>-5.1</td><td>5.78</td><td>29.36</td><td>32.99</td></tr><tr><td>102.07</td><td>-5.1</td><td>6.50</td><td>32.99</td><td>32.99</td></tr><tr><td>102.06</td><td>-5.1</td><td>6.50</td><td>32.86</td><td>34.03</td></tr><tr><td>102.06</td><td>-5.1</td><td>6.73</td><td>34.03</td><td>34.03</td></tr><tr><td>102.01</td><td>-5.0</td><td>6.73</td><td>33.56</td><td>37.45</td></tr><tr><td>101.86</td><td>-4.8</td><td>9.98</td><td>47.72</td><td>47.71</td></tr><tr><td>101.81</td><td>-4.7</td><td>9.98</td><td>47.03</td><td>51.14</td></tr><tr><td>101.81</td><td>-4.7</td><td>10.85</td><td>51.14</td><td>51.14</td></tr><tr><td>101.76</td><td>-4.6</td><td>10.85</td><td>50.39</td><td>54.56</td></tr><tr><td>101.76</td><td>-4.6</td><td>11.75</td><td>54.56</td><td>54.56</td></tr><tr><td>101.71</td><td>-4.6</td><td>11.75</td><td>53.71</td><td>58.19</td></tr><tr><td>101.65</td><td>-4.5</td><td>13.75</td><td>61.83</td><td>61.83</td></tr><tr><td>101.60</td><td>-4.4</td><td>13.75</td><td>60.85</td><td>65.47</td></tr><tr><td>101.60</td><td>-4.4</td><td>14.79</td><td>65.47</td><td>65.47</td></tr><tr><td>101.55</td><td>-4.4</td><td>14.79</td><td>64.42</td><td>69.08</td></tr><tr><td>101.24</td><td>-3.9</td><td>23.05</td><td>90.74</td><td>90.73</td></tr><tr><td>101.18</td><td>-3.9</td><td>23.05</td><td>89.16</td><td>94.34</td></tr><tr><td>101.18</td><td>-3.9</td><td>24.39</td><td>94.34</td><td>94.34</td></tr><tr><td>101.13</td><td>-3.8</td><td>24.39</td><td>92.69</td><td>97.95</td></tr><tr><td>101.13</td><td>-3.8</td><td>25.77</td><td>97.95</td><td>97.95</td></tr><tr><td>101.09</td><td>-3.7</td><td>25.77</td><td>96.40</td><td>101.18</td></tr><tr><td>100.90</td><td>-3.5</td><td>32.55</td><td>114.09</td><td>114.09</td></tr><tr><td>100.85</td><td>-3.4</td><td>32.55</td><td>112.21</td><td>117.31</td></tr><tr><td>100.85</td><td>-3.4</td><td>34.04</td><td>117.32</td><td>117.31</td></tr><tr><td>100.79</td><td>-3.4</td><td>34.04</td><td>114.96</td><td>121.22</td></tr><tr><td>100.74</td><td>-3.3</td><td>37.82</td><td>125.13</td><td>125.12</td></tr><tr><td>100.68</td><td>-3.2</td><td>37.82</td><td>122.56</td><td>129.03</td></tr><tr><td>100.68</td><td>-3.2</td><td>39.82</td><td>129.04</td><td>129.03</td></tr><tr><td>100.66</td><td>-3.2</td><td>39.82</td><td>128.08</td><td>130.43</td></tr><tr><td>100.66</td><td>-3.2</td><td>40.55</td><td>130.43</td><td>130.43</td></tr><tr><td>100.61</td><td>-3.2</td><td>40.55</td><td>128.01</td><td>133.92</td></tr><tr><td>100.21</td><td>-2.7</td><td>50.00</td><td>135.09</td><td>161.83</td></tr><tr><td>100.16</td><td>-2.6</td><td>50.00</td><td>132.40</td><td>165.32</td></tr><tr><td>100.16</td><td>-2.6</td><td>50.00</td><td>132.40</td><td>165.32</td></tr><tr><td>100.11</td><td>-2.6</td><td>50.00</td><td>129.74</td><td>168.81</td></tr><tr><td>100.11</td><td>-2.6</td><td>50.00</td><td>129.74</td><td>168.81</td></tr><tr><td>100.06</td><td>-2.5</td><td>50.00</td><td>127.12</td><td>172.30</td></tr><tr><td>100.06</td><td>-2.5</td><td>50.00</td><td>127.12</td><td>172.30</td></tr><tr><td>100.00</td><td>-2.5</td><td>50.00</td><td>124.53</td><td>175.79</td></tr><tr><td>99.65</td><td>-2.1</td><td>50.00</td><td>107.37</td><td>200.21</td></tr><tr><td>99.60</td><td>-2.1</td><td>50.00</td><td>105.06</td><td>203.70</td></tr><tr><td>99.60</td><td>-2.1</td><td>50.00</td><td>105.06</td><td>203.70</td></tr><tr><td>99.55</td><td>-2.1</td><td>50.00</td><td>102.82</td><td>207.11</td></tr><tr><td>99.21</td><td>-1.8</td><td>50.00</td><td>88.03</td><td>231.00</td></tr><tr><td>99.16</td><td>-1.7</td><td>50.00</td><td>86.03</td><td>234.41</td></tr><tr><td>99.16</td><td>-1.7</td><td>50.00</td><td>86.03</td><td>234.41</td></tr><tr><td>99.11</td><td>-1.7</td><td>50.00</td><td>84.06</td><td>237.82</td></tr><tr><td>98.22</td><td>-1.1</td><td>50.00</td><td>52.63</td><td>299.24</td></tr><tr><td>98.17</td><td>-1.0</td><td>50.00</td><td>51.07</td><td>302.65</td></tr><tr><td>98.17</td><td>-1.0</td><td>50.00</td><td>51.07</td><td>302.65</td></tr><tr><td>98.12</td><td>-1.0</td><td>50.00</td><td>49.52</td><td>306.06</td></tr><tr><td>97.97</td><td>-0.9</td><td>50.00</td><td>44.97</td><td>316.30</td></tr><tr><td>97.92</td><td>-0.9</td><td>50.00</td><td>43.47</td><td>319.71</td></tr><tr><td>97.92</td><td>-0.9</td><td>50.00</td><td>43.47</td><td>319.71</td></tr><tr><td>97.87</td><td>-0.8</td><td>50.00</td><td>41.95</td><td>323.22</td></tr><tr><td>97.21</td><td>-0.5</td><td>50.00</td><td>23.00</td><td>368.77</td></tr><tr><td>97.16</td><td>-0.4</td><td>50.00</td><td>21.59</td><td>372.28</td></tr></table>							102.55	-5.7	0.00	0.00	0.00	102.55	-5.7	0.00	0.00	0.00	102.54	-5.7	0.00	0.00	0.51	102.54	-5.7	0.09	0.51	0.51	102.50	-5.7	0.09	0.51	3.76	102.40	-5.5	1.85	10.25	10.25	102.35	-5.5	1.85	10.13	13.50	102.35	-5.5	2.47	13.50	13.50	102.31	-5.4	2.47	13.33	16.75	102.21	-5.3	4.41	23.24	23.24	102.17	-5.2	4.41	22.95	26.49	102.17	-5.2	5.09	26.49	26.49	102.12	-5.1	5.09	26.16	29.74	102.12	-5.1	5.78	29.74	29.74	102.07	-5.1	5.78	29.36	32.99	102.07	-5.1	6.50	32.99	32.99	102.06	-5.1	6.50	32.86	34.03	102.06	-5.1	6.73	34.03	34.03	102.01	-5.0	6.73	33.56	37.45	101.86	-4.8	9.98	47.72	47.71	101.81	-4.7	9.98	47.03	51.14	101.81	-4.7	10.85	51.14	51.14	101.76	-4.6	10.85	50.39	54.56	101.76	-4.6	11.75	54.56	54.56	101.71	-4.6	11.75	53.71	58.19	101.65	-4.5	13.75	61.83	61.83	101.60	-4.4	13.75	60.85	65.47	101.60	-4.4	14.79	65.47	65.47	101.55	-4.4	14.79	64.42	69.08	101.24	-3.9	23.05	90.74	90.73	101.18	-3.9	23.05	89.16	94.34	101.18	-3.9	24.39	94.34	94.34	101.13	-3.8	24.39	92.69	97.95	101.13	-3.8	25.77	97.95	97.95	101.09	-3.7	25.77	96.40	101.18	100.90	-3.5	32.55	114.09	114.09	100.85	-3.4	32.55	112.21	117.31	100.85	-3.4	34.04	117.32	117.31	100.79	-3.4	34.04	114.96	121.22	100.74	-3.3	37.82	125.13	125.12	100.68	-3.2	37.82	122.56	129.03	100.68	-3.2	39.82	129.04	129.03	100.66	-3.2	39.82	128.08	130.43	100.66	-3.2	40.55	130.43	130.43	100.61	-3.2	40.55	128.01	133.92	100.21	-2.7	50.00	135.09	161.83	100.16	-2.6	50.00	132.40	165.32	100.16	-2.6	50.00	132.40	165.32	100.11	-2.6	50.00	129.74	168.81	100.11	-2.6	50.00	129.74	168.81	100.06	-2.5	50.00	127.12	172.30	100.06	-2.5	50.00	127.12	172.30	100.00	-2.5	50.00	124.53	175.79	99.65	-2.1	50.00	107.37	200.21	99.60	-2.1	50.00	105.06	203.70	99.60	-2.1	50.00	105.06	203.70	99.55	-2.1	50.00	102.82	207.11	99.21	-1.8	50.00	88.03	231.00	99.16	-1.7	50.00	86.03	234.41	99.16	-1.7	50.00	86.03	234.41	99.11	-1.7	50.00	84.06	237.82	98.22	-1.1	50.00	52.63	299.24	98.17	-1.0	50.00	51.07	302.65	98.17	-1.0	50.00	51.07	302.65	98.12	-1.0	50.00	49.52	306.06	97.97	-0.9	50.00	44.97	316.30	97.92	-0.9	50.00	43.47	319.71	97.92	-0.9	50.00	43.47	319.71	97.87	-0.8	50.00	41.95	323.22	97.21	-0.5	50.00	23.00	368.77	97.16	-0.4	50.00	21.59	372.28
102.55	-5.7	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																					
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102.54	-5.7	0.00	0.00	0.51																																																																																																																																																																																																																																																																																																																																																																					
102.54	-5.7	0.09	0.51	0.51																																																																																																																																																																																																																																																																																																																																																																					
102.50	-5.7	0.09	0.51	3.76																																																																																																																																																																																																																																																																																																																																																																					
102.40	-5.5	1.85	10.25	10.25																																																																																																																																																																																																																																																																																																																																																																					
102.35	-5.5	1.85	10.13	13.50																																																																																																																																																																																																																																																																																																																																																																					
102.35	-5.5	2.47	13.50	13.50																																																																																																																																																																																																																																																																																																																																																																					
102.31	-5.4	2.47	13.33	16.75																																																																																																																																																																																																																																																																																																																																																																					
102.21	-5.3	4.41	23.24	23.24																																																																																																																																																																																																																																																																																																																																																																					
102.17	-5.2	4.41	22.95	26.49																																																																																																																																																																																																																																																																																																																																																																					
102.17	-5.2	5.09	26.49	26.49																																																																																																																																																																																																																																																																																																																																																																					
102.12	-5.1	5.09	26.16	29.74																																																																																																																																																																																																																																																																																																																																																																					
102.12	-5.1	5.78	29.74	29.74																																																																																																																																																																																																																																																																																																																																																																					
102.07	-5.1	5.78	29.36	32.99																																																																																																																																																																																																																																																																																																																																																																					
102.07	-5.1	6.50	32.99	32.99																																																																																																																																																																																																																																																																																																																																																																					
102.06	-5.1	6.50	32.86	34.03																																																																																																																																																																																																																																																																																																																																																																					
102.06	-5.1	6.73	34.03	34.03																																																																																																																																																																																																																																																																																																																																																																					
102.01	-5.0	6.73	33.56	37.45																																																																																																																																																																																																																																																																																																																																																																					
101.86	-4.8	9.98	47.72	47.71																																																																																																																																																																																																																																																																																																																																																																					
101.81	-4.7	9.98	47.03	51.14																																																																																																																																																																																																																																																																																																																																																																					
101.81	-4.7	10.85	51.14	51.14																																																																																																																																																																																																																																																																																																																																																																					
101.76	-4.6	10.85	50.39	54.56																																																																																																																																																																																																																																																																																																																																																																					
101.76	-4.6	11.75	54.56	54.56																																																																																																																																																																																																																																																																																																																																																																					
101.71	-4.6	11.75	53.71	58.19																																																																																																																																																																																																																																																																																																																																																																					
101.65	-4.5	13.75	61.83	61.83																																																																																																																																																																																																																																																																																																																																																																					
101.60	-4.4	13.75	60.85	65.47																																																																																																																																																																																																																																																																																																																																																																					
101.60	-4.4	14.79	65.47	65.47																																																																																																																																																																																																																																																																																																																																																																					
101.55	-4.4	14.79	64.42	69.08																																																																																																																																																																																																																																																																																																																																																																					
101.24	-3.9	23.05	90.74	90.73																																																																																																																																																																																																																																																																																																																																																																					
101.18	-3.9	23.05	89.16	94.34																																																																																																																																																																																																																																																																																																																																																																					
101.18	-3.9	24.39	94.34	94.34																																																																																																																																																																																																																																																																																																																																																																					
101.13	-3.8	24.39	92.69	97.95																																																																																																																																																																																																																																																																																																																																																																					
101.13	-3.8	25.77	97.95	97.95																																																																																																																																																																																																																																																																																																																																																																					
101.09	-3.7	25.77	96.40	101.18																																																																																																																																																																																																																																																																																																																																																																					
100.90	-3.5	32.55	114.09	114.09																																																																																																																																																																																																																																																																																																																																																																					
100.85	-3.4	32.55	112.21	117.31																																																																																																																																																																																																																																																																																																																																																																					
100.85	-3.4	34.04	117.32	117.31																																																																																																																																																																																																																																																																																																																																																																					
100.79	-3.4	34.04	114.96	121.22																																																																																																																																																																																																																																																																																																																																																																					
100.74	-3.3	37.82	125.13	125.12																																																																																																																																																																																																																																																																																																																																																																					
100.68	-3.2	37.82	122.56	129.03																																																																																																																																																																																																																																																																																																																																																																					
100.68	-3.2	39.82	129.04	129.03																																																																																																																																																																																																																																																																																																																																																																					
100.66	-3.2	39.82	128.08	130.43																																																																																																																																																																																																																																																																																																																																																																					
100.66	-3.2	40.55	130.43	130.43																																																																																																																																																																																																																																																																																																																																																																					
100.61	-3.2	40.55	128.01	133.92																																																																																																																																																																																																																																																																																																																																																																					
100.21	-2.7	50.00	135.09	161.83																																																																																																																																																																																																																																																																																																																																																																					
100.16	-2.6	50.00	132.40	165.32																																																																																																																																																																																																																																																																																																																																																																					
100.16	-2.6	50.00	132.40	165.32																																																																																																																																																																																																																																																																																																																																																																					
100.11	-2.6	50.00	129.74	168.81																																																																																																																																																																																																																																																																																																																																																																					
100.11	-2.6	50.00	129.74	168.81																																																																																																																																																																																																																																																																																																																																																																					
100.06	-2.5	50.00	127.12	172.30																																																																																																																																																																																																																																																																																																																																																																					
100.06	-2.5	50.00	127.12	172.30																																																																																																																																																																																																																																																																																																																																																																					
100.00	-2.5	50.00	124.53	175.79																																																																																																																																																																																																																																																																																																																																																																					
99.65	-2.1	50.00	107.37	200.21																																																																																																																																																																																																																																																																																																																																																																					
99.60	-2.1	50.00	105.06	203.70																																																																																																																																																																																																																																																																																																																																																																					
99.60	-2.1	50.00	105.06	203.70																																																																																																																																																																																																																																																																																																																																																																					
99.55	-2.1	50.00	102.82	207.11																																																																																																																																																																																																																																																																																																																																																																					
99.21	-1.8	50.00	88.03	231.00																																																																																																																																																																																																																																																																																																																																																																					
99.16	-1.7	50.00	86.03	234.41																																																																																																																																																																																																																																																																																																																																																																					
99.16	-1.7	50.00	86.03	234.41																																																																																																																																																																																																																																																																																																																																																																					
99.11	-1.7	50.00	84.06	237.82																																																																																																																																																																																																																																																																																																																																																																					
98.22	-1.1	50.00	52.63	299.24																																																																																																																																																																																																																																																																																																																																																																					
98.17	-1.0	50.00	51.07	302.65																																																																																																																																																																																																																																																																																																																																																																					
98.17	-1.0	50.00	51.07	302.65																																																																																																																																																																																																																																																																																																																																																																					
98.12	-1.0	50.00	49.52	306.06																																																																																																																																																																																																																																																																																																																																																																					
97.97	-0.9	50.00	44.97	316.30																																																																																																																																																																																																																																																																																																																																																																					
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97.92	-0.9	50.00	43.47	319.71																																																																																																																																																																																																																																																																																																																																																																					
97.87	-0.8	50.00	41.95	323.22																																																																																																																																																																																																																																																																																																																																																																					
97.21	-0.5	50.00	23.00	368.77																																																																																																																																																																																																																																																																																																																																																																					
97.16	-0.4	50.00	21.59	372.28																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage M2 Schnitt 4L			Seite Anlage M2/19																																																																																																																																																																																																																																																																																																																																																																				
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Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																				

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig		-								
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>97.16-0.450.0021.59372.28</div><div>97.11-0.450.0020.18375.78</div><div>96.450.050.002.01421.34</div><div>96.400.050.000.62424.84</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.03146669</div><div>Theoretischer Fußpunkt = 96.399 m</div><div>Einbindetiefe tg = 6.15 m</div><div>Profillänge = 9.80 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k >= Bv,k</div><div>G,k = 185.44 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 77.19 kN/m (Eah,k = 421.52 kN/m)</div><div>Bv,k = 162.37</div><div>Summe V,k = 100.27 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit</div><div>(Erfahrungswerte nach EA Pfähle)</div><div>Verfahren 2: EAU Bild E 4-3 (rechts)</div><div>Bohrpfahlwand D = 0.88 m</div><div>Verhältniswert (min, max) = 0.00</div><div>Spitzendruck qc,m = 7.50 MN/m²</div><div>(gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m²</div><div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung</div><div><table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>96.40</td><td>55.00</td><td>s3: Flusss Kies, -sand</td></tr></table></div><div>Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m</div><div>R,d = Rb,d + R,s1,d = 1106.66 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 222.53 - 0.00 + 88.77 + 0.00 = 311.30 kN/m</div><div>==> µ = V,d / R,d = 311.30 / 1106.66 = 0.28</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	96.40	55.00	s3: Flusss Kies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung							
102.55	96.40	55.00	s3: Flusss Kies, -sand							
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/20								
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: Standsicherheit								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>3 LF 3 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 13_BS 4_LF3.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.20 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.30 2.14 103.74 102.85 100.66 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.70 0.00 0.34 103.74 103.74 103.74 103.46 103.31 nein 2 18.90 5.48 10.08 103.74 100.85 95.43 93.07 88.22 nein 3 0.65 10.08 13.88 103.74 97.92 88.22 88.88 82.26 nein 4 2.50 2.14 5.48 103.75 103.75 100.68 99.60 95.45 nein 5 74.17 0.34 0.64 103.74 103.60 103.31 103.21 102.94 nein 6 81.33 0.64 0.94 103.74 103.47 102.94 102.95 102.54 nein 7 88.47 0.94 1.24 103.74 103.35 102.54 102.65 102.07 nein 8 95.63 1.24 1.54 103.74 103.23 102.07 102.35 101.60 nein 9 102.78 1.54 1.84 103.74 103.10 101.60 102.06 101.13 nein 10 109.92 1.84 2.14 103.74 102.98 101.13 101.76 100.66 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 14.00 106.19 104.74 Ständig 2 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/21
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2106240001
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.65	-13.10	0.00	0.00	0.00	20.50	0.00
2	104.41	0.00	0.00	-89.50	0.00	0.00	0.00

Art des Fußlagers:

Profillänge von 9.80 m fest und Fuß gebettet

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 419.400 / 777.785 = 0.539$

Bettungslager $B_{h,d} = 419.400 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 777.785 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nw,k kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-219.71	-189.26	-189.26	-150.96	3.900E+7	2.100E+7	-241.31

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00

max M,d [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-8.5	0.0	-225.20	0.00	0.00
-7.47	103.72	-8.5	0.0	-225.20	0.00	0.00
-7.47	103.72	-8.5	0.0	-225.20	0.00	0.00
-6.64	103.72	-8.5	0.0	-225.20	0.00	0.00
-5.81	103.72	-8.5	0.0	-225.20	0.00	0.00
-4.98	103.72	-8.5	0.0	-225.20	0.00	0.00
-4.15	103.72	-8.5	0.0	-225.20	0.00	0.00
-3.32	103.72	-8.5	0.0	-225.20	0.00	0.00
-2.49	103.72	-8.5	0.0	-225.20	0.00	0.00
-1.66	103.72	-8.5	0.0	-225.20	0.00	0.00
-0.83	103.72	-8.5	0.0	-225.20	0.00	0.00
0.00	103.72	-8.5	0.0	-225.20	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden aus der Datei

P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 4\Linkes Ufer\12_BS 4_LF2.vrb

eingeliesen.


Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0074

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.32	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.62	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage M2 Schnitt 4L	Seite Anlage M2/22
Kapitel:	3 LF 3 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																				
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																				
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><th>Schicht</th><th>UK</th><th>kagh</th><th>kach</th><th>phi,k</th><th>delta</th><th>theta</th><th>kagh(40°)</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.32</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.200</td><td>106.190</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.190</td><td>105.650</td><td>0.000</td><td>5.214</td><td>0.00</td><td>0.00</td></tr><tr><td>105.650</td><td>105.500</td><td>5.214</td><td>6.662</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.320</td><td>6.662</td><td>8.400</td><td>0.00</td><td>1.80</td></tr><tr><td>105.320</td><td>105.149</td><td>8.400</td><td>10.052</td><td>1.80</td><td>3.51</td></tr><tr><td>105.149</td><td>104.740</td><td>10.052</td><td>14.000</td><td>3.51</td><td>7.60</td></tr><tr><td>104.740</td><td>104.410</td><td>0.000</td><td>0.000</td><td>7.60</td><td>10.90</td></tr><tr><td>104.410</td><td>104.200</td><td>0.000</td><td>0.000</td><td>10.90</td><td>13.00</td></tr><tr><td>104.200</td><td>103.750</td><td>0.000</td><td>0.000</td><td>13.00</td><td>17.50</td></tr><tr><td>103.750</td><td>103.740</td><td>0.000</td><td>0.008</td><td>17.50</td><td>17.60</td></tr><tr><td>103.740</td><td>103.720</td><td>0.003</td><td>21.811</td><td>17.60</td><td>17.80</td></tr><tr><td>103.720</td><td>103.599</td><td>21.811</td><td>22.375</td><td>17.80</td><td>19.01</td></tr><tr><td>103.599</td><td>103.475</td><td>22.375</td><td>39.045</td><td>19.01</td><td>20.25</td></tr><tr><td>103.475</td><td>103.458</td><td>39.045</td><td>42.525</td><td>20.25</td><td>20.42</td></tr><tr><td>103.458</td><td>103.351</td><td>42.525</td><td>47.834</td><td>20.42</td><td>21.49</td></tr><tr><td>103.351</td><td>103.312</td><td>47.834</td><td>51.813</td><td>21.49</td><td>21.88</td></tr><tr><td>103.312</td><td>103.226</td><td>51.813</td><td>63.421</td><td>21.88</td><td>22.74</td></tr><tr><td>103.226</td><td>103.208</td><td>63.421</td><td>66.745</td><td>22.74</td><td>22.92</td></tr><tr><td>103.208</td><td>103.200</td><td>66.745</td><td>67.047</td><td>22.92</td><td>23.00</td></tr><tr><td>103.200</td><td>103.102</td><td>67.047</td><td>70.969</td><td>23.00</td><td>23.98</td></tr><tr><td>103.102</td><td>102.978</td><td>70.969</td><td>80.210</td><td>23.98</td><td>25.22</td></tr><tr><td>102.978</td><td>102.949</td><td>80.210</td><td>83.203</td><td>25.22</td><td>25.51</td></tr><tr><td>102.949</td><td>102.935</td><td>83.203</td><td>83.260</td><td>25.51</td><td>25.65</td></tr><tr><td>102.935</td><td>102.854</td><td>83.260</td><td>88.555</td><td>25.65</td><td>26.46</td></tr><tr><td>102.854</td><td>102.652</td><td>88.555</td><td>105.072</td><td>26.46</td><td>28.48</td></tr><tr><td>102.652</td><td>102.620</td><td>105.072</td><td>105.246</td><td>28.48</td><td>28.80</td></tr><tr><td>102.620</td><td>102.550</td><td>76.170</td><td>76.518</td><td>28.80</td><td>29.50</td></tr><tr><td>102.550</td><td>102.543</td><td>76.518</td><td>76.554</td><td>0.00</td><td>0.00</td></tr><tr><td>102.543</td><td>102.355</td><td>76.554</td><td>83.559</td><td>0.00</td><td>0.00</td></tr><tr><td>102.355</td><td>102.166</td><td>83.559</td><td>82.042</td><td>0.00</td><td>0.00</td></tr><tr><td>102.166</td><td>102.072</td><td>82.042</td><td>81.284</td><td>0.00</td><td>0.00</td></tr><tr><td>102.072</td><td>102.057</td><td>81.284</td><td>81.536</td><td>0.00</td><td>0.00</td></tr><tr><td>102.057</td><td>101.810</td><td>81.536</td><td>75.894</td><td>0.00</td><td>0.00</td></tr><tr><td>101.810</td><td>101.760</td><td>75.894</td><td>74.766</td><td>0.00</td><td>0.00</td></tr><tr><td>101.760</td><td>101.602</td><td>74.766</td><td>65.529</td><td>0.00</td><td>0.00</td></tr><tr><td>101.602</td><td>101.184</td><td>65.529</td><td>49.821</td><td>0.00</td><td>0.00</td></tr><tr><td>101.184</td><td>101.132</td><td>49.821</td><td>47.857</td><td>0.00</td><td>0.00</td></tr><tr><td>101.132</td><td>100.851</td><td>47.857</td><td>42.472</td><td>0.00</td><td>0.00</td></tr><tr><td>100.851</td><td>100.682</td><td>42.472</td><td>39.425</td><td>0.00</td><td>0.00</td></tr><tr><td>100.682</td><td>100.662</td><td>39.425</td><td>39.055</td><td>0.00</td><td>0.00</td></tr><tr><td>100.662</td><td>100.308</td><td>39.055</td><td>40.945</td><td>0.00</td><td>0.00</td></tr><tr><td>100.308</td><td>100.156</td><td>40.945</td><td>41.755</td><td>0.00</td><td>0.00</td></tr><tr><td>100.156</td><td>99.601</td><td>41.755</td><td>44.725</td><td>0.00</td><td>0.00</td></tr><tr><td>99.601</td><td>99.156</td><td>44.725</td><td>47.006</td><td>0.00</td><td>0.00</td></tr><tr><td>99.156</td><td>98.168</td><td>47.006</td><td>52.074</td><td>0.00</td><td>0.00</td></tr><tr><td>98.168</td><td>97.921</td><td>52.074</td><td>53.341</td><td>0.00</td><td>0.00</td></tr><tr><td>97.921</td><td>97.160</td><td>53.341</td><td>57.263</td><td>0.00</td><td>0.00</td></tr><tr><td>97.160</td><td>96.399</td><td>57.263</td><td>61.185</td><td>0.00</td><td>0.00</td></tr><tr><td>96.399</td><td>95.446</td><td>61.185</td><td>66.093</td><td>0.00</td><td>0.00</td></tr><tr><td>95.446</td><td>95.426</td><td>66.093</td><td>66.202</td><td>0.00</td><td>0.00</td></tr><tr><td>95.426</td><td>93.071</td><td>66.202</td><td>75.919</td><td>0.00</td><td>0.00</td></tr><tr><td>93.071</td><td>88.882</td><td>75.919</td><td>87.384</td><td>0.00</td><td>0.00</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.32	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.62	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.200	106.190	0.000	0.000	0.00	0.00	106.190	105.650	0.000	5.214	0.00	0.00	105.650	105.500	5.214	6.662	0.00	0.00	105.500	105.320	6.662	8.400	0.00	1.80	105.320	105.149	8.400	10.052	1.80	3.51	105.149	104.740	10.052	14.000	3.51	7.60	104.740	104.410	0.000	0.000	7.60	10.90	104.410	104.200	0.000	0.000	10.90	13.00	104.200	103.750	0.000	0.000	13.00	17.50	103.750	103.740	0.000	0.008	17.50	17.60	103.740	103.720	0.003	21.811	17.60	17.80	103.720	103.599	21.811	22.375	17.80	19.01	103.599	103.475	22.375	39.045	19.01	20.25	103.475	103.458	39.045	42.525	20.25	20.42	103.458	103.351	42.525	47.834	20.42	21.49	103.351	103.312	47.834	51.813	21.49	21.88	103.312	103.226	51.813	63.421	21.88	22.74	103.226	103.208	63.421	66.745	22.74	22.92	103.208	103.200	66.745	67.047	22.92	23.00	103.200	103.102	67.047	70.969	23.00	23.98	103.102	102.978	70.969	80.210	23.98	25.22	102.978	102.949	80.210	83.203	25.22	25.51	102.949	102.935	83.203	83.260	25.51	25.65	102.935	102.854	83.260	88.555	25.65	26.46	102.854	102.652	88.555	105.072	26.46	28.48	102.652	102.620	105.072	105.246	28.48	28.80	102.620	102.550	76.170	76.518	28.80	29.50	102.550	102.543	76.518	76.554	0.00	0.00	102.543	102.355	76.554	83.559	0.00	0.00	102.355	102.166	83.559	82.042	0.00	0.00	102.166	102.072	82.042	81.284	0.00	0.00	102.072	102.057	81.284	81.536	0.00	0.00	102.057	101.810	81.536	75.894	0.00	0.00	101.810	101.760	75.894	74.766	0.00	0.00	101.760	101.602	74.766	65.529	0.00	0.00	101.602	101.184	65.529	49.821	0.00	0.00	101.184	101.132	49.821	47.857	0.00	0.00	101.132	100.851	47.857	42.472	0.00	0.00	100.851	100.682	42.472	39.425	0.00	0.00	100.682	100.662	39.425	39.055	0.00	0.00	100.662	100.308	39.055	40.945	0.00	0.00	100.308	100.156	40.945	41.755	0.00	0.00	100.156	99.601	41.755	44.725	0.00	0.00	99.601	99.156	44.725	47.006	0.00	0.00	99.156	98.168	47.006	52.074	0.00	0.00	98.168	97.921	52.074	53.341	0.00	0.00	97.921	97.160	53.341	57.263	0.00	0.00	97.160	96.399	57.263	61.185	0.00	0.00	96.399	95.446	61.185	66.093	0.00	0.00	95.446	95.426	66.093	66.202	0.00	0.00	95.426	93.071	66.202	75.919	0.00	0.00	93.071	88.882	75.919	87.384	0.00	0.00
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																																																															
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																																															
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101.760	101.602	74.766	65.529	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.602	101.184	65.529	49.821	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.184	101.132	49.821	47.857	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.132	100.851	47.857	42.472	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.851	100.682	42.472	39.425	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.682	100.662	39.425	39.055	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.662	100.308	39.055	40.945	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.308	100.156	40.945	41.755	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.156	99.601	41.755	44.725	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
99.601	99.156	44.725	47.006	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
99.156	98.168	47.006	52.074	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
98.168	97.921	52.074	53.341	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
97.921	97.160	53.341	57.263	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
97.160	96.399	57.263	61.185	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
96.399	95.446	61.185	66.093	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
95.446	95.426	66.093	66.202	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
95.426	93.071	66.202	75.919	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
93.071	88.882	75.919	87.384	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/23																																																																																																																																																																																																																																																																																																																																																																																				
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																				
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																				



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 88.882 88.216 87.384 89.185 0.00 0.00 88.216 82.259 89.185 113.407 0.00 0.00 82.259 80.000 113.407 122.673 0.00 0.00 </div> <div> Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.20 102.55 </div> <div> Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35 </div> <div> Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.62 102.55 0.00 0.00 102.55 102.54 0.00 -0.32 102.54 102.35 -0.32 -8.31 102.35 102.17 -8.31 -16.30 102.17 102.07 -16.30 -20.30 102.07 102.06 -20.30 -20.94 102.06 101.81 -20.94 -31.47 101.81 101.76 -31.47 -33.57 101.76 101.60 -33.57 -40.29 101.60 101.18 -40.29 -58.05 101.18 101.13 -58.05 -60.28 101.13 100.85 -60.28 -72.19 100.85 100.68 -72.19 -79.40 100.68 100.66 -79.40 -80.26 100.66 100.31 -80.26 -95.29 100.31 100.16 -95.29 -101.73 100.16 99.60 -101.73 -125.35 99.60 99.16 -125.35 -144.25 99.16 98.17 -144.25 -186.25 98.17 97.92 -186.25 -196.75 97.92 97.16 -196.75 -229.09 97.16 96.40 -229.09 -261.44 96.40 95.45 -261.44 -301.92 95.45 95.43 -301.92 -302.78 95.43 93.07 -302.78 -402.89 93.07 88.88 -402.89 -580.92 88.88 88.22 -580.92 -609.24 88.22 82.26 -609.24 -862.41 82.26 80.00 -862.41 -958.43 </div> <div> Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.20 0.0 0.0 0.0 106.19 -0.2 0.0 0.0 105.65 -12.0 -1.6 -0.3 105.65 -36.6 -1.6 -16.0 105.50 -39.8 -2.6 -16.3 105.32 -43.8 -4.4 -17.0 105.15 -47.5 -6.8 -17.9 104.74 -56.4 -15.1 -22.2 104.41 -63.6 -18.8 -27.8 104.41 -63.6 -126.2 -27.8 104.20 -68.1 -129.2 -54.6 103.75 -77.9 -137.4 -114.5 103.74 -78.1 -137.7 -115.9 103.72 -78.7 -138.6 -118.7 -225.2 103.72 -78.7 86.6 -118.7 103.60 -82.1 80.9 -108.5 103.47 -86.0 73.6 -98.9 </div> </div>		
Schnitt:	Anlage M2 Schnitt 4L	Seite Anlage M2/24
Kapitel:	3 LF 3 (BS-T)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																															
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<table><tr><td>103.46</td><td>-86.6</td><td>72.4</td><td>-97.7</td><td></td><td></td></tr><tr><td>103.35</td><td>-90.4</td><td>64.1</td><td>-90.3</td><td></td><td></td></tr><tr><td>103.31</td><td>-91.9</td><td>60.9</td><td>-87.9</td><td></td><td></td></tr><tr><td>103.23</td><td>-95.3</td><td>52.9</td><td>-83.0</td><td></td><td></td></tr><tr><td>103.21</td><td>-96.0</td><td>51.0</td><td>-82.1</td><td></td><td></td></tr><tr><td>103.20</td><td>-96.4</td><td>50.2</td><td>-81.7</td><td></td><td></td></tr><tr><td>103.10</td><td>-100.6</td><td>39.7</td><td>-77.3</td><td></td><td></td></tr><tr><td>102.98</td><td>-106.2</td><td>25.2</td><td>-73.2</td><td></td><td></td></tr><tr><td>102.95</td><td>-107.5</td><td>21.6</td><td>-72.6</td><td></td><td></td></tr><tr><td>102.94</td><td>-108.2</td><td>19.9</td><td>-72.3</td><td></td><td></td></tr><tr><td>102.85</td><td>-112.1</td><td>9.3</td><td>-71.1</td><td></td><td></td></tr><tr><td>102.65</td><td>-122.5</td><td>-19.8</td><td>-72.1</td><td></td><td></td></tr><tr><td>102.62</td><td>-124.3</td><td>-24.8</td><td>-72.8</td><td></td><td></td></tr><tr><td>102.55</td><td>-128.2</td><td>-33.4</td><td>-74.8</td><td></td><td></td></tr><tr><td>102.54</td><td>-128.6</td><td>-34.0</td><td>-75.1</td><td></td><td></td></tr><tr><td>102.35</td><td>-132.3</td><td>-50.2</td><td>-83.0</td><td></td><td></td></tr><tr><td>102.17</td><td>-134.8</td><td>-64.2</td><td>-93.8</td><td></td><td></td></tr><tr><td>102.07</td><td>-135.6</td><td>-70.0</td><td>-100.1</td><td></td><td></td></tr><tr><td>102.06</td><td>-135.7</td><td>-70.8</td><td>-101.2</td><td></td><td></td></tr><tr><td>101.81</td><td>-136.5</td><td>-81.7</td><td>-120.2</td><td></td><td></td></tr><tr><td>101.76</td><td>-136.5</td><td>-83.1</td><td>-124.3</td><td></td><td></td></tr><tr><td>101.60</td><td>-135.7</td><td>-85.4</td><td>-137.6</td><td></td><td></td></tr><tr><td>101.18</td><td>-130.0</td><td>-76.0</td><td>-172.1</td><td></td><td></td></tr><tr><td>101.13</td><td>-128.9</td><td>-73.3</td><td>-176.0</td><td></td><td></td></tr><tr><td>100.85</td><td>-121.5</td><td>-54.1</td><td>-194.1</td><td></td><td></td></tr><tr><td>100.68</td><td>-115.9</td><td>-38.7</td><td>-202.0</td><td></td><td></td></tr><tr><td>100.66</td><td>-115.1</td><td>-36.7</td><td>-202.7</td><td></td><td></td></tr><tr><td>100.31</td><td>-101.6</td><td>0.2</td><td>-209.1</td><td></td><td></td></tr><tr><td>100.16</td><td>-96.5</td><td>14.0</td><td>-208.0</td><td></td><td></td></tr><tr><td>99.60</td><td>-82.3</td><td>52.1</td><td>-188.7</td><td></td><td></td></tr><tr><td>99.16</td><td>-75.4</td><td>70.2</td><td>-161.1</td><td></td><td></td></tr><tr><td>98.17</td><td>-71.4</td><td>77.7</td><td>-84.6</td><td></td><td></td></tr><tr><td>97.92</td><td>-72.5</td><td>73.4</td><td>-65.9</td><td></td><td></td></tr><tr><td>97.16</td><td>-80.5</td><td>46.6</td><td>-19.0</td><td></td><td></td></tr><tr><td>96.40</td><td>-94.7</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Schnittgrößen ([g+q+w],k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.19</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.65</td><td>-10.4</td><td>-1.4</td><td>-0.3</td><td></td><td></td></tr><tr><td>105.65</td><td>-30.9</td><td>-1.4</td><td>-13.4</td><td></td><td></td></tr><tr><td>105.50</td><td>-33.7</td><td>-2.3</td><td>-13.6</td><td></td><td></td></tr><tr><td>105.32</td><td>-37.2</td><td>-3.8</td><td>-14.2</td><td></td><td></td></tr><tr><td>105.15</td><td>-40.4</td><td>-5.8</td><td>-15.0</td><td></td><td></td></tr><tr><td>104.74</td><td>-48.1</td><td>-13.0</td><td>-18.7</td><td></td><td></td></tr><tr><td>104.41</td><td>-54.4</td><td>-16.1</td><td>-23.5</td><td></td><td></td></tr><tr><td>104.41</td><td>-54.4</td><td>-105.6</td><td>-23.5</td><td></td><td></td></tr><tr><td>104.20</td><td>-58.3</td><td>-108.1</td><td>-45.9</td><td></td><td></td></tr><tr><td>103.75</td><td>-66.9</td><td>-115.0</td><td>-96.1</td><td></td><td></td></tr><tr><td>103.74</td><td>-67.1</td><td>-115.1</td><td>-97.2</td><td></td><td></td></tr><tr><td>103.72</td><td>-67.5</td><td>-115.9</td><td>-99.5</td><td>-189.3</td><td></td></tr><tr><td>103.72</td><td>-67.5</td><td>73.4</td><td>-99.5</td><td></td><td></td></tr><tr><td>103.60</td><td>-70.5</td><td>68.5</td><td>-90.9</td><td></td><td></td></tr><tr><td>103.47</td><td>-73.9</td><td>62.2</td><td>-82.8</td><td></td><td></td></tr><tr><td>103.46</td><td>-74.4</td><td>61.2</td><td>-81.8</td><td></td><td></td></tr><tr><td>103.35</td><td>-77.8</td><td>54.1</td><td>-75.6</td><td></td><td></td></tr><tr><td>103.31</td><td>-79.0</td><td>51.3</td><td>-73.6</td><td></td><td></td></tr><tr><td>103.23</td><td>-81.9</td><td>44.5</td><td>-69.4</td><td></td><td></td></tr><tr><td>103.21</td><td>-82.6</td><td>42.8</td><td>-68.6</td><td></td><td></td></tr><tr><td>103.20</td><td>-82.9</td><td>42.1</td><td>-68.3</td><td></td><td></td></tr><tr><td>103.10</td><td>-86.6</td><td>33.1</td><td>-64.6</td><td></td><td></td></tr><tr><td>102.98</td><td>-91.4</td><td>20.6</td><td>-61.2</td><td></td><td></td></tr><tr><td>102.95</td><td>-92.6</td><td>17.6</td><td>-60.7</td><td></td><td></td></tr><tr><td>102.94</td><td>-93.2</td><td>16.0</td><td>-60.5</td><td></td><td></td></tr><tr><td>102.85</td><td>-96.6</td><td>6.9</td><td>-59.5</td><td></td><td></td></tr><tr><td>102.65</td><td>-105.7</td><td>-18.2</td><td>-60.6</td><td></td><td></td></tr><tr><td>102.62</td><td>-107.2</td><td>-22.4</td><td>-61.2</td><td></td><td></td></tr><tr><td>102.55</td><td>-110.6</td><td>-29.8</td><td>-63.1</td><td></td><td></td></tr><tr><td>102.54</td><td>-111.0</td><td>-30.4</td><td>-63.3</td><td></td><td></td></tr></table>						103.46	-86.6	72.4	-97.7			103.35	-90.4	64.1	-90.3			103.31	-91.9	60.9	-87.9			103.23	-95.3	52.9	-83.0			103.21	-96.0	51.0	-82.1			103.20	-96.4	50.2	-81.7			103.10	-100.6	39.7	-77.3			102.98	-106.2	25.2	-73.2			102.95	-107.5	21.6	-72.6			102.94	-108.2	19.9	-72.3			102.85	-112.1	9.3	-71.1			102.65	-122.5	-19.8	-72.1			102.62	-124.3	-24.8	-72.8			102.55	-128.2	-33.4	-74.8			102.54	-128.6	-34.0	-75.1			102.35	-132.3	-50.2	-83.0			102.17	-134.8	-64.2	-93.8			102.07	-135.6	-70.0	-100.1			102.06	-135.7	-70.8	-101.2			101.81	-136.5	-81.7	-120.2			101.76	-136.5	-83.1	-124.3			101.60	-135.7	-85.4	-137.6			101.18	-130.0	-76.0	-172.1			101.13	-128.9	-73.3	-176.0			100.85	-121.5	-54.1	-194.1			100.68	-115.9	-38.7	-202.0			100.66	-115.1	-36.7	-202.7			100.31	-101.6	0.2	-209.1			100.16	-96.5	14.0	-208.0			99.60	-82.3	52.1	-188.7			99.16	-75.4	70.2	-161.1			98.17	-71.4	77.7	-84.6			97.92	-72.5	73.4	-65.9			97.16	-80.5	46.6	-19.0			96.40	-94.7	0.0	0.0			Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.20	0.0	0.0	0.0			106.19	-0.2	0.0	0.0			105.65	-10.4	-1.4	-0.3			105.65	-30.9	-1.4	-13.4			105.50	-33.7	-2.3	-13.6			105.32	-37.2	-3.8	-14.2			105.15	-40.4	-5.8	-15.0			104.74	-48.1	-13.0	-18.7			104.41	-54.4	-16.1	-23.5			104.41	-54.4	-105.6	-23.5			104.20	-58.3	-108.1	-45.9			103.75	-66.9	-115.0	-96.1			103.74	-67.1	-115.1	-97.2			103.72	-67.5	-115.9	-99.5	-189.3		103.72	-67.5	73.4	-99.5			103.60	-70.5	68.5	-90.9			103.47	-73.9	62.2	-82.8			103.46	-74.4	61.2	-81.8			103.35	-77.8	54.1	-75.6			103.31	-79.0	51.3	-73.6			103.23	-81.9	44.5	-69.4			103.21	-82.6	42.8	-68.6			103.20	-82.9	42.1	-68.3			103.10	-86.6	33.1	-64.6			102.98	-91.4	20.6	-61.2			102.95	-92.6	17.6	-60.7			102.94	-93.2	16.0	-60.5			102.85	-96.6	6.9	-59.5			102.65	-105.7	-18.2	-60.6			102.62	-107.2	-22.4	-61.2			102.55	-110.6	-29.8	-63.1			102.54	-111.0	-30.4	-63.3		
103.46	-86.6	72.4	-97.7																																																																																																																																																																																																																																																																																																																																																																																																																																
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102.85	-112.1	9.3	-71.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-122.5	-19.8	-72.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-124.3	-24.8	-72.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-128.2	-33.4	-74.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.54	-128.6	-34.0	-75.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.35	-132.3	-50.2	-83.0																																																																																																																																																																																																																																																																																																																																																																																																																																
102.17	-134.8	-64.2	-93.8																																																																																																																																																																																																																																																																																																																																																																																																																																
102.07	-135.6	-70.0	-100.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.06	-135.7	-70.8	-101.2																																																																																																																																																																																																																																																																																																																																																																																																																																
101.81	-136.5	-81.7	-120.2																																																																																																																																																																																																																																																																																																																																																																																																																																
101.76	-136.5	-83.1	-124.3																																																																																																																																																																																																																																																																																																																																																																																																																																
101.60	-135.7	-85.4	-137.6																																																																																																																																																																																																																																																																																																																																																																																																																																
101.18	-130.0	-76.0	-172.1																																																																																																																																																																																																																																																																																																																																																																																																																																
101.13	-128.9	-73.3	-176.0																																																																																																																																																																																																																																																																																																																																																																																																																																
100.85	-121.5	-54.1	-194.1																																																																																																																																																																																																																																																																																																																																																																																																																																
100.68	-115.9	-38.7	-202.0																																																																																																																																																																																																																																																																																																																																																																																																																																
100.66	-115.1	-36.7	-202.7																																																																																																																																																																																																																																																																																																																																																																																																																																
100.31	-101.6	0.2	-209.1																																																																																																																																																																																																																																																																																																																																																																																																																																
100.16	-96.5	14.0	-208.0																																																																																																																																																																																																																																																																																																																																																																																																																																
99.60	-82.3	52.1	-188.7																																																																																																																																																																																																																																																																																																																																																																																																																																
99.16	-75.4	70.2	-161.1																																																																																																																																																																																																																																																																																																																																																																																																																																
98.17	-71.4	77.7	-84.6																																																																																																																																																																																																																																																																																																																																																																																																																																
97.92	-72.5	73.4	-65.9																																																																																																																																																																																																																																																																																																																																																																																																																																
97.16	-80.5	46.6	-19.0																																																																																																																																																																																																																																																																																																																																																																																																																																
96.40	-94.7	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																																																																																																																															
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																																																																																																																															
106.20	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
106.19	-0.2	0.0	0.0																																																																																																																																																																																																																																																																																																																																																																																																																																
105.65	-10.4	-1.4	-0.3																																																																																																																																																																																																																																																																																																																																																																																																																																
105.65	-30.9	-1.4	-13.4																																																																																																																																																																																																																																																																																																																																																																																																																																
105.50	-33.7	-2.3	-13.6																																																																																																																																																																																																																																																																																																																																																																																																																																
105.32	-37.2	-3.8	-14.2																																																																																																																																																																																																																																																																																																																																																																																																																																
105.15	-40.4	-5.8	-15.0																																																																																																																																																																																																																																																																																																																																																																																																																																
104.74	-48.1	-13.0	-18.7																																																																																																																																																																																																																																																																																																																																																																																																																																
104.41	-54.4	-16.1	-23.5																																																																																																																																																																																																																																																																																																																																																																																																																																
104.41	-54.4	-105.6	-23.5																																																																																																																																																																																																																																																																																																																																																																																																																																
104.20	-58.3	-108.1	-45.9																																																																																																																																																																																																																																																																																																																																																																																																																																
103.75	-66.9	-115.0	-96.1																																																																																																																																																																																																																																																																																																																																																																																																																																
103.74	-67.1	-115.1	-97.2																																																																																																																																																																																																																																																																																																																																																																																																																																
103.72	-67.5	-115.9	-99.5	-189.3																																																																																																																																																																																																																																																																																																																																																																																																																															
103.72	-67.5	73.4	-99.5																																																																																																																																																																																																																																																																																																																																																																																																																																
103.60	-70.5	68.5	-90.9																																																																																																																																																																																																																																																																																																																																																																																																																																
103.47	-73.9	62.2	-82.8																																																																																																																																																																																																																																																																																																																																																																																																																																
103.46	-74.4	61.2	-81.8																																																																																																																																																																																																																																																																																																																																																																																																																																
103.35	-77.8	54.1	-75.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.31	-79.0	51.3	-73.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.23	-81.9	44.5	-69.4																																																																																																																																																																																																																																																																																																																																																																																																																																
103.21	-82.6	42.8	-68.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.20	-82.9	42.1	-68.3																																																																																																																																																																																																																																																																																																																																																																																																																																
103.10	-86.6	33.1	-64.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.98	-91.4	20.6	-61.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.95	-92.6	17.6	-60.7																																																																																																																																																																																																																																																																																																																																																																																																																																
102.94	-93.2	16.0	-60.5																																																																																																																																																																																																																																																																																																																																																																																																																																
102.85	-96.6	6.9	-59.5																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-105.7	-18.2	-60.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-107.2	-22.4	-61.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-110.6	-29.8	-63.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.54	-111.0	-30.4	-63.3																																																																																																																																																																																																																																																																																																																																																																																																																																
Schnitt: Anlage M2 Schnitt 4L				Seite Anlage M2/25																																																																																																																																																																																																																																																																																																																																																																																																																															
Kapitel: 3 LF 3 (BS-T)				Archiv Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.35 -114.1 -44.4 -70.3</div><div>102.17 -116.3 -56.6 -79.9</div><div>102.07 -117.1 -61.6 -85.4</div><div>102.06 -117.2 -62.4 -86.4</div><div>101.81 -117.9 -71.8 -103.1</div><div>101.76 -117.8 -73.0 -106.7</div><div>101.60 -117.2 -75.0 -118.4</div><div>101.18 -112.2 -66.8 -148.7</div><div>101.13 -111.3 -64.4 -152.1</div><div>100.85 -104.9 -47.6 -168.0</div><div>100.68 -100.0 -34.3 -175.0</div><div>100.66 -99.3 -32.5 -175.6</div><div>100.31 -87.6 -0.2 -181.3</div><div>100.16 -83.2 11.7 -180.5</div><div>99.60 -70.9 45.1 -163.9</div><div>99.16 -64.9 60.9 -140.0</div><div>98.17 -61.5 67.5 -73.6</div><div>97.92 -62.5 63.9 -57.3</div><div>97.16 -69.4 40.5 -16.5</div><div>96.40 -81.9 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.19</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.65</div><div>-10.4</div><div>-1.4</div><div>-0.3</div><div></div></div><div><div>105.65</div><div>-30.9</div><div>-1.4</div><div>-13.4</div><div></div></div><div><div>105.50</div><div>-33.7</div><div>-2.3</div><div>-13.6</div><div></div></div><div><div>105.32</div><div>-37.2</div><div>-3.8</div><div>-14.2</div><div></div></div><div><div>105.15</div><div>-40.4</div><div>-5.8</div><div>-15.0</div><div></div></div><div><div>104.74</div><div>-48.1</div><div>-13.0</div><div>-18.7</div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-16.1</div><div>-23.5</div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-105.6</div><div>-23.5</div><div></div></div><div><div>104.20</div><div>-58.3</div><div>-108.1</div><div>-45.9</div><div></div></div><div><div>103.75</div><div>-66.9</div><div>-115.0</div><div>-96.1</div><div></div></div><div><div>103.74</div><div>-67.1</div><div>-115.1</div><div>-97.2</div><div></div></div><div><div>103.72</div><div>-67.5</div><div>-115.9</div><div>-99.5</div><div>-189.3</div></div><div><div>103.72</div><div>-67.5</div><div>73.4</div><div>-99.5</div><div></div></div><div><div>103.60</div><div>-70.5</div><div>68.5</div><div>-90.9</div><div></div></div><div><div>103.47</div><div>-73.9</div><div>62.2</div><div>-82.8</div><div></div></div><div><div>103.46</div><div>-74.4</div><div>61.2</div><div>-81.8</div><div></div></div><div><div>103.35</div><div>-77.8</div><div>54.1</div><div>-75.6</div><div></div></div><div><div>103.31</div><div>-79.0</div><div>51.3</div><div>-73.6</div><div></div></div><div><div>103.23</div><div>-81.9</div><div>44.5</div><div>-69.4</div><div></div></div><div><div>103.21</div><div>-82.6</div><div>42.8</div><div>-68.6</div><div></div></div><div><div>103.20</div><div>-82.9</div><div>42.1</div><div>-68.3</div><div></div></div><div><div>103.10</div><div>-86.6</div><div>33.1</div><div>-64.6</div><div></div></div><div><div>102.98</div><div>-91.4</div><div>20.6</div><div>-61.2</div><div></div></div><div><div>102.95</div><div>-92.6</div><div>17.6</div><div>-60.7</div><div></div></div><div><div>102.94</div><div>-93.2</div><div>16.0</div><div>-60.5</div><div></div></div><div><div>102.85</div><div>-96.6</div><div>6.9</div><div>-59.5</div><div></div></div><div><div>102.65</div><div>-105.7</div><div>-18.2</div><div>-60.6</div><div></div></div><div><div>102.62</div><div>-107.2</div><div>-22.4</div><div>-61.2</div><div></div></div><div><div>102.55</div><div>-110.6</div><div>-29.8</div><div>-63.1</div><div></div></div><div><div>102.54</div><div>-111.0</div><div>-30.4</div><div>-63.3</div><div></div></div><div><div>102.35</div><div>-114.1</div><div>-44.4</div><div>-70.3</div><div></div></div><div><div>102.17</div><div>-116.3</div><div>-56.6</div><div>-79.9</div><div></div></div><div><div>102.07</div><div>-117.1</div><div>-61.6</div><div>-85.4</div><div></div></div><div><div>102.06</div><div>-117.2</div><div>-62.4</div><div>-86.4</div><div></div></div><div><div>101.81</div><div>-117.9</div><div>-71.8</div><div>-103.1</div><div></div></div><div><div>101.76</div><div>-117.8</div><div>-73.0</div><div>-106.7</div><div></div></div><div><div>101.60</div><div>-117.2</div><div>-75.0</div><div>-118.4</div><div></div></div><div><div>101.18</div><div>-112.2</div><div>-66.8</div><div>-148.7</div><div></div></div><div><div>101.13</div><div>-111.3</div><div>-64.4</div><div>-152.1</div><div></div></div><div><div>100.85</div><div>-104.9</div><div>-47.6</div><div>-168.0</div><div></div></div><div><div>100.68</div><div>-100.0</div><div>-34.3</div><div>-175.0</div><div></div></div><div><div>100.66</div><div>-99.3</div><div>-32.5</div><div>-175.6</div><div></div></div><div><div>100.31</div><div>-87.6</div><div>-0.2</div><div>-181.3</div><div></div></div><div><div>100.16</div><div>-83.2</div><div>11.7</div><div>-180.5</div><div></div></div><div><div>99.60</div><div>-70.9</div><div>45.1</div><div>-163.9</div><div></div></div></div></div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/26
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>99.16-64.960.9-140.0</div><div>98.17-61.567.5-73.6</div><div>97.92-62.563.9-57.3</div><div>97.16-69.440.5-16.5</div><div>96.40-81.90.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.19</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.32</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.75</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-109.7</div></div><div><div>103.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.47</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.46</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.31</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.23</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.21</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.98</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.94</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.62</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.54</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.17</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.07</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.06</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.81</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.76</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.18</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.13</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.68</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.66</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.31</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.17</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>97.92</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>97.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>96.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div></div>					
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Kapitel:		3 LF 3 (BS-T)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																									
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.20</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.14</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.46</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.46</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.31</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.31</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.27</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.27</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.21</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.21</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.20	-11.8	-	-	-	106.19	-11.8	-	-	-	106.19	-11.8	-	-	-	106.14	-11.7	-	-	-	105.70	-10.9	-	-	-	105.65	-10.8	-	-	-	105.65	-10.8	-	-	-	105.60	-10.7	-	-	-	105.55	-10.7	-	-	-	105.50	-10.6	-	-	-	105.50	-10.6	-	-	-	105.45	-10.5	-	-	-	105.36	-10.3	-	-	-	105.32	-10.2	-	-	-	105.32	-10.2	-	-	-	105.26	-10.1	-	-	-	105.20	-10.0	-	-	-	105.15	-9.9	-	-	-	105.15	-9.9	-	-	-	105.10	-9.8	-	-	-	104.79	-9.3	-	-	-	104.74	-9.2	-	-	-	104.74	-9.2	-	-	-	104.70	-9.1	-	-	-	104.46	-8.7	-	-	-	104.41	-8.6	-	-	-	104.41	-8.6	-	-	-	104.36	-8.5	-	-	-	104.25	-8.3	-	-	-	104.20	-8.2	-	-	-	104.20	-8.2	-	-	-	104.15	-8.2	-	-	-	103.80	-7.6	-	-	-	103.75	-7.5	-	-	-	103.75	-7.5	-	-	-	103.74	-7.5	-	-	-	103.74	-7.5	-	-	-	103.74	-7.4	-	-	-	103.74	-7.4	-	-	-	103.72	-7.4	-	-	-	103.72	-7.4	-	-	-	103.70	-7.4	-	-	-	103.65	-7.3	-	-	-	103.60	-7.2	-	-	-	103.60	-7.2	-	-	-	103.54	-7.1	-	-	-	103.54	-7.1	-	-	-	103.47	-7.0	-	-	-	103.47	-7.0	-	-	-	103.46	-7.0	-	-	-	103.46	-7.0	-	-	-	103.40	-6.9	-	-	-	103.40	-6.9	-	-	-	103.35	-6.8	-	-	-	103.35	-6.8	-	-	-	103.31	-6.7	-	-	-	103.31	-6.7	-	-	-	103.27	-6.7	-	-	-	103.27	-6.7	-	-	-	103.23	-6.6	-	-	-	103.23	-6.6	-	-	-	103.21	-6.6	-	-	-	103.21	-6.6	-	-	-	103.20	-6.6	-	-	-	103.20	-6.6	-	-	-	103.15	-6.5	-	-	-	103.15	-6.5	-	-	-
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102.40	-5.3	1.94	10.25	10.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.35	-5.2	1.94	10.11	13.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.35	-5.2	2.58	13.50	13.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.31	-5.2	2.58	13.31	16.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.21	-5.0	4.64	23.24	23.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.17	-4.9	4.64	22.91	26.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.17	-4.9	5.37	26.49	26.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.12	-4.9	5.37	26.11	29.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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102.01	-4.7	7.13	33.50	37.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.86	-4.5	10.65	47.71	47.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.81	-4.4	10.65	46.94	51.14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.81	-4.4	11.60	51.14	51.14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.76	-4.3	11.60	50.30	54.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.76	-4.3	12.58	54.56	54.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.71	-4.3	12.58	53.60	58.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.65	-4.2	14.77	61.83	61.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.60	-4.1	14.77	60.73	65.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.24	-3.6	25.15	90.73	90.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.18	-3.5	25.15	88.99	94.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.18	-3.5	26.66	94.34	94.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.13	-3.5	28.23	97.95	97.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-3.4	28.23	96.23	101.18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.79	-3.0	37.67	114.71	121.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.74	-3.0	42.03	125.12	125.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.68	-2.9	42.03	122.30	129.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.68	-2.9	44.34	129.03	129.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.66	-2.9	44.34	127.97	130.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.66	-2.9	45.19	130.43	130.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.36	-2.5	50.00	127.20	151.36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.26	-2.4	50.00	121.81	158.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.16	-2.3	50.00	116.58	165.32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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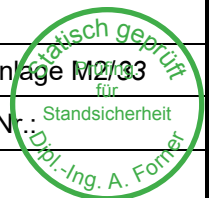
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Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 4 (BS-P)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 14_BS 4_LF4.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.20 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.30 2.14 103.74 102.85 100.66 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.70 0.00 0.34 103.74 103.74 103.74 103.46 103.31 nein 2 18.90 5.48 10.08 103.74 100.85 95.43 93.07 88.22 nein 3 0.65 10.08 13.88 103.74 97.92 88.22 88.88 82.26 nein 4 2.50 2.14 5.48 103.75 103.75 100.68 99.60 95.45 nein 5 74.17 0.34 0.64 103.74 103.60 103.31 103.21 102.94 nein 6 81.33 0.64 0.94 103.74 103.47 102.94 102.95 102.54 nein 7 88.47 0.94 1.24 103.74 103.35 102.54 102.65 102.07 nein 8 95.63 1.24 1.54 103.74 103.23 102.07 102.35 101.60 nein 9 102.78 1.54 1.84 103.74 103.10 101.60 102.06 101.13 nein 10 109.92 1.84 2.14 103.74 102.98 101.13 101.76 100.66 nein Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/31
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																													
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<div>Zusatzdrücke</div> <table><tr><td>Nr.</td><td>e(oben)</td><td>e(unten)</td><td>z(oben)</td><td>z(unten)</td><td>Typ</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>14.00</td><td>106.19</td><td>104.74</td><td>Ständig</td></tr><tr><td>2</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td>Wasserdruck</td></tr></table> <div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <table><tr><td>Nr.</td><td>Tiefe</td><td>M,g,k</td><td>M,q,k</td><td>H,g,k</td><td>H,q,k</td><td>V,g,k</td><td>V,q,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>105.65</td><td>-13.10</td><td>0.00</td><td>0.00</td><td>0.00</td><td>20.50</td><td>0.00</td></tr><tr><td>2</td><td>104.41</td><td>0.00</td><td>0.00</td><td>-89.50</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table> <div>Art des Fußlagers:</div> <div>Profillänge von 9.80 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 488.799 / 803.399 = 0.608$</div> <div>Bettungslager $B_{h,d} = 488.799$ kN/m</div> <div>Erdwiderstand $E_{ph,d} = 803.399$ kN/m</div> <div>Anker und Steifen</div> <div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N,d</td><td>N(g+q+w),k</td><td>N(g+w),k</td><td>Nw,k</td><td>EA</td><td>EI</td><td>N,d'</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-220.05</td><td>-170.17</td><td>-170.17</td><td>-151.63</td><td>3.900E+7</td><td>2.100E+7</td><td>-216.97 Steife</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M,d [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>wx,d</td><td>wy,d</td><td>N,d</td><td>Q,d</td><td>M,d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-9.4</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-9.5</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-9.5</td><td>0.0</td><td>-228.34</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 4\Linkes Ufer\12_BS 4_LF2.vrb eingelesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 103.72 -0.0074</div> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c,k</td><td>d(p)/phi</td><td>d(a)/phi</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.32</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.74</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.62</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table>			Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	14.00	106.19	104.74	Ständig	2	0.00	29.50	105.50	102.55	Wasserdruck	Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	105.65	-13.10	0.00	0.00	0.00	20.50	0.00	2	104.41	0.00	0.00	-89.50	0.00	0.00	0.00	Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-220.05	-170.17	-170.17	-151.63	3.900E+7	2.100E+7	-216.97 Steife	x	y	wx,d	wy,d	N,d	Q,d	M,d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-9.4	0.0	-228.34	0.00	0.00	-7.47	103.72	-9.4	0.0	-228.34	0.00	0.00	-7.47	103.72	-9.4	0.0	-228.34	0.00	0.00	-6.64	103.72	-9.4	0.0	-228.34	0.00	0.00	-5.81	103.72	-9.4	0.0	-228.34	0.00	0.00	-4.98	103.72	-9.4	0.0	-228.34	0.00	0.00	-4.15	103.72	-9.4	0.0	-228.34	0.00	0.00	-3.32	103.72	-9.4	0.0	-228.34	0.00	0.00	-2.49	103.72	-9.4	0.0	-228.34	0.00	0.00	-1.66	103.72	-9.4	0.0	-228.34	0.00	0.00	-0.83	103.72	-9.5	0.0	-228.34	0.00	0.00	0.00	103.72	-9.5	0.0	-228.34	0.00	0.00	Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.32	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.62	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
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<p>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</p> <table border="1"> <thead> <tr> <th>Schicht</th> <th>UK</th> <th>k_{agh}</th> <th>k_{ach}</th> <th>$\phi_{i,k}$</th> <th>δ</th> <th>θ</th> <th>$k_{agh}(40^\circ)$</th> </tr> <tr> <th>[-]</th> <th>[mNHN]</th> <th>[-]</th> <th>[-]</th> <th>[°]</th> <th>[°]</th> <th>[°]</th> <th>[-]</th> </tr> </thead> <tbody> <tr><td>1</td><td>105.32</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr> <tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr> <tr><td>3</td><td>102.62</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr> <tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr> </tbody> </table> <p>Aktive Erddruckkoordinaten ($[g+q], k$) mit Zusatzdrücke</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th>oben</th> <th>unten</th> <th colspan="2">Wasserdruck</th> </tr> <tr> <th>[mNHN]</th> <th>[mNHN]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> </tr> </thead> <tbody> <tr><td>106.200</td><td>106.190</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr> <tr><td>106.190</td><td>105.650</td><td>0.000</td><td>5.214</td><td>0.00</td><td>0.00</td></tr> <tr><td>105.650</td><td>105.500</td><td>5.214</td><td>6.662</td><td>0.00</td><td>0.00</td></tr> <tr><td>105.500</td><td>105.320</td><td>6.662</td><td>8.400</td><td>0.00</td><td>1.80</td></tr> <tr><td>105.320</td><td>105.149</td><td>8.400</td><td>10.052</td><td>1.80</td><td>3.51</td></tr> <tr><td>105.149</td><td>104.740</td><td>10.052</td><td>14.000</td><td>3.51</td><td>7.60</td></tr> <tr><td>104.740</td><td>104.410</td><td>0.000</td><td>0.000</td><td>7.60</td><td>10.90</td></tr> <tr><td>104.410</td><td>104.200</td><td>0.000</td><td>0.000</td><td>10.90</td><td>13.00</td></tr> <tr><td>104.200</td><td>103.750</td><td>0.000</td><td>0.000</td><td>13.00</td><td>17.50</td></tr> <tr><td>103.750</td><td>103.740</td><td>0.000</td><td>0.008</td><td>17.50</td><td>17.60</td></tr> <tr><td>103.740</td><td>103.720</td><td>0.003</td><td>21.811</td><td>17.60</td><td>17.80</td></tr> <tr><td>103.720</td><td>103.599</td><td>21.811</td><td>22.375</td><td>17.80</td><td>19.01</td></tr> <tr><td>103.599</td><td>103.475</td><td>22.375</td><td>39.045</td><td>19.01</td><td>20.25</td></tr> <tr><td>103.475</td><td>103.458</td><td>39.045</td><td>42.525</td><td>20.25</td><td>20.42</td></tr> <tr><td>103.458</td><td>103.351</td><td>42.525</td><td>47.834</td><td>20.42</td><td>21.49</td></tr> <tr><td>103.351</td><td>103.312</td><td>47.834</td><td>51.813</td><td>21.49</td><td>21.88</td></tr> <tr><td>103.312</td><td>103.226</td><td>51.813</td><td>63.421</td><td>21.88</td><td>22.74</td></tr> <tr><td>103.226</td><td>103.208</td><td>63.421</td><td>66.745</td><td>22.74</td><td>22.92</td></tr> <tr><td>103.208</td><td>103.200</td><td>66.745</td><td>67.047</td><td>22.92</td><td>23.00</td></tr> <tr><td>103.200</td><td>103.102</td><td>67.047</td><td>70.969</td><td>23.00</td><td>23.98</td></tr> <tr><td>103.102</td><td>102.978</td><td>70.969</td><td>80.210</td><td>23.98</td><td>25.22</td></tr> <tr><td>102.978</td><td>102.949</td><td>80.210</td><td>83.203</td><td>25.22</td><td>25.51</td></tr> <tr><td>102.949</td><td>102.935</td><td>83.203</td><td>83.260</td><td>25.51</td><td>25.65</td></tr> <tr><td>102.935</td><td>102.854</td><td>83.260</td><td>88.555</td><td>25.65</td><td>26.46</td></tr> <tr><td>102.854</td><td>102.652</td><td>88.555</td><td>105.072</td><td>26.46</td><td>28.48</td></tr> <tr><td>102.652</td><td>102.620</td><td>105.072</td><td>105.246</td><td>28.48</td><td>28.80</td></tr> <tr><td>102.620</td><td>102.550</td><td>76.170</td><td>76.518</td><td>28.80</td><td>29.50</td></tr> <tr><td>102.550</td><td>102.543</td><td>76.518</td><td>76.554</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.543</td><td>102.355</td><td>76.554</td><td>83.559</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.355</td><td>102.166</td><td>83.559</td><td>82.042</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.166</td><td>102.119</td><td>82.042</td><td>81.663</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.119</td><td>102.072</td><td>81.663</td><td>81.284</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.072</td><td>102.057</td><td>81.284</td><td>81.536</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.057</td><td>101.760</td><td>81.536</td><td>74.766</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.760</td><td>101.602</td><td>74.766</td><td>65.529</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.602</td><td>101.184</td><td>65.529</td><td>49.821</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.184</td><td>101.132</td><td>49.821</td><td>47.857</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.132</td><td>100.851</td><td>47.857</td><td>42.472</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.851</td><td>100.682</td><td>42.472</td><td>39.425</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.682</td><td>100.662</td><td>39.425</td><td>39.055</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.662</td><td>100.510</td><td>39.055</td><td>39.865</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.510</td><td>100.156</td><td>39.865</td><td>41.755</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.156</td><td>99.601</td><td>41.755</td><td>44.725</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.601</td><td>99.156</td><td>44.725</td><td>47.006</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.156</td><td>98.168</td><td>47.006</td><td>52.074</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.168</td><td>97.921</td><td>52.074</td><td>53.341</td><td>0.00</td><td>0.00</td></tr> <tr><td>97.921</td><td>97.160</td><td>53.341</td><td>57.263</td><td>0.00</td><td>0.00</td></tr> <tr><td>97.160</td><td>96.399</td><td>57.263</td><td>61.185</td><td>0.00</td><td>0.00</td></tr> <tr><td>96.399</td><td>95.446</td><td>61.185</td><td>66.093</td><td>0.00</td><td>0.00</td></tr> <tr><td>95.446</td><td>95.426</td><td>66.093</td><td>66.202</td><td>0.00</td><td>0.00</td></tr> <tr><td>95.426</td><td>93.071</td><td>66.202</td><td>75.919</td><td>0.00</td><td>0.00</td></tr> <tr><td>93.071</td><td>88.882</td><td>75.919</td><td>87.384</td><td>0.00</td><td>0.00</td></tr> </tbody> </table>			Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.32	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.62	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.200	106.190	0.000	0.000	0.00	0.00	106.190	105.650	0.000	5.214	0.00	0.00	105.650	105.500	5.214	6.662	0.00	0.00	105.500	105.320	6.662	8.400	0.00	1.80	105.320	105.149	8.400	10.052	1.80	3.51	105.149	104.740	10.052	14.000	3.51	7.60	104.740	104.410	0.000	0.000	7.60	10.90	104.410	104.200	0.000	0.000	10.90	13.00	104.200	103.750	0.000	0.000	13.00	17.50	103.750	103.740	0.000	0.008	17.50	17.60	103.740	103.720	0.003	21.811	17.60	17.80	103.720	103.599	21.811	22.375	17.80	19.01	103.599	103.475	22.375	39.045	19.01	20.25	103.475	103.458	39.045	42.525	20.25	20.42	103.458	103.351	42.525	47.834	20.42	21.49	103.351	103.312	47.834	51.813	21.49	21.88	103.312	103.226	51.813	63.421	21.88	22.74	103.226	103.208	63.421	66.745	22.74	22.92	103.208	103.200	66.745	67.047	22.92	23.00	103.200	103.102	67.047	70.969	23.00	23.98	103.102	102.978	70.969	80.210	23.98	25.22	102.978	102.949	80.210	83.203	25.22	25.51	102.949	102.935	83.203	83.260	25.51	25.65	102.935	102.854	83.260	88.555	25.65	26.46	102.854	102.652	88.555	105.072	26.46	28.48	102.652	102.620	105.072	105.246	28.48	28.80	102.620	102.550	76.170	76.518	28.80	29.50	102.550	102.543	76.518	76.554	0.00	0.00	102.543	102.355	76.554	83.559	0.00	0.00	102.355	102.166	83.559	82.042	0.00	0.00	102.166	102.119	82.042	81.663	0.00	0.00	102.119	102.072	81.663	81.284	0.00	0.00	102.072	102.057	81.284	81.536	0.00	0.00	102.057	101.760	81.536	74.766	0.00	0.00	101.760	101.602	74.766	65.529	0.00	0.00	101.602	101.184	65.529	49.821	0.00	0.00	101.184	101.132	49.821	47.857	0.00	0.00	101.132	100.851	47.857	42.472	0.00	0.00	100.851	100.682	42.472	39.425	0.00	0.00	100.682	100.662	39.425	39.055	0.00	0.00	100.662	100.510	39.055	39.865	0.00	0.00	100.510	100.156	39.865	41.755	0.00	0.00	100.156	99.601	41.755	44.725	0.00	0.00	99.601	99.156	44.725	47.006	0.00	0.00	99.156	98.168	47.006	52.074	0.00	0.00	98.168	97.921	52.074	53.341	0.00	0.00	97.921	97.160	53.341	57.263	0.00	0.00	97.160	96.399	57.263	61.185	0.00	0.00	96.399	95.446	61.185	66.093	0.00	0.00	95.446	95.426	66.093	66.202	0.00	0.00	95.426	93.071	66.202	75.919	0.00	0.00	93.071	88.882	75.919	87.384	0.00	0.00
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																																																															
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																																															
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2	103.74	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																																																															
3	102.62	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																																																																															
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																																																															
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																																																																																																	
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106.190	105.650	0.000	5.214	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
105.650	105.500	5.214	6.662	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
105.500	105.320	6.662	8.400	0.00	1.80																																																																																																																																																																																																																																																																																																																																																																																	
105.320	105.149	8.400	10.052	1.80	3.51																																																																																																																																																																																																																																																																																																																																																																																	
105.149	104.740	10.052	14.000	3.51	7.60																																																																																																																																																																																																																																																																																																																																																																																	
104.740	104.410	0.000	0.000	7.60	10.90																																																																																																																																																																																																																																																																																																																																																																																	
104.410	104.200	0.000	0.000	10.90	13.00																																																																																																																																																																																																																																																																																																																																																																																	
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103.750	103.740	0.000	0.008	17.50	17.60																																																																																																																																																																																																																																																																																																																																																																																	
103.740	103.720	0.003	21.811	17.60	17.80																																																																																																																																																																																																																																																																																																																																																																																	
103.720	103.599	21.811	22.375	17.80	19.01																																																																																																																																																																																																																																																																																																																																																																																	
103.599	103.475	22.375	39.045	19.01	20.25																																																																																																																																																																																																																																																																																																																																																																																	
103.475	103.458	39.045	42.525	20.25	20.42																																																																																																																																																																																																																																																																																																																																																																																	
103.458	103.351	42.525	47.834	20.42	21.49																																																																																																																																																																																																																																																																																																																																																																																	
103.351	103.312	47.834	51.813	21.49	21.88																																																																																																																																																																																																																																																																																																																																																																																	
103.312	103.226	51.813	63.421	21.88	22.74																																																																																																																																																																																																																																																																																																																																																																																	
103.226	103.208	63.421	66.745	22.74	22.92																																																																																																																																																																																																																																																																																																																																																																																	
103.208	103.200	66.745	67.047	22.92	23.00																																																																																																																																																																																																																																																																																																																																																																																	
103.200	103.102	67.047	70.969	23.00	23.98																																																																																																																																																																																																																																																																																																																																																																																	
103.102	102.978	70.969	80.210	23.98	25.22																																																																																																																																																																																																																																																																																																																																																																																	
102.978	102.949	80.210	83.203	25.22	25.51																																																																																																																																																																																																																																																																																																																																																																																	
102.949	102.935	83.203	83.260	25.51	25.65																																																																																																																																																																																																																																																																																																																																																																																	
102.935	102.854	83.260	88.555	25.65	26.46																																																																																																																																																																																																																																																																																																																																																																																	
102.854	102.652	88.555	105.072	26.46	28.48																																																																																																																																																																																																																																																																																																																																																																																	
102.652	102.620	105.072	105.246	28.48	28.80																																																																																																																																																																																																																																																																																																																																																																																	
102.620	102.550	76.170	76.518	28.80	29.50																																																																																																																																																																																																																																																																																																																																																																																	
102.550	102.543	76.518	76.554	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.543	102.355	76.554	83.559	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.355	102.166	83.559	82.042	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.166	102.119	82.042	81.663	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.119	102.072	81.663	81.284	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.072	102.057	81.284	81.536	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
102.057	101.760	81.536	74.766	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.760	101.602	74.766	65.529	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.602	101.184	65.529	49.821	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.184	101.132	49.821	47.857	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
101.132	100.851	47.857	42.472	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.851	100.682	42.472	39.425	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.682	100.662	39.425	39.055	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.662	100.510	39.055	39.865	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.510	100.156	39.865	41.755	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
100.156	99.601	41.755	44.725	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
99.601	99.156	44.725	47.006	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
99.156	98.168	47.006	52.074	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
98.168	97.921	52.074	53.341	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
97.921	97.160	53.341	57.263	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
97.160	96.399	57.263	61.185	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
96.399	95.446	61.185	66.093	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
95.446	95.426	66.093	66.202	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
95.426	93.071	66.202	75.919	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
93.071	88.882	75.919	87.384	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																	
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
<div><div><div>88.88288.21687.38489.1850.000.00</div><div>88.21682.25989.185113.4070.000.00</div><div>82.25980.000113.407122.6730.000.00</div></div><div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><div>w(oben)w(unten)z(oben)z(unten)</div><div>[kN/m²][kN/m²][mNHN][mNHN]</div><div>0.000.00106.20102.55</div></div><div><div>Passive Erddruckbeiwerte</div><div>bestimmt nach: DIN 4085:2017</div><div>SchichtUKkpghkpchphi,kdeltatheta</div><div>[-][mNHN][-][-][°][°]</div><div>480.006.0066.05432.500-21.6816.35</div></div><div><div>Passive Erddruckordinaten (Bemessungswerte)</div><div>Teilsicherheit Erdwiderstand = 1.40</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div>vonbisobenunten</div><div>[mNHN][mNHN][kN/m²][kN/m²]</div><div>102.62102.550.000.00</div><div>102.55102.54-11.33-11.62</div><div>102.54102.35-11.62-19.04</div><div>102.35102.17-19.04-26.46</div><div>102.17102.12-26.46-28.32</div><div>102.12102.07-28.32-30.18</div><div>102.07102.06-30.18-30.77</div><div>102.06101.76-30.77-42.50</div><div>101.76101.60-42.50-48.74</div><div>101.60101.18-48.74-65.23</div><div>101.18101.13-65.23-67.30</div><div>101.13100.85-67.30-78.36</div><div>100.85100.68-78.36-85.06</div><div>100.68100.66-85.06-85.85</div><div>100.66100.51-85.85-91.84</div><div>100.51100.16-91.84-105.79</div><div>100.1699.60-105.79-127.72</div><div>99.6099.16-127.72-145.27</div><div>99.1698.17-145.27-184.27</div><div>98.1797.92-184.27-194.02</div><div>97.9297.16-194.02-224.06</div><div>97.1696.40-224.06-254.09</div><div>96.4095.45-254.09-291.68</div><div>95.4595.43-291.68-292.48</div><div>95.4393.07-292.48-385.44</div><div>93.0788.88-385.44-550.75</div><div>88.8888.22-550.75-577.05</div><div>88.2282.26-577.05-812.13</div><div>82.2680.00-812.13-901.29</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div>TiefeNQMA(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>106.200.00.00.0</div><div>106.19-0.20.00.0</div><div>105.65-13.3-1.8-0.3</div><div>105.65-40.9-1.8-18.0</div><div>105.50-44.6-2.9-18.4</div><div>105.32-48.9-4.9-19.0</div><div>105.15-53.0-7.5-20.1</div><div>104.74-62.9-16.8-24.9</div><div>104.41-70.9-21.0-31.1</div><div>104.41-70.9-141.8-31.1</div><div>104.20-75.9-145.2-61.2</div><div>103.75-86.8-154.4-128.6</div><div>103.74-87.0-154.7-130.1</div><div>103.72-87.6-155.7-133.2-228.3</div><div>103.72-87.672.7-133.2</div><div>103.60-91.566.3-124.8</div><div>103.47-95.858.1-117.1</div></div></div>							
Schnitt:		Anlage M2 Schnitt 4L				Seite Anlage M2/34	
Kapitel:		4 LF 4 (BS-P)				Archiv Nr.:	
Vorgang:		Genehmigungsstatik				Projekt-Nr.: 2004-0025	

Statisch geprüft

für

Standssicherheit

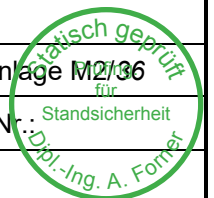
Dipl.-Ing. A. Fortner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div><div>103.46</div><div>-96.4</div><div>56.8</div><div>-116.1</div></div><div><div>103.35</div><div>-100.7</div><div>47.5</div><div>-110.5</div></div><div><div>103.31</div><div>-102.2</div><div>44.0</div><div>-108.7</div></div><div><div>103.23</div><div>-106.0</div><div>35.1</div><div>-105.3</div></div><div><div>103.21</div><div>-106.9</div><div>32.9</div><div>-104.7</div></div><div><div>103.20</div><div>-107.2</div><div>32.1</div><div>-104.4</div></div><div><div>103.10</div><div>-111.9</div><div>20.3</div><div>-101.9</div></div><div><div>102.98</div><div>-118.1</div><div>4.2</div><div>-100.3</div></div><div><div>102.95</div><div>-119.6</div><div>0.3</div><div>-100.2</div></div><div><div>102.94</div><div>-120.4</div><div>-1.7</div><div>-100.3</div></div><div><div>102.85</div><div>-124.7</div><div>-13.5</div><div>-100.9</div></div><div><div>102.65</div><div>-136.3</div><div>-45.9</div><div>-106.8</div></div><div><div>102.62</div><div>-138.2</div><div>-51.4</div><div>-108.3</div></div><div><div>102.55</div><div>-142.6</div><div>-61.0</div><div>-112.3</div></div><div><div>102.54</div><div>-142.9</div><div>-61.7</div><div>-112.7</div></div><div><div>102.35</div><div>-145.1</div><div>-74.9</div><div>-125.6</div></div><div><div>102.17</div><div>-146.0</div><div>-85.7</div><div>-140.7</div></div><div><div>102.12</div><div>-146.0</div><div>-87.8</div><div>-144.8</div></div><div><div>102.07</div><div>-146.0</div><div>-89.8</div><div>-149.0</div></div><div><div>102.06</div><div>-146.0</div><div>-90.3</div><div>-150.3</div></div><div><div>101.76</div><div>-143.8</div><div>-96.5</div><div>-178.4</div></div><div><div>101.60</div><div>-141.4</div><div>-95.1</div><div>-193.6</div></div><div><div>101.18</div><div>-130.9</div><div>-74.3</div><div>-229.8</div></div><div><div>101.13</div><div>-129.2</div><div>-70.1</div><div>-233.5</div></div><div><div>100.85</div><div>-118.1</div><div>-41.8</div><div>-249.4</div></div><div><div>100.68</div><div>-110.4</div><div>-20.9</div><div>-254.8</div></div><div><div>100.66</div><div>-109.4</div><div>-18.4</div><div>-255.2</div></div><div><div>100.51</div><div>-103.0</div><div>-0.8</div><div>-256.6</div></div><div><div>100.16</div><div>-90.4</div><div>33.7</div><div>-250.5</div></div><div><div>99.60</div><div>-76.7</div><div>70.5</div><div>-220.6</div></div><div><div>99.16</div><div>-70.5</div><div>86.9</div><div>-185.2</div></div><div><div>98.17</div><div>-68.5</div><div>89.0</div><div>-94.8</div></div><div><div>97.92</div><div>-70.1</div><div>83.2</div><div>-73.5</div></div><div><div>97.16</div><div>-79.7</div><div>51.6</div><div>-20.9</div></div><div><div>96.40</div><div>-95.6</div><div>0.0</div><div>0.0</div></div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.19</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.65</div><div>-10.4</div><div>-1.4</div><div>-0.3</div><div></div></div><div><div>105.65</div><div>-30.9</div><div>-1.4</div><div>-13.4</div><div></div></div><div><div>105.50</div><div>-33.7</div><div>-2.3</div><div>-13.6</div><div></div></div><div><div>105.32</div><div>-37.2</div><div>-3.8</div><div>-14.2</div><div></div></div><div><div>105.15</div><div>-40.4</div><div>-5.8</div><div>-15.0</div><div></div></div><div><div>104.74</div><div>-48.1</div><div>-13.0</div><div>-18.7</div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-16.1</div><div>-23.5</div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-105.6</div><div>-23.5</div><div></div></div><div><div>104.20</div><div>-58.3</div><div>-108.1</div><div>-45.9</div><div></div></div><div><div>103.75</div><div>-66.9</div><div>-115.0</div><div>-96.1</div><div></div></div><div><div>103.74</div><div>-67.1</div><div>-115.1</div><div>-97.2</div><div></div></div><div><div>103.72</div><div>-67.5</div><div>-115.9</div><div>-99.5</div><div>-170.2</div></div><div><div>103.72</div><div>-67.5</div><div>54.3</div><div>-99.5</div><div></div></div><div><div>103.60</div><div>-70.5</div><div>49.4</div><div>-93.3</div><div></div></div><div><div>103.47</div><div>-73.9</div><div>43.1</div><div>-87.5</div><div></div></div><div><div>103.46</div><div>-74.4</div><div>42.1</div><div>-86.8</div><div></div></div><div><div>103.35</div><div>-77.8</div><div>35.0</div><div>-82.6</div><div></div></div><div><div>103.31</div><div>-79.0</div><div>32.3</div><div>-81.3</div><div></div></div><div><div>103.23</div><div>-81.9</div><div>25.4</div><div>-78.8</div><div></div></div><div><div>103.21</div><div>-82.6</div><div>23.7</div><div>-78.4</div><div></div></div><div><div>103.20</div><div>-82.9</div><div>23.0</div><div>-78.2</div><div></div></div><div><div>103.10</div><div>-86.6</div><div>14.0</div><div>-76.4</div><div></div></div><div><div>102.98</div><div>-91.4</div><div>1.5</div><div>-75.4</div><div></div></div><div><div>102.95</div><div>-92.6</div><div>-1.5</div><div>-75.4</div><div></div></div><div><div>102.94</div><div>-93.2</div><div>-3.1</div><div>-75.4</div><div></div></div><div><div>102.85</div><div>-96.6</div><div>-12.2</div><div>-76.1</div><div></div></div><div><div>102.65</div><div>-105.7</div><div>-37.3</div><div>-81.0</div><div></div></div><div><div>102.62</div><div>-107.2</div><div>-41.5</div><div>-82.2</div><div></div></div><div><div>102.55</div><div>-110.6</div><div>-48.9</div><div>-85.4</div><div></div></div><div><div>102.54</div><div>-110.9</div><div>-49.5</div><div>-85.8</div><div></div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage M2 Schnitt 4L</td><td colspan="2">Seite Anlage M2/35</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">4 LF 4 (BS-P)</td><td colspan="2">Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage M2 Schnitt 4L		Seite Anlage M2/35		Kapitel:		4 LF 4 (BS-P)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage M2 Schnitt 4L		Seite Anlage M2/35																			
Kapitel:		4 LF 4 (BS-P)		Archiv Nr.:																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.35 -112.6 -59.8 -96.1</div><div>102.17 -113.4 -68.3 -108.2</div><div>102.12 -113.4 -70.0 -111.4</div><div>102.07 -113.4 -71.5 -114.7</div><div>102.06 -113.3 -71.9 -115.8</div><div>101.76 -111.6 -76.8 -138.1</div><div>101.60 -109.8 -75.6 -150.2</div><div>101.18 -101.6 -59.2 -179.0</div><div>101.13 -100.2 -55.9 -182.0</div><div>100.85 -91.6 -33.6 -194.7</div><div>100.68 -85.6 -17.1 -199.0</div><div>100.66 -84.8 -15.2 -199.3</div><div>100.51 -79.8 -1.3 -200.6</div><div>100.16 -70.0 25.9 -196.0</div><div>99.60 -59.4 55.0 -172.8</div><div>99.16 -54.5 67.9 -145.2</div><div>98.17 -53.0 69.8 -74.4</div><div>97.92 -54.3 65.3 -57.7</div><div>97.16 -61.8 40.5 -16.4</div><div>96.40 -74.3 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div></div><div><div>106.19</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div><div></div></div><div><div>105.65</div><div>-10.4</div><div>-1.4</div><div>-0.3</div><div></div><div></div></div><div><div>105.65</div><div>-30.9</div><div>-1.4</div><div>-13.4</div><div></div><div></div></div><div><div>105.50</div><div>-33.7</div><div>-2.3</div><div>-13.6</div><div></div><div></div></div><div><div>105.32</div><div>-37.2</div><div>-3.8</div><div>-14.2</div><div></div><div></div></div><div><div>105.15</div><div>-40.4</div><div>-5.8</div><div>-15.0</div><div></div><div></div></div><div><div>104.74</div><div>-48.1</div><div>-13.0</div><div>-18.7</div><div></div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-16.1</div><div>-23.5</div><div></div><div></div></div><div><div>104.41</div><div>-54.4</div><div>-105.6</div><div>-23.5</div><div></div><div></div></div><div><div>104.20</div><div>-58.3</div><div>-108.1</div><div>-45.9</div><div></div><div></div></div><div><div>103.75</div><div>-66.9</div><div>-115.0</div><div>-96.1</div><div></div><div></div></div><div><div>103.74</div><div>-67.1</div><div>-115.1</div><div>-97.2</div><div></div><div></div></div><div><div>103.72</div><div>-67.5</div><div>-115.9</div><div>-99.5</div><div>-170.2</div><div></div></div><div><div>103.72</div><div>-67.5</div><div>54.3</div><div>-99.5</div><div></div><div></div></div><div><div>103.60</div><div>-70.5</div><div>49.4</div><div>-93.3</div><div></div><div></div></div><div><div>103.47</div><div>-73.9</div><div>43.1</div><div>-87.5</div><div></div><div></div></div><div><div>103.46</div><div>-74.4</div><div>42.1</div><div>-86.8</div><div></div><div></div></div><div><div>103.35</div><div>-77.8</div><div>35.0</div><div>-82.6</div><div></div><div></div></div><div><div>103.31</div><div>-79.0</div><div>32.3</div><div>-81.3</div><div></div><div></div></div><div><div>103.23</div><div>-81.9</div><div>25.4</div><div>-78.8</div><div></div><div></div></div><div><div>103.21</div><div>-82.6</div><div>23.7</div><div>-78.4</div><div></div><div></div></div><div><div>103.20</div><div>-82.9</div><div>23.0</div><div>-78.2</div><div></div><div></div></div><div><div>103.10</div><div>-86.6</div><div>14.0</div><div>-76.4</div><div></div><div></div></div><div><div>102.98</div><div>-91.4</div><div>1.5</div><div>-75.4</div><div></div><div></div></div><div><div>102.95</div><div>-92.6</div><div>-1.5</div><div>-75.4</div><div></div><div></div></div><div><div>102.94</div><div>-93.2</div><div>-3.1</div><div>-75.4</div><div></div><div></div></div><div><div>102.85</div><div>-96.6</div><div>-12.2</div><div>-76.1</div><div></div><div></div></div><div><div>102.65</div><div>-105.7</div><div>-37.3</div><div>-81.0</div><div></div><div></div></div><div><div>102.62</div><div>-107.2</div><div>-41.5</div><div>-82.2</div><div></div><div></div></div><div><div>102.55</div><div>-110.6</div><div>-48.9</div><div>-85.4</div><div></div><div></div></div><div><div>102.54</div><div>-110.9</div><div>-49.5</div><div>-85.8</div><div></div><div></div></div><div><div>102.35</div><div>-112.6</div><div>-59.8</div><div>-96.1</div><div></div><div></div></div><div><div>102.17</div><div>-113.4</div><div>-68.3</div><div>-108.2</div><div></div><div></div></div><div><div>102.12</div><div>-113.4</div><div>-70.0</div><div>-111.4</div><div></div><div></div></div><div><div>102.07</div><div>-113.4</div><div>-71.5</div><div>-114.7</div><div></div><div></div></div><div><div>102.06</div><div>-113.3</div><div>-71.9</div><div>-115.8</div><div></div><div></div></div><div><div>101.76</div><div>-111.6</div><div>-76.8</div><div>-138.1</div><div></div><div></div></div><div><div>101.60</div><div>-109.8</div><div>-75.6</div><div>-150.2</div><div></div><div></div></div><div><div>101.18</div><div>-101.6</div><div>-59.2</div><div>-179.0</div><div></div><div></div></div><div><div>101.13</div><div>-100.2</div><div>-55.9</div><div>-182.0</div><div></div><div></div></div><div><div>100.85</div><div>-91.6</div><div>-33.6</div><div>-194.7</div><div></div><div></div></div><div><div>100.68</div><div>-85.6</div><div>-17.1</div><div>-199.0</div><div></div><div></div></div><div><div>100.66</div><div>-84.8</div><div>-15.2</div><div>-199.3</div><div></div><div></div></div><div><div>100.51</div><div>-79.8</div><div>-1.3</div><div>-200.6</div><div></div><div></div></div><div><div>100.16</div><div>-70.0</div><div>25.9</div><div>-196.0</div><div></div><div></div></div><div><div>99.60</div><div>-59.4</div><div>55.0</div><div>-172.8</div><div></div><div></div></div></div></div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/36
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>99.16-54.567.9-145.2</div><div>98.17-53.069.8-74.4</div><div>97.92-54.365.3-57.7</div><div>97.16-61.840.5-16.4</div><div>96.40-74.30.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.19</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.32</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.75</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-110.5</div></div><div><div>103.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.47</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.46</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.31</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.23</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.21</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.20</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.98</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.94</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.62</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.54</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.17</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.12</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.07</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.06</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.76</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.18</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.13</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.68</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.66</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.51</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.17</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>97.92</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>97.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>96.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div></div>					
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Kapitel:		4 LF 4 (BS-P)		Archiv Nr.: 2004-0025	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																									
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.20</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.14</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.46</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.46</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.31</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.31</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.27</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.27</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.21</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.21</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.20	-12.1	-	-	-	106.19	-12.1	-	-	-	106.19	-12.1	-	-	-	106.14	-12.0	-	-	-	105.70	-11.1	-	-	-	105.65	-11.0	-	-	-	105.65	-11.0	-	-	-	105.60	-10.9	-	-	-	105.55	-10.8	-	-	-	105.50	-10.7	-	-	-	105.50	-10.7	-	-	-	105.45	-10.7	-	-	-	105.36	-10.5	-	-	-	105.32	-10.4	-	-	-	105.32	-10.4	-	-	-	105.26	-10.3	-	-	-	105.20	-10.2	-	-	-	105.15	-10.1	-	-	-	105.15	-10.1	-	-	-	105.10	-10.0	-	-	-	104.79	-9.4	-	-	-	104.74	-9.3	-	-	-	104.74	-9.3	-	-	-	104.70	-9.2	-	-	-	104.46	-8.8	-	-	-	104.41	-8.7	-	-	-	104.41	-8.7	-	-	-	104.36	-8.6	-	-	-	104.25	-8.4	-	-	-	104.20	-8.3	-	-	-	104.20	-8.3	-	-	-	104.15	-8.2	-	-	-	103.80	-7.6	-	-	-	103.75	-7.5	-	-	-	103.75	-7.5	-	-	-	103.74	-7.5	-	-	-	103.74	-7.5	-	-	-	103.74	-7.4	-	-	-	103.74	-7.4	-	-	-	103.72	-7.4	-	-	-	103.72	-7.4	-	-	-	103.70	-7.4	-	-	-	103.65	-7.3	-	-	-	103.60	-7.2	-	-	-	103.60	-7.2	-	-	-	103.54	-7.1	-	-	-	103.54	-7.1	-	-	-	103.47	-7.0	-	-	-	103.47	-7.0	-	-	-	103.46	-7.0	-	-	-	103.46	-7.0	-	-	-	103.40	-6.9	-	-	-	103.40	-6.9	-	-	-	103.35	-6.8	-	-	-	103.35	-6.8	-	-	-	103.31	-6.7	-	-	-	103.31	-6.7	-	-	-	103.27	-6.6	-	-	-	103.27	-6.6	-	-	-	103.23	-6.5	-	-	-	103.23	-6.5	-	-	-	103.21	-6.5	-	-	-	103.21	-6.5	-	-	-	103.20	-6.5	-	-	-	103.20	-6.5	-	-	-	103.15	-6.4	-	-	-	103.15	-6.4	-	-	-
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102.70	-5.7	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																												
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102.55	-5.4	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																												
102.55	-5.4	0.00	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.54	-5.4	0.00	0.00	0.00	20.33																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.54	-5.4	3.76	20.33	20.33	20.33																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.50	-5.3	3.76	20.04	23.58	23.58																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.40	-5.2	5.81	30.07	30.07	30.07																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.35	-5.1	5.81	29.63	33.31	33.31																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.35	-5.1	6.54	33.32	33.31	33.31																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.31	-5.0	6.54	32.82	36.56	36.56																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.21	-4.9	8.84	43.06	43.06	43.06																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.17	-4.8	8.84	42.41	46.31	46.31																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.17	-4.8	9.65	46.31	46.31	46.31																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.12	-4.7	9.65	45.60	49.56	49.56																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.12	-4.7	10.49	49.56	49.56	49.56																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.07	-4.7	10.49	48.79	52.81	52.81																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.07	-4.7	11.35	52.81	52.81	52.81																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.06	-4.6	11.35	52.55	53.85	53.85																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.06	-4.6	11.64	53.85	53.85	53.85																																																																																																																																																																																																																																																																																																																																																																																																																																											
102.01	-4.6	11.64	52.96	57.27	57.27																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.81	-4.3	16.69	70.95	70.95	70.95																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.76	-4.2	16.69	69.72	74.38	74.38																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.76	-4.2	17.81	74.38	74.38	74.38																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.71	-4.1	17.81	72.99	78.01	78.01																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.65	-4.0	20.31	81.65	81.65	81.65																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.60	-3.9	20.31	80.10	85.29	85.29																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.60	-3.9	21.62	85.29	85.29	85.29																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.55	-3.9	21.62	83.66	88.90	88.90																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.24	-3.4	32.20	110.55	110.55	110.55																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.18	-3.4	32.20	108.30	114.16	114.16																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.18	-3.4	33.94	114.16	114.16	114.16																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.13	-3.3	33.94	111.82	117.77	117.77																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.13	-3.3	35.75	117.77	117.77	117.77																																																																																																																																																																																																																																																																																																																																																																																																																																											
101.09	-3.2	35.75	115.59	120.99	120.99																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.90	-3.0	44.69	133.91	133.90	133.90																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.85	-2.9	44.69	131.34	137.13	137.13																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.85	-2.9	46.66	137.13	137.13	137.13																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.79	-2.9	46.66	133.93	141.04	141.04																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.74	-2.8	50.00	140.13	144.94	144.94																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.68	-2.7	50.00	136.80	148.85	148.85																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.68	-2.7	50.00	136.80	148.85	148.85																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.66	-2.7	50.00	135.62	150.25	150.25																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.66	-2.7	50.00	135.62	150.25	150.25																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.61	-2.7	50.00	132.72	153.73	153.73																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.56	-2.6	50.00	129.85	157.22	157.22																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.51	-2.5	50.00	127.03	160.71	160.71																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.51	-2.5	50.00	127.03	160.71	160.71																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.46	-2.5	50.00	124.25	164.20	164.20																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.21	-2.2	50.00	111.01	181.65	181.65																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.16	-2.2	50.00	108.49	185.14	185.14																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.16	-2.2	50.00	108.49	185.14	185.14																																																																																																																																																																																																																																																																																																																																																																																																																																											
100.11	-2.1	50.00	106.01	188.63	188.63																																																																																																																																																																																																																																																																																																																																																																																																																																											
Schnitt:		Anlage M2 Schnitt 4L			Seite Anlage M2/39																																																																																																																																																																																																																																																																																																																																																																																																																																											
Kapitel:		4 LF 4 (BS-P)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>99.65 -1.7 50.00 85.58 220.03</div> <div>99.60 -1.7 50.00 83.50 223.52</div> <div>99.60 -1.7 50.00 83.50 223.52</div> <div>99.55 -1.6 50.00 81.51 226.93</div> <div>99.21 -1.4 50.00 68.52 250.82</div> <div>99.16 -1.3 50.00 66.79 254.23</div> <div>99.16 -1.3 50.00 66.79 254.23</div> <div>99.11 -1.3 50.00 65.10 257.64</div> <div>98.22 -0.8 50.00 38.86 319.06</div> <div>98.17 -0.8 50.00 37.60 322.47</div> <div>98.17 -0.8 50.00 37.60 322.47</div> <div>98.12 -0.7 50.00 36.35 325.88</div> <div>97.97 -0.7 50.00 32.69 336.12</div> <div>97.92 -0.6 50.00 31.49 339.53</div> <div>97.92 -0.6 50.00 31.49 339.53</div> <div>97.87 -0.6 50.00 30.28 343.04</div> <div>97.21 -0.3 50.00 15.34 388.59</div> <div>97.16 -0.3 50.00 14.23 392.10</div> <div>97.16 -0.3 50.00 14.23 392.10</div> <div>97.11 -0.3 50.00 13.13 395.60</div> <div>96.45 0.0 50.00 -1.04 441.16</div> <div>96.40 0.0 50.00 -2.12 444.66</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.02451746</div> <div>Theoretischer Fußpunkt = 96.399 m</div> <div>Einbindetiefe tg = 6.15 m</div> <div>Profillänge = 9.80 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div> <div>G,k = 185.44 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 20.50 kN/m</div> <div>Eav,k = 77.19 kN/m (Eah,k = 421.52 kN/m)</div> <div>Bv,k = 152.83</div> <div>Summe V,k = 130.31 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand D = 0.88 m</div> <div>Verhältnisswert (min, max) = 0.00</div> <div>Spitzendruck qc,m = 7.50 MN/m²</div> <div>(gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m²</div> <div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung</div> <div>von bis qs,k [kN/m²] Bezeichnung</div> <div>102.55 96.40 55.00 s3: Flusskies, -sand</div> <div>Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> Rs1,d</div> <div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m</div> <div>Rd = Rb,d + Rs1,d = 1106.66 kN/m</div> <div>Einwirkungen</div> <div>Vd = G,d - G',k + Eav,d + Pv,d = 250.35 - 0.00 + 98.42 + 27.68 = 376.44 kN/m</div> <div>=> µ = Vd / Rd = 376.44 / 1106.66 = 0.34</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage M2 Schnitt 4L		Seite Anlage M2/40
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Anlage N2 Schnitt 5L</div> <div>1 LF 1 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 11_BS 5_LF1.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.15 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.40 2.03 103.75 102.91 100.85 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.00 0.00 0.23 103.75 103.75 103.75 103.56 103.46 nein 2 17.20 3.03 9.83 103.75 102.44 99.28 93.37 88.62 nein 3 69.57 0.23 0.53 103.75 103.65 103.46 103.31 103.08 nein 4 78.52 0.53 0.83 103.75 103.53 103.08 103.06 102.71 nein 5 87.47 0.83 1.13 103.75 103.41 102.71 102.77 102.26 nein 6 96.42 1.13 1.43 103.75 103.28 102.26 102.48 101.79 nein 7 105.38 1.43 1.73 103.75 103.16 101.79 102.18 101.32 nein 8 114.33 1.73 2.03 103.75 103.03 101.32 101.88 100.85 nein 9 0.65 9.83 15.73 103.75 98.11 88.62 86.86 79.38 nein</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.50 106.09 104.75 Ständig</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/19
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 19
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																							
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																									
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																							
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <table><tr><td>Nr.</td><td>Tiefe</td><td>M,g,k</td><td>M,q,k</td><td>H,g,k</td><td>H,q,k</td><td>V,g,k</td><td>V,q,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>104.42</td><td>0.00</td><td>0.00</td><td>-92.70</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table> <div>Art des Fußlagers:</div> <div>Profillänge von 9.75 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>105.75</td><td>103.75</td><td>5.000</td><td>5.000</td></tr><tr><td>103.75</td><td>102.60</td><td>5.000</td><td>5.000</td></tr><tr><td>102.60</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <div>Ausnutzungsgrad $\mu_e = 657.045 / 1696.997 = 0.387$</div> <div>Bettungslager $B_{h,d} = 657.045 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1696.997 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c,k</td><td>d(p)/phi</td><td>d(a)/phi</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.75</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.60</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.75</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.150</td><td>106.090</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.810</td><td>0.000</td><td>2.821</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.750</td><td>2.821</td><td>3.425</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>3.425</td><td>5.944</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.150</td><td>5.944</td><td>9.470</td><td>0.00</td><td>3.50</td></tr><tr><td>105.150</td><td>105.000</td><td>9.470</td><td>10.981</td><td>3.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.750</td><td>10.981</td><td>13.500</td><td>5.00</td><td>5.00</td></tr><tr><td>104.750</td><td>104.420</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.420</td><td>104.111</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.111</td><td>103.750</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>103.750</td><td>103.750</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>103.750</td><td>103.655</td><td>0.000</td><td>21.769</td><td>5.00</td><td>5.00</td></tr><tr><td>103.655</td><td>103.560</td><td>21.769</td><td>39.135</td><td>5.00</td><td>5.00</td></tr><tr><td>103.560</td><td>103.530</td><td>39.135</td><td>37.716</td><td>5.00</td><td>5.00</td></tr><tr><td>103.530</td><td>103.461</td><td>37.716</td><td>40.523</td><td>5.00</td><td>5.00</td></tr><tr><td>103.461</td><td>103.406</td><td>40.523</td><td>45.553</td><td>5.00</td><td>5.00</td></tr><tr><td>103.406</td><td>103.309</td><td>45.553</td><td>60.521</td><td>5.00</td><td>5.00</td></tr><tr><td>103.309</td><td>103.282</td><td>60.521</td><td>60.538</td><td>5.00</td><td>5.00</td></tr><tr><td>103.282</td><td>103.158</td><td>60.538</td><td>66.500</td><td>5.00</td><td>5.00</td></tr><tr><td>103.158</td><td>103.083</td><td>66.500</td><td>72.924</td><td>5.00</td><td>5.00</td></tr><tr><td>103.083</td><td>103.059</td><td>72.924</td><td>76.709</td><td>5.00</td><td>5.00</td></tr></table>						Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	104.42	0.00	0.00	-92.70	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	105.75	103.75	5.000	5.000	103.75	102.60	5.000	5.000	102.60	80.00	50.000	50.000	Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.81	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.75	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.60	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667	Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.81	1.000	1.000	0.000	0.00	40.89	0.179	2	103.75	1.000	1.000	0.000	0.00	40.89	0.179	3	102.60	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.150	106.090	0.000	0.000	0.00	0.00	106.090	105.810	0.000	2.821	0.00	0.00	105.810	105.750	2.821	3.425	0.00	0.00	105.750	105.500	3.425	5.944	0.00	0.00	105.500	105.150	5.944	9.470	0.00	3.50	105.150	105.000	9.470	10.981	3.50	5.00	105.000	104.750	10.981	13.500	5.00	5.00	104.750	104.420	0.000	0.000	5.00	5.00	104.420	104.111	0.000	0.000	5.00	5.00	104.111	103.750	0.000	0.000	5.00	5.00	103.750	103.750	0.000	0.000	5.00	5.00	103.750	103.655	0.000	21.769	5.00	5.00	103.655	103.560	21.769	39.135	5.00	5.00	103.560	103.530	39.135	37.716	5.00	5.00	103.530	103.461	37.716	40.523	5.00	5.00	103.461	103.406	40.523	45.553	5.00	5.00	103.406	103.309	45.553	60.521	5.00	5.00	103.309	103.282	60.521	60.538	5.00	5.00	103.282	103.158	60.538	66.500	5.00	5.00	103.158	103.083	66.500	72.924	5.00	5.00	103.083	103.059	72.924	76.709	5.00	5.00
Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k																																																																																																																																																																																																																																																																																				
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1	105.81	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																																																																				
2	103.75	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																																																																				
3	102.60	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667																																																																																																																																																																																																																																																																																				
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																																																																				
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																				
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2	103.75	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																				
3	102.60	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																				
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104.420	104.111	0.000	0.000	5.00	5.00																																																																																																																																																																																																																																																																																						
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103.309	103.282	60.521	60.538	5.00	5.00																																																																																																																																																																																																																																																																																						
103.282	103.158	60.538	66.500	5.00	5.00																																																																																																																																																																																																																																																																																						
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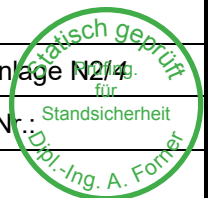
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
103.059	103.033	76.709	77.753	5.00	5.00
103.033	102.909	77.753	87.034	5.00	5.00
102.909	102.775	87.034	99.524	5.00	5.00
102.775	102.706	99.524	100.025	5.00	5.00
102.706	102.600	100.025	106.004	5.00	5.00
102.600	102.477	76.710	81.763	5.00	5.00
102.477	102.438	81.763	81.413	5.00	5.00
102.438	102.262	81.413	80.169	5.00	5.00
102.262	102.180	80.169	81.821	5.00	5.00
102.180	102.130	81.821	80.647	5.00	5.00
102.130	101.883	80.647	74.782	5.00	5.00
101.883	101.792	74.782	69.038	5.00	5.00
101.792	101.322	69.038	49.965	5.00	5.00
101.322	101.165	49.965	46.737	5.00	5.00
101.165	101.113	46.737	45.660	5.00	5.00
101.113	100.851	45.660	40.280	5.00	5.00
100.851	100.143	40.280	44.560	5.00	5.00
100.143	99.284	44.560	49.758	5.00	5.00
99.284	99.137	49.758	50.361	5.00	5.00
99.137	98.106	50.361	54.587	5.00	5.00
98.106	97.102	54.587	58.732	5.00	5.00
97.102	96.399	58.732	61.633	5.00	5.00
96.399	93.368	61.633	74.138	5.00	5.00
93.368	88.625	74.138	87.574	5.00	5.00
88.625	86.865	87.574	94.794	5.00	5.00
86.865	80.000	94.794	122.737	5.00	5.00
Hydrodynamische Wasserdrukspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.15 105.75					
Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 2 103.75 3.034 3.911 22.500 -15.01 23.23 3 102.60 3.034 3.911 22.500 -15.01 23.23 4 80.00 6.006 6.054 32.500 -21.68 16.35					
Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 105.81 105.75 0.00 0.00 105.75 105.50 0.00 -7.93 105.50 105.15 -7.93 -19.04 105.15 105.00 -19.04 -23.80 105.00 104.75 -23.80 -27.77 104.75 104.42 -27.77 -33.01 104.42 104.11 -33.01 -37.91 104.11 103.75 -37.91 -43.64 103.75 103.75 -50.86 -43.64 103.75 103.65 -50.86 -52.37 103.65 103.56 -52.37 -53.87 103.56 103.53 -53.87 -54.34 103.53 103.46 -54.34 -55.45 103.46 103.41 -55.45 -56.31 103.41 103.31 -56.31 -57.85 103.31 103.28 -57.85 -58.28 103.28 103.16 -58.28 -60.26 103.16 103.08 -60.26 -61.43 103.08 103.06 -61.43 -61.83 103.06 103.03 -61.83 -62.23 103.03 102.91 -62.23 -64.20 102.91 102.77 -64.20 -66.34 102.77 102.71 -66.34 -67.42 102.71 102.60 -67.42 -69.11 102.60 102.48 -122.52 -127.73					
Schnitt: Anlage N2 Schnitt 5L				Seite Anlage N2/3	
Kapitel: 1 LF 1 (BS-T)				Archiv Nr.:	
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025		



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.48102.44-127.73-129.39</div><div>102.44102.26-129.39-136.88</div><div>102.26102.18-136.88-140.37</div><div>102.18102.13-140.37-142.47</div><div>102.13101.88-142.47-153.00</div><div>101.88101.79-153.00-156.86</div><div>101.79101.32-156.86-176.85</div><div>101.32101.16-176.85-183.51</div><div>101.16101.11-183.51-185.73</div><div>101.11100.85-185.73-196.84</div><div>100.85100.14-196.84-226.92</div><div>100.1499.28-226.92-263.46</div><div>99.2899.14-263.46-269.72</div><div>99.1498.11-269.72-313.51</div><div>98.1197.10-313.51-356.20</div><div>97.1096.40-356.20-386.08</div><div>96.4093.37-386.08-514.89</div><div>93.3788.62-514.89-716.49</div><div>88.6286.86-716.49-791.31</div><div>86.8680.00-791.31-1083.07</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>106.150.00.00.0</div><div>106.09-1.30.00.0</div><div>105.81-7.4-0.50.0</div><div>105.75-8.7-0.7-0.1</div><div>105.50-13.7-0.5-0.3</div><div>105.15-19.14.10.2</div><div>105.00-20.87.51.1</div><div>104.75-23.412.93.7</div><div>104.42-27.123.99.8</div><div>104.42-27.1-87.39.8</div><div>104.11-30.8-77.9-15.7</div><div>103.75-35.4-67.9-42.0</div><div>103.75-35.4-67.9-42.0</div><div>103.65-36.7-67.8-48.5</div><div>103.56-38.0-68.7-54.9</div><div>103.53-38.4-69.3-57.0</div><div>103.46-39.3-70.8-61.8</div><div>103.41-40.1-72.2-65.7</div><div>103.31-41.5-75.9-72.9</div><div>103.28-41.8-77.2-75.0</div><div>103.16-43.6-83.6-85.0</div><div>103.08-44.7-88.0-91.3</div><div>103.06-45.1-89.6-93.5</div><div>103.03-45.5-91.4-95.8</div><div>102.91-47.3-100.7-107.7</div><div>102.77-49.4-112.6-122.1</div><div>102.71-50.4-119.3-130.0</div><div>102.60-52.1-130.0-143.2</div><div>102.48-43.9-114.7-158.2</div><div>102.44-41.4-110.2-162.6</div><div>102.26-30.7-90.9-180.3</div><div>102.18-26.0-82.7-187.4</div><div>102.13-23.3-78.0-191.4</div><div>101.88-10.6-56.1-208.0</div><div>101.79-6.4-48.4-212.7</div><div>101.3212.3-10.4-226.4</div><div>101.1617.41.5-227.1</div><div>101.1119.05.3-226.9</div><div>100.8526.123.2-223.2</div><div>100.1439.657.2-193.4</div><div>99.2847.171.5-136.3</div><div>99.1447.671.6-125.8</div><div>98.1147.759.2-56.6</div><div>97.1043.029.5-10.8</div><div>96.4037.50.00.0</div></div></div></div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/4
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																
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<tr><td>103.75</td><td>-31.1</td><td>-56.0</td><td>-34.7</td></tr> <tr><td>103.65</td><td>-32.2</td><td>-56.0</td><td>-40.1</td></tr> <tr><td>103.56</td><td>-33.4</td><td>-56.8</td><td>-45.4</td></tr> <tr><td>103.53</td><td>-33.7</td><td>-57.3</td><td>-47.1</td></tr> <tr><td>103.46</td><td>-34.6</td><td>-58.6</td><td>-51.1</td></tr> <tr><td>103.41</td><td>-35.2</td><td>-59.9</td><td>-54.4</td></tr> <tr><td>103.31</td><td>-36.4</td><td>-63.1</td><td>-60.3</td></tr> <tr><td>103.28</td><td>-36.8</td><td>-64.3</td><td>-62.1</td></tr> <tr><td>103.16</td><td>-38.3</td><td>-69.9</td><td>-70.4</td></tr> <tr><td>103.08</td><td>-39.3</td><td>-73.7</td><td>-75.7</td></tr> <tr><td>103.06</td><td>-39.6</td><td>-75.2</td><td>-77.6</td></tr> <tr><td>103.03</td><td>-39.9</td><td>-76.7</td><td>-79.5</td></tr> <tr><td>102.91</td><td>-41.6</td><td>-84.8</td><td>-89.5</td></tr> <tr><td>102.77</td><td>-43.4</td><td>-95.2</td><td>-101.6</td></tr> <tr><td>102.71</td><td>-44.3</td><td>-101.0</td><td>-108.3</td></tr> <tr><td>102.60</td><td>-45.7</td><td>-110.4</td><td>-119.5</td></tr> <tr><td>102.48</td><td>-38.8</td><td>-97.5</td><td>-132.3</td></tr> <tr><td>102.44</td><td>-36.7</td><td>-93.7</td><td>-136.0</td></tr> <tr><td>102.26</td><td>-27.6</td><td>-77.5</td><td>-151.0</td></tr> <tr><td>102.18</td><td>-23.6</td><td>-70.6</td><td>-157.1</td></tr> <tr><td>102.13</td><td>-21.3</td><td>-66.7</td><td>-160.5</td></tr> <tr><td>101.88</td><td>-10.5</td><td>-48.2</td><td>-174.7</td></tr> <tr><td>101.79</td><td>-6.9</td><td>-41.8</td><td>-178.8</td></tr> <tr><td>101.32</td><td>9.1</td><td>-9.6</td><td>-190.8</td></tr> <tr><td>101.16</td><td>13.4</td><td>0.4</td><td>-191.5</td></tr> <tr><td>101.11</td><td>14.8</td><td>3.7</td><td>-191.4</td></tr> <tr><td>100.85</td><td>20.9</td><td>18.9</td><td>-188.4</td></tr> <tr><td>100.14</td><td>32.4</td><td>48.0</td><td>-163.5</td></tr> <tr><td>99.28</td><td>38.9</td><td>60.4</td><td>-115.4</td></tr> <tr><td>99.14</td><td>39.4</td><td>60.5</td><td>-106.5</td></tr> <tr><td>98.11</td><td>39.3</td><td>50.1</td><td>-48.0</td></tr> <tr><td>97.10</td><td>34.9</td><td>25.0</td><td>-9.1</td></tr> <tr><td>96.40</td><td>29.9</td><td>0.0</td><td>0.0</td></tr> </table> <p>Schnittgrößen (g+w,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr> <tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>106.09</td><td>-1.1</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.81</td><td>-6.4</td><td>-0.4</td><td>0.0</td></tr> <tr><td>105.75</td><td>-7.6</td><td>-0.6</td><td>-0.1</td></tr> <tr><td>105.50</td><td>-11.9</td><td>-0.5</td><td>-0.2</td></tr> <tr><td>105.15</td><td>-16.6</td><td>3.4</td><td>0.2</td></tr> <tr><td>105.00</td><td>-18.1</td><td>6.2</td><td>0.9</td></tr> <tr><td>104.75</td><td>-20.5</td><td>10.8</td><td>3.0</td></tr> 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</table>				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.15	0.0	0.0	0.0	106.09	-1.1	0.0	0.0	105.81	-6.4	-0.4	0.0	105.75	-7.6	-0.6	-0.1	105.50	-11.9	-0.5	-0.2	105.15	-16.6	3.4	0.2	105.00	-18.1	6.2	0.9	104.75	-20.5	10.8	3.0	104.42	-23.8	20.1	8.1	104.42	-23.8	-72.6	8.1	104.11	-27.1	-64.5	-13.0	103.75	-31.1	-56.0	-34.7	103.75	-31.1	-56.0	-34.7	103.65	-32.2	-56.0	-40.1	103.56	-33.4	-56.8	-45.4	103.53	-33.7	-57.3	-47.1	103.46	-34.6	-58.6	-51.1	103.41	-35.2	-59.9	-54.4	103.31	-36.4	-63.1	-60.3	103.28	-36.8	-64.3	-62.1	103.16	-38.3	-69.9	-70.4	103.08	-39.3	-73.7	-75.7	103.06	-39.6	-75.2	-77.6	103.03	-39.9	-76.7	-79.5	102.91	-41.6	-84.8	-89.5	102.77	-43.4	-95.2	-101.6	102.71	-44.3	-101.0	-108.3	102.60	-45.7	-110.4	-119.5	102.48	-38.8	-97.5	-132.3	102.44	-36.7	-93.7	-136.0	102.26	-27.6	-77.5	-151.0	102.18	-23.6	-70.6	-157.1	102.13	-21.3	-66.7	-160.5	101.88	-10.5	-48.2	-174.7	101.79	-6.9	-41.8	-178.8	101.32	9.1	-9.6	-190.8	101.16	13.4	0.4	-191.5	101.11	14.8	3.7	-191.4	100.85	20.9	18.9	-188.4	100.14	32.4	48.0	-163.5	99.28	38.9	60.4	-115.4	99.14	39.4	60.5	-106.5	98.11	39.3	50.1	-48.0	97.10	34.9	25.0	-9.1	96.40	29.9	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.15	0.0	0.0	0.0	106.09	-1.1	0.0	0.0	105.81	-6.4	-0.4	0.0	105.75	-7.6	-0.6	-0.1	105.50	-11.9	-0.5	-0.2	105.15	-16.6	3.4	0.2	105.00	-18.1	6.2	0.9	104.75	-20.5	10.8	3.0	104.42	-23.8	20.1	8.1	104.42	-23.8	-72.6	8.1	104.11	-27.1	-64.5	-13.0	103.75	-31.1	-56.0	-34.7	103.75	-31.1	-56.0	-34.7	103.65	-32.2	-56.0	-40.1	103.56	-33.4	-56.8	-45.4	103.53	-33.7	-57.3	-47.1	103.46	-34.6	-58.6	-51.1	103.41	-35.2	-59.9	-54.4	103.31	-36.4	-63.1	-60.3
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<p>Schnittgrößen (q,k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.81</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.15</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.42</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.65</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.56</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.53</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.46</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.31</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.28</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.08</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.03</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.91</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.77</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.60</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.48</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.26</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.18</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.13</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.88</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.79</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.32</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.85</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.14</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.28</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.14</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table>			103.28	-36.8	-64.3	-62.1	103.16	-38.3	-69.9	-70.4	103.08	-39.3	-73.7	-75.7	103.06	-39.6	-75.2	-77.6	103.03	-39.9	-76.7	-79.5	102.91	-41.6	-84.8	-89.5	102.77	-43.4	-95.2	-101.6	102.71	-44.3	-101.0	-108.3	102.60	-45.7	-110.4	-119.5	102.48	-38.8	-97.5	-132.3	102.44	-36.7	-93.7	-136.0	102.26	-27.6	-77.5	-151.0	102.18	-23.6	-70.6	-157.1	102.13	-21.3	-66.7	-160.5	101.88	-10.5	-48.2	-174.7	101.79	-6.9	-41.8	-178.8	101.32	9.1	-9.6	-190.8	101.16	13.4	0.4	-191.5	101.11	14.8	3.7	-191.4	100.85	20.9	18.9	-188.4	100.14	32.4	48.0	-163.5	99.28	38.9	60.4	-115.4	99.14	39.4	60.5	-106.5	98.11	39.3	50.1	-48.0	97.10	34.9	25.0	-9.1	96.40	29.9	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.15	0.0	0.0	0.0	106.09	0.0	0.0	0.0	105.81	0.0	0.0	0.0	105.75	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.15	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.75	0.0	0.0	0.0	104.42	0.0	0.0	0.0	104.11	0.0	0.0	0.0	103.75	0.0	0.0	0.0	103.75	0.0	0.0	0.0	103.65	0.0	0.0	0.0	103.56	0.0	0.0	0.0	103.53	0.0	0.0	0.0	103.46	0.0	0.0	0.0	103.41	0.0	0.0	0.0	103.31	0.0	0.0	0.0	103.28	0.0	0.0	0.0	103.16	0.0	0.0	0.0	103.08	0.0	0.0	0.0	103.06	0.0	0.0	0.0	103.03	0.0	0.0	0.0	102.91	0.0	0.0	0.0	102.77	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.60	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.26	0.0	0.0	0.0	102.18	0.0	0.0	0.0	102.13	0.0	0.0	0.0	101.88	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.32	0.0	0.0	0.0	101.16	0.0	0.0	0.0	101.11	0.0	0.0	0.0	100.85	0.0	0.0	0.0	100.14	0.0	0.0	0.0	99.28	0.0	0.0	0.0	99.14	0.0	0.0	0.0
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>98.110.00.00</div><div>97.100.00.00</div><div>96.400.00.00</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>eph,k</div><div>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>106.15</div><div>-8.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.09</div><div>-8.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.09</div><div>-8.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.04</div><div>-8.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.86</div><div>-8.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.81</div><div>-8.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.81</div><div>-8.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.75</div><div>-8.4</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.75</div><div>-8.4</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.70</div><div>-8.3</div><div>0.00</div><div>0.00</div><div>2.58</div></div><div><div>105.55</div><div>-8.1</div><div>1.28</div><div>10.31</div><div>10.31</div></div><div><div>105.50</div><div>-8.0</div><div>1.28</div><div>10.22</div><div>12.89</div></div><div><div>105.50</div><div>-8.0</div><div>1.61</div><div>12.89</div><div>12.89</div></div><div><div>105.45</div><div>-7.9</div><div>1.61</div><div>12.78</div><div>15.47</div></div><div><div>105.20</div><div>-7.6</div><div>3.75</div><div>28.36</div><div>28.36</div></div><div><div>105.15</div><div>-7.5</div><div>3.75</div><div>28.09</div><div>30.94</div></div><div><div>105.15</div><div>-7.5</div><div>4.13</div><div>30.94</div><div>30.94</div></div><div><div>105.10</div><div>-7.4</div><div>4.13</div><div>30.64</div><div>33.52</div></div><div><div>105.05</div><div>-7.3</div><div>4.92</div><div>36.10</div><div>36.10</div></div><div><div>105.00</div><div>-7.3</div><div>4.92</div><div>35.74</div><div>38.68</div></div><div><div>105.00</div><div>-7.3</div><div>5.00</div><div>36.34</div><div>38.68</div></div><div><div>104.95</div><div>-7.2</div><div>5.00</div><div>35.97</div><div>39.97</div></div><div><div>104.80</div><div>-7.0</div><div>5.00</div><div>34.89</div><div>43.84</div></div><div><div>104.75</div><div>-6.9</div><div>5.00</div><div>34.52</div><div>45.12</div></div><div><div>104.75</div><div>-6.9</div><div>5.00</div><div>34.52</div><div>45.12</div></div><div><div>104.70</div><div>-6.8</div><div>5.00</div><div>34.18</div><div>46.34</div></div><div><div>104.47</div><div>-6.5</div><div>5.00</div><div>32.47</div><div>52.42</div></div><div><div>104.42</div><div>-6.4</div><div>5.00</div><div>32.13</div><div>53.63</div></div><div><div>104.42</div><div>-6.4</div><div>5.00</div><div>32.13</div><div>53.63</div></div><div><div>104.37</div><div>-6.4</div><div>5.00</div><div>31.76</div><div>54.96</div></div><div><div>104.16</div><div>-6.1</div><div>5.00</div><div>30.26</div><div>60.28</div></div><div><div>104.11</div><div>-6.0</div><div>5.00</div><div>29.88</div><div>61.61</div></div><div><div>104.11</div><div>-6.0</div><div>5.00</div><div>29.88</div><div>61.61</div></div><div><div>104.06</div><div>-5.9</div><div>5.00</div><div>29.51</div><div>62.94</div></div><div><div>103.80</div><div>-5.5</div><div>5.00</div><div>27.65</div><div>69.58</div></div><div><div>103.75</div><div>-5.5</div><div>5.00</div><div>27.28</div><div>70.91</div></div><div><div>103.75</div><div>-5.5</div><div>5.00</div><div>27.28</div><div>82.64</div></div><div><div>103.75</div><div>-5.5</div><div>5.00</div><div>27.26</div><div>82.71</div></div><div><div>103.75</div><div>-5.5</div><div>5.00</div><div>27.26</div><div>82.71</div></div><div><div>103.70</div><div>-5.4</div><div>5.00</div><div>26.93</div><div>83.90</div></div><div><div>103.70</div><div>-5.4</div><div>5.00</div><div>26.93</div><div>83.90</div></div><div><div>103.65</div><div>-5.3</div><div>5.00</div><div>26.60</div><div>85.10</div></div><div><div>103.65</div><div>-5.3</div><div>5.00</div><div>26.60</div><div>85.10</div></div><div><div>103.61</div><div>-5.3</div><div>5.00</div><div>26.26</div><div>86.32</div></div><div><div>103.61</div><div>-5.3</div><div>5.00</div><div>26.26</div><div>86.32</div></div><div><div>103.56</div><div>-5.2</div><div>5.00</div><div>25.92</div><div>87.54</div></div><div><div>103.56</div><div>-5.2</div><div>5.00</div><div>25.92</div><div>87.54</div></div><div><div>103.53</div><div>-5.1</div><div>5.00</div><div>25.71</div><div>88.30</div></div><div><div>103.53</div><div>-5.1</div><div>5.00</div><div>25.71</div><div>88.30</div></div><div><div>103.46</div><div>-5.0</div><div>5.00</div><div>25.22</div><div>90.10</div></div><div><div>103.46</div><div>-5.0</div><div>5.00</div><div>25.22</div><div>90.10</div></div><div><div>103.41</div><div>-5.0</div><div>5.00</div><div>24.83</div><div>91.51</div></div><div><div>103.41</div><div>-5.0</div><div>5.00</div><div>24.83</div><div>91.51</div></div><div><div>103.36</div><div>-4.9</div><div>5.00</div><div>24.49</div><div>92.75</div></div><div><div>103.36</div><div>-4.9</div><div>5.00</div><div>24.49</div><div>92.75</div></div><div><div>103.31</div><div>-4.8</div><div>5.00</div><div>24.15</div><div>94.00</div></div><div><div>103.31</div><div>-4.8</div><div>5.00</div><div>24.15</div><div>94.00</div></div><div><div>103.28</div><div>-4.8</div><div>5.00</div><div>23.96</div><div>94.71</div></div><div><div>103.28</div><div>-4.8</div><div>5.00</div><div>23.96</div><div>94.71</div></div><div><div>103.22</div><div>-4.7</div><div>5.00</div><div>23.52</div><div>96.31</div></div><div><div>103.22</div><div>-4.7</div><div>5.00</div><div>23.52</div><div>96.31</div></div><div><div>103.16</div><div>-4.6</div><div>5.00</div><div>23.09</div><div>97.92</div></div><div><div>103.16</div><div>-4.6</div><div>5.00</div><div>23.09</div><div>97.92</div></div></div></div>					
Schnitt:		Anlage N2 Schnitt 5L		Seite Anlage N2/79.	
Kapitel:		1 LF 1 (BS-T)		Archiv Nr.: 179.	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																				
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																				
<table><tr><td>103.08</td><td>-4.5</td><td>5.00</td><td>22.58</td><td>99.83</td></tr><tr><td>103.08</td><td>-4.5</td><td>5.00</td><td>22.58</td><td>99.83</td></tr><tr><td>103.06</td><td>-4.5</td><td>5.00</td><td>22.41</td><td>100.47</td></tr><tr><td>103.06</td><td>-4.5</td><td>5.00</td><td>22.41</td><td>100.47</td></tr><tr><td>103.03</td><td>-4.4</td><td>5.00</td><td>22.24</td><td>101.12</td></tr><tr><td>103.03</td><td>-4.4</td><td>5.00</td><td>22.24</td><td>101.12</td></tr><tr><td>102.97</td><td>-4.4</td><td>5.00</td><td>21.81</td><td>102.72</td></tr><tr><td>102.97</td><td>-4.4</td><td>5.00</td><td>21.81</td><td>102.72</td></tr><tr><td>102.91</td><td>-4.3</td><td>5.00</td><td>21.39</td><td>104.32</td></tr><tr><td>102.91</td><td>-4.3</td><td>5.00</td><td>21.39</td><td>104.32</td></tr><tr><td>102.86</td><td>-4.2</td><td>5.00</td><td>21.09</td><td>105.48</td></tr><tr><td>102.82</td><td>-4.2</td><td>5.00</td><td>20.79</td><td>106.64</td></tr><tr><td>102.77</td><td>-4.1</td><td>5.00</td><td>20.49</td><td>107.80</td></tr><tr><td>102.77</td><td>-4.1</td><td>5.00</td><td>20.49</td><td>107.80</td></tr><tr><td>102.71</td><td>-4.0</td><td>5.00</td><td>20.04</td><td>109.56</td></tr><tr><td>102.71</td><td>-4.0</td><td>5.00</td><td>20.04</td><td>109.56</td></tr><tr><td>102.65</td><td>-3.9</td><td>5.00</td><td>19.69</td><td>110.93</td></tr><tr><td>102.65</td><td>-3.9</td><td>5.00</td><td>19.69</td><td>110.93</td></tr><tr><td>102.60</td><td>-3.9</td><td>5.00</td><td>19.35</td><td>112.30</td></tr><tr><td>102.60</td><td>-3.9</td><td>50.00</td><td>193.46</td><td>199.09</td></tr><tr><td>102.54</td><td>-3.8</td><td>50.00</td><td>189.50</td><td>203.33</td></tr><tr><td>102.54</td><td>-3.8</td><td>50.00</td><td>189.50</td><td>203.33</td></tr><tr><td>102.48</td><td>-3.7</td><td>50.00</td><td>185.58</td><td>207.57</td></tr><tr><td>102.48</td><td>-3.7</td><td>50.00</td><td>185.58</td><td>207.57</td></tr><tr><td>102.44</td><td>-3.7</td><td>50.00</td><td>183.12</td><td>210.25</td></tr><tr><td>102.44</td><td>-3.7</td><td>50.00</td><td>183.12</td><td>210.25</td></tr><tr><td>102.39</td><td>-3.6</td><td>50.00</td><td>180.36</td><td>213.29</td></tr><tr><td>102.31</td><td>-3.5</td><td>50.00</td><td>174.89</td><td>219.38</td></tr><tr><td>102.26</td><td>-3.4</td><td>50.00</td><td>172.20</td><td>222.42</td></tr><tr><td>102.26</td><td>-3.4</td><td>50.00</td><td>172.20</td><td>222.42</td></tr><tr><td>102.22</td><td>-3.4</td><td>50.00</td><td>169.71</td><td>225.26</td></tr><tr><td>102.22</td><td>-3.4</td><td>50.00</td><td>169.71</td><td>225.26</td></tr><tr><td>102.18</td><td>-3.3</td><td>50.00</td><td>167.24</td><td>228.10</td></tr><tr><td>102.18</td><td>-3.3</td><td>50.00</td><td>167.24</td><td>228.10</td></tr><tr><td>102.13</td><td>-3.3</td><td>50.00</td><td>164.29</td><td>231.52</td></tr><tr><td>102.13</td><td>-3.3</td><td>50.00</td><td>164.29</td><td>231.52</td></tr><tr><td>102.08</td><td>-3.2</td><td>50.00</td><td>161.38</td><td>234.94</td></tr><tr><td>101.93</td><td>-3.1</td><td>50.00</td><td>152.85</td><td>245.21</td></tr><tr><td>101.88</td><td>-3.0</td><td>50.00</td><td>150.07</td><td>248.63</td></tr><tr><td>101.88</td><td>-3.0</td><td>50.00</td><td>150.07</td><td>248.63</td></tr><tr><td>101.84</td><td>-3.0</td><td>50.00</td><td>147.56</td><td>251.77</td></tr><tr><td>101.84</td><td>-3.0</td><td>50.00</td><td>147.56</td><td>251.77</td></tr><tr><td>101.79</td><td>-2.9</td><td>50.00</td><td>145.08</td><td>254.90</td></tr><tr><td>101.79</td><td>-2.9</td><td>50.00</td><td>145.08</td><td>254.90</td></tr><tr><td>101.74</td><td>-2.8</td><td>50.00</td><td>142.27</td><td>258.51</td></tr><tr><td>101.37</td><td>-2.5</td><td>50.00</td><td>123.77</td><td>283.77</td></tr><tr><td>101.32</td><td>-2.4</td><td>50.00</td><td>121.30</td><td>287.38</td></tr><tr><td>101.32</td><td>-2.4</td><td>50.00</td><td>121.30</td><td>287.38</td></tr><tr><td>101.27</td><td>-2.4</td><td>50.00</td><td>118.87</td><td>290.99</td></tr><tr><td>101.22</td><td>-2.3</td><td>50.00</td><td>116.49</td><td>294.60</td></tr><tr><td>101.16</td><td>-2.3</td><td>50.00</td><td>114.16</td><td>298.21</td></tr><tr><td>101.16</td><td>-2.3</td><td>50.00</td><td>114.16</td><td>298.21</td></tr><tr><td>101.11</td><td>-2.2</td><td>50.00</td><td>111.87</td><td>301.82</td></tr><tr><td>101.11</td><td>-2.2</td><td>50.00</td><td>111.87</td><td>301.82</td></tr><tr><td>101.06</td><td>-2.2</td><td>50.00</td><td>109.62</td><td>305.43</td></tr><tr><td>100.90</td><td>-2.1</td><td>50.00</td><td>103.15</td><td>316.25</td></tr><tr><td>100.85</td><td>-2.0</td><td>50.00</td><td>101.08</td><td>319.86</td></tr><tr><td>100.85</td><td>-2.0</td><td>50.00</td><td>101.08</td><td>319.86</td></tr><tr><td>100.80</td><td>-2.0</td><td>50.00</td><td>99.11</td><td>323.35</td></tr><tr><td>100.19</td><td>-1.6</td><td>50.00</td><td>78.65</td><td>365.26</td></tr><tr><td>100.14</td><td>-1.5</td><td>50.00</td><td>77.19</td><td>368.75</td></tr><tr><td>100.14</td><td>-1.5</td><td>50.00</td><td>77.19</td><td>368.75</td></tr><tr><td>100.09</td><td>-1.5</td><td>50.00</td><td>75.77</td><td>372.24</td></tr><tr><td>99.33</td><td>-1.2</td><td>50.00</td><td>58.27</td><td>424.63</td></tr><tr><td>99.28</td><td>-1.1</td><td>50.00</td><td>57.33</td><td>428.12</td></tr><tr><td>99.28</td><td>-1.1</td><td>50.00</td><td>57.33</td><td>428.12</td></tr><tr><td>99.23</td><td>-1.1</td><td>50.00</td><td>56.45</td><td>431.51</td></tr><tr><td>99.19</td><td>-1.1</td><td>50.00</td><td>55.59</td><td>434.90</td></tr><tr><td>99.14</td><td>-1.1</td><td>50.00</td><td>54.75</td><td>438.29</td></tr><tr><td>99.14</td><td>-1.1</td><td>50.00</td><td>54.75</td><td>438.29</td></tr><tr><td>99.09</td><td>-1.1</td><td>50.00</td><td>53.93</td><td>441.68</td></tr></table>							103.08	-4.5	5.00	22.58	99.83	103.08	-4.5	5.00	22.58	99.83	103.06	-4.5	5.00	22.41	100.47	103.06	-4.5	5.00	22.41	100.47	103.03	-4.4	5.00	22.24	101.12	103.03	-4.4	5.00	22.24	101.12	102.97	-4.4	5.00	21.81	102.72	102.97	-4.4	5.00	21.81	102.72	102.91	-4.3	5.00	21.39	104.32	102.91	-4.3	5.00	21.39	104.32	102.86	-4.2	5.00	21.09	105.48	102.82	-4.2	5.00	20.79	106.64	102.77	-4.1	5.00	20.49	107.80	102.77	-4.1	5.00	20.49	107.80	102.71	-4.0	5.00	20.04	109.56	102.71	-4.0	5.00	20.04	109.56	102.65	-3.9	5.00	19.69	110.93	102.65	-3.9	5.00	19.69	110.93	102.60	-3.9	5.00	19.35	112.30	102.60	-3.9	50.00	193.46	199.09	102.54	-3.8	50.00	189.50	203.33	102.54	-3.8	50.00	189.50	203.33	102.48	-3.7	50.00	185.58	207.57	102.48	-3.7	50.00	185.58	207.57	102.44	-3.7	50.00	183.12	210.25	102.44	-3.7	50.00	183.12	210.25	102.39	-3.6	50.00	180.36	213.29	102.31	-3.5	50.00	174.89	219.38	102.26	-3.4	50.00	172.20	222.42	102.26	-3.4	50.00	172.20	222.42	102.22	-3.4	50.00	169.71	225.26	102.22	-3.4	50.00	169.71	225.26	102.18	-3.3	50.00	167.24	228.10	102.18	-3.3	50.00	167.24	228.10	102.13	-3.3	50.00	164.29	231.52	102.13	-3.3	50.00	164.29	231.52	102.08	-3.2	50.00	161.38	234.94	101.93	-3.1	50.00	152.85	245.21	101.88	-3.0	50.00	150.07	248.63	101.88	-3.0	50.00	150.07	248.63	101.84	-3.0	50.00	147.56	251.77	101.84	-3.0	50.00	147.56	251.77	101.79	-2.9	50.00	145.08	254.90	101.79	-2.9	50.00	145.08	254.90	101.74	-2.8	50.00	142.27	258.51	101.37	-2.5	50.00	123.77	283.77	101.32	-2.4	50.00	121.30	287.38	101.32	-2.4	50.00	121.30	287.38	101.27	-2.4	50.00	118.87	290.99	101.22	-2.3	50.00	116.49	294.60	101.16	-2.3	50.00	114.16	298.21	101.16	-2.3	50.00	114.16	298.21	101.11	-2.2	50.00	111.87	301.82	101.11	-2.2	50.00	111.87	301.82	101.06	-2.2	50.00	109.62	305.43	100.90	-2.1	50.00	103.15	316.25	100.85	-2.0	50.00	101.08	319.86	100.85	-2.0	50.00	101.08	319.86	100.80	-2.0	50.00	99.11	323.35	100.19	-1.6	50.00	78.65	365.26	100.14	-1.5	50.00	77.19	368.75	100.14	-1.5	50.00	77.19	368.75	100.09	-1.5	50.00	75.77	372.24	99.33	-1.2	50.00	58.27	424.63	99.28	-1.1	50.00	57.33	428.12	99.28	-1.1	50.00	57.33	428.12	99.23	-1.1	50.00	56.45	431.51	99.19	-1.1	50.00	55.59	434.90	99.14	-1.1	50.00	54.75	438.29	99.14	-1.1	50.00	54.75	438.29	99.09	-1.1	50.00	53.93	441.68
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101.16	-2.3	50.00	114.16	298.21																																																																																																																																																																																																																																																																																																																																																																					
101.16	-2.3	50.00	114.16	298.21																																																																																																																																																																																																																																																																																																																																																																					
101.11	-2.2	50.00	111.87	301.82																																																																																																																																																																																																																																																																																																																																																																					
101.11	-2.2	50.00	111.87	301.82																																																																																																																																																																																																																																																																																																																																																																					
101.06	-2.2	50.00	109.62	305.43																																																																																																																																																																																																																																																																																																																																																																					
100.90	-2.1	50.00	103.15	316.25																																																																																																																																																																																																																																																																																																																																																																					
100.85	-2.0	50.00	101.08	319.86																																																																																																																																																																																																																																																																																																																																																																					
100.85	-2.0	50.00	101.08	319.86																																																																																																																																																																																																																																																																																																																																																																					
100.80	-2.0	50.00	99.11	323.35																																																																																																																																																																																																																																																																																																																																																																					
100.19	-1.6	50.00	78.65	365.26																																																																																																																																																																																																																																																																																																																																																																					
100.14	-1.5	50.00	77.19	368.75																																																																																																																																																																																																																																																																																																																																																																					
100.14	-1.5	50.00	77.19	368.75																																																																																																																																																																																																																																																																																																																																																																					
100.09	-1.5	50.00	75.77	372.24																																																																																																																																																																																																																																																																																																																																																																					
99.33	-1.2	50.00	58.27	424.63																																																																																																																																																																																																																																																																																																																																																																					
99.28	-1.1	50.00	57.33	428.12																																																																																																																																																																																																																																																																																																																																																																					
99.28	-1.1	50.00	57.33	428.12																																																																																																																																																																																																																																																																																																																																																																					
99.23	-1.1	50.00	56.45	431.51																																																																																																																																																																																																																																																																																																																																																																					
99.19	-1.1	50.00	55.59	434.90																																																																																																																																																																																																																																																																																																																																																																					
99.14	-1.1	50.00	54.75	438.29																																																																																																																																																																																																																																																																																																																																																																					
99.14	-1.1	50.00	54.75	438.29																																																																																																																																																																																																																																																																																																																																																																					
99.09	-1.1	50.00	53.93	441.68																																																																																																																																																																																																																																																																																																																																																																					
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
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Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig		-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

2 LF 2 (BS-T)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

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Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 5
Datei: 12_BS 5_LF2.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.15 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.00 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	74.40	2.03	103.75	102.91	100.85	nein

Lasten (zweiseitig begrenzt)

Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast
[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]
1	46.00	0.00	0.23	103.75	103.75	103.75	103.56	103.46	nein
2	17.20	3.03	9.83	103.75	102.44	99.28	93.37	88.62	nein
3	69.57	0.23	0.53	103.75	103.65	103.46	103.31	103.08	nein
4	78.52	0.53	0.83	103.75	103.53	103.08	103.06	102.71	nein
5	87.47	0.83	1.13	103.75	103.41	102.71	102.77	102.26	nein
6	96.42	1.13	1.43	103.75	103.28	102.26	102.48	101.79	nein
7	105.38	1.43	1.73	103.75	103.16	101.79	102.18	101.32	nein
8	114.33	1.73	2.03	103.75	103.03	101.32	101.88	100.85	nein
9	0.65	9.83	15.73	103.75	98.11	88.62	86.86	79.38	nein

Steuerparameter = 0.50

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	13.50	106.09	104.75	Ständig

Schnitt:	Anlage N2	Schnitt 5L	Seite Anlage N2/10
Kapitel:	2	LF 2 (BS-T)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M _{g,k}	M _{q,k}	H _{g,k}	H _{q,k}	V _{g,k}	V _{q,k}
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	104.42	0.00	0.00	-92.70	0.00	0.00	0.00

Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.35 m / eaho/eahu = 1.5)

Art des Fußlagers:
Profillänge von 9.75 m fest und Fuß gebettet

Bettungsmodule
von bis ks(oben) ks(unten)
[mNHN] [mNHN] [MN/m³] [MN/m³]
102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 481.296 / 803.985 = 0.599$
Bettungslager $B_{h,d} = 481.296 \text{ kN/m}$
Erddwiderstand $E_{ph,d} = 803.985 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-171.27	-148.40	-148.40	-85.82	6.900E+4	2.100E+7	-189.21

Zusätzlich für Steifen
Steife 1
Vertikallast [kN/m²/m]: 0.00
max M_d [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-8.4	0.0	-174.95	0.00	0.00
-0.90	105.00	-8.6	0.0	-174.95	0.00	0.00
-0.90	105.00	-8.6	0.0	-174.95	0.00	0.00
-0.80	105.00	-8.9	0.0	-174.95	0.00	0.00
-0.70	105.00	-9.1	0.0	-174.95	0.00	0.00
-0.60	105.00	-9.4	0.0	-174.95	0.00	0.00
-0.50	105.00	-9.6	0.0	-174.95	0.00	0.00
-0.40	105.00	-9.9	0.0	-174.95	0.00	0.00
-0.30	105.00	-10.1	0.0	-174.95	0.00	0.00
-0.20	105.00	-10.4	0.0	-174.95	0.00	0.00
-0.10	105.00	-10.6	0.0	-174.95	0.00	0.00
0.00	105.00	-10.9	0.0	-174.95	0.00	0.00


Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 5\Linkes Ufer\11_BS 5_LF1.vrb
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0073

Bodenkennwerte

Schicht	UK	gam _k	gam' _k	phi _k	c _k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.81	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.75	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.60	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage N2	Schnitt 5L	Seite Anlage N2/11
Kapitel:	2	LF 2 (BS-T)	Archiv Nr. 2111
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																			
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																			
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>105.81</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.75</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.60</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></tbody></table> <div>Aktive Erddruckkoordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.150</td><td>106.090</td><td>29.426</td><td>29.426</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.810</td><td>29.426</td><td>29.426</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.500</td><td>29.426</td><td>29.426</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.150</td><td>29.426</td><td>29.426</td><td>0.00</td><td>3.50</td></tr><tr><td>105.150</td><td>105.000</td><td>29.426</td><td>29.426</td><td>3.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.750</td><td>29.426</td><td>29.426</td><td>5.00</td><td>5.00</td></tr><tr><td>104.750</td><td>104.420</td><td>29.426</td><td>29.426</td><td>5.00</td><td>5.00</td></tr><tr><td>104.420</td><td>104.350</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>104.150</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>104.150</td><td>103.750</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.750</td><td>103.655</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.655</td><td>103.560</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.560</td><td>103.530</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.530</td><td>103.461</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.461</td><td>103.406</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.406</td><td>103.309</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.309</td><td>103.282</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.282</td><td>103.158</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.158</td><td>103.150</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.150</td><td>103.083</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.083</td><td>103.059</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.059</td><td>103.033</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>103.033</td><td>102.909</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>102.909</td><td>102.775</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>102.775</td><td>102.706</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>102.706</td><td>102.600</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>102.600</td><td>102.550</td><td>19.618</td><td>19.618</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.477</td><td>78.769</td><td>81.763</td><td>5.00</td><td>5.00</td></tr><tr><td>102.477</td><td>102.438</td><td>81.763</td><td>81.413</td><td>5.00</td><td>5.00</td></tr><tr><td>102.438</td><td>102.262</td><td>81.413</td><td>80.169</td><td>5.00</td><td>5.00</td></tr><tr><td>102.262</td><td>102.180</td><td>80.169</td><td>81.821</td><td>5.00</td><td>5.00</td></tr><tr><td>102.180</td><td>102.130</td><td>81.821</td><td>80.647</td><td>5.00</td><td>5.00</td></tr><tr><td>102.130</td><td>101.883</td><td>80.647</td><td>74.782</td><td>5.00</td><td>5.00</td></tr><tr><td>101.883</td><td>101.837</td><td>74.782</td><td>71.910</td><td>5.00</td><td>5.00</td></tr><tr><td>101.837</td><td>101.792</td><td>71.910</td><td>69.038</td><td>5.00</td><td>5.00</td></tr><tr><td>101.792</td><td>101.322</td><td>69.038</td><td>49.965</td><td>5.00</td><td>5.00</td></tr><tr><td>101.322</td><td>101.113</td><td>49.965</td><td>45.660</td><td>5.00</td><td>5.00</td></tr><tr><td>101.113</td><td>100.851</td><td>45.660</td><td>40.280</td><td>5.00</td><td>5.00</td></tr><tr><td>100.851</td><td>100.143</td><td>40.280</td><td>44.560</td><td>5.00</td><td>5.00</td></tr><tr><td>100.143</td><td>100.093</td><td>44.560</td><td>44.866</td><td>5.00</td><td>5.00</td></tr><tr><td>100.093</td><td>99.284</td><td>44.866</td><td>49.758</td><td>5.00</td><td>5.00</td></tr><tr><td>99.284</td><td>99.137</td><td>49.758</td><td>50.361</td><td>5.00</td><td>5.00</td></tr><tr><td>99.137</td><td>98.106</td><td>50.361</td><td>54.587</td><td>5.00</td><td>5.00</td></tr><tr><td>98.106</td><td>97.102</td><td>54.587</td><td>58.732</td><td>5.00</td><td>5.00</td></tr><tr><td>97.102</td><td>96.399</td><td>58.732</td><td>61.633</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>93.368</td><td>61.633</td><td>74.138</td><td>5.00</td><td>5.00</td></tr><tr><td>93.368</td><td>88.625</td><td>74.138</td><td>87.574</td><td>5.00</td><td>5.00</td></tr><tr><td>88.625</td><td>86.865</td><td>87.574</td><td>94.794</td><td>5.00</td><td>5.00</td></tr><tr><td>86.865</td><td>80.000</td><td>94.794</td><td>122.737</td><td>5.00</td><td>5.00</td></tr></tbody></table>						Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.81	1.000	1.000	0.000	0.00	40.89	0.179	2	103.75	1.000	1.000	0.000	0.00	40.89	0.179	3	102.60	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.150	106.090	29.426	29.426	0.00	0.00	106.090	105.810	29.426	29.426	0.00	0.00	105.810	105.500	29.426	29.426	0.00	0.00	105.500	105.150	29.426	29.426	0.00	3.50	105.150	105.000	29.426	29.426	3.50	5.00	105.000	104.750	29.426	29.426	5.00	5.00	104.750	104.420	29.426	29.426	5.00	5.00	104.420	104.350	19.618	19.618	5.00	5.00	104.350	104.150	19.618	19.618	5.00	5.00	104.150	103.750	19.618	19.618	5.00	5.00	103.750	103.655	19.618	19.618	5.00	5.00	103.655	103.560	19.618	19.618	5.00	5.00	103.560	103.530	19.618	19.618	5.00	5.00	103.530	103.461	19.618	19.618	5.00	5.00	103.461	103.406	19.618	19.618	5.00	5.00	103.406	103.309	19.618	19.618	5.00	5.00	103.309	103.282	19.618	19.618	5.00	5.00	103.282	103.158	19.618	19.618	5.00	5.00	103.158	103.150	19.618	19.618	5.00	5.00	103.150	103.083	19.618	19.618	5.00	5.00	103.083	103.059	19.618	19.618	5.00	5.00	103.059	103.033	19.618	19.618	5.00	5.00	103.033	102.909	19.618	19.618	5.00	5.00	102.909	102.775	19.618	19.618	5.00	5.00	102.775	102.706	19.618	19.618	5.00	5.00	102.706	102.600	19.618	19.618	5.00	5.00	102.600	102.550	19.618	19.618	5.00	5.00	102.550	102.477	78.769	81.763	5.00	5.00	102.477	102.438	81.763	81.413	5.00	5.00	102.438	102.262	81.413	80.169	5.00	5.00	102.262	102.180	80.169	81.821	5.00	5.00	102.180	102.130	81.821	80.647	5.00	5.00	102.130	101.883	80.647	74.782	5.00	5.00	101.883	101.837	74.782	71.910	5.00	5.00	101.837	101.792	71.910	69.038	5.00	5.00	101.792	101.322	69.038	49.965	5.00	5.00	101.322	101.113	49.965	45.660	5.00	5.00	101.113	100.851	45.660	40.280	5.00	5.00	100.851	100.143	40.280	44.560	5.00	5.00	100.143	100.093	44.560	44.866	5.00	5.00	100.093	99.284	44.866	49.758	5.00	5.00	99.284	99.137	49.758	50.361	5.00	5.00	99.137	98.106	50.361	54.587	5.00	5.00	98.106	97.102	54.587	58.732	5.00	5.00	97.102	96.399	58.732	61.633	5.00	5.00	96.399	93.368	61.633	74.138	5.00	5.00	93.368	88.625	74.138	87.574	5.00	5.00	88.625	86.865	87.574	94.794	5.00	5.00	86.865	80.000	94.794	122.737	5.00	5.00
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																																																
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103.282	103.158	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
103.158	103.150	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
103.150	103.083	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
103.083	103.059	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
103.059	103.033	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
103.033	102.909	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.909	102.775	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.775	102.706	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.706	102.600	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.600	102.550	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.550	102.477	78.769	81.763	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.477	102.438	81.763	81.413	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.438	102.262	81.413	80.169	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.262	102.180	80.169	81.821	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.180	102.130	81.821	80.647	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
102.130	101.883	80.647	74.782	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
101.883	101.837	74.782	71.910	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
101.837	101.792	71.910	69.038	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
101.792	101.322	69.038	49.965	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
101.322	101.113	49.965	45.660	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
101.113	100.851	45.660	40.280	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
100.851	100.143	40.280	44.560	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
100.143	100.093	44.560	44.866	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
100.093	99.284	44.866	49.758	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
99.284	99.137	49.758	50.361	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
99.137	98.106	50.361	54.587	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
98.106	97.102	54.587	58.732	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
97.102	96.399	58.732	61.633	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
96.399	93.368	61.633	74.138	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
93.368	88.625	74.138	87.574	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
88.625	86.865	87.574	94.794	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
86.865	80.000	94.794	122.737	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																		
Schnitt:		Anlage N2	Schnitt 5L	Seite Anlage N2/12																																																																																																																																																																																																																																																																																																																																																																			
Kapitel:		2	LF 2 (BS-T)	Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																			

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.15 102.55</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.60 102.55 0.00 0.00 102.55 102.48 0.00 -3.09 102.48 102.44 -3.09 -4.74 102.44 102.26 -4.74 -12.23 102.26 102.18 -12.23 -15.72 102.18 102.13 -15.72 -17.83 102.13 101.88 -17.83 -28.36 101.88 101.84 -28.36 -30.29 101.84 101.79 -30.29 -32.22 101.79 101.32 -32.22 -52.21 101.32 101.11 -52.21 -61.09 101.11 100.85 -61.09 -72.19 100.85 100.14 -72.19 -102.28 100.14 100.09 -102.28 -104.43 100.09 99.28 -104.43 -138.82 99.28 99.14 -138.82 -145.07 99.14 98.11 -145.07 -188.87 98.11 97.10 -188.87 -231.56 97.10 96.40 -231.56 -261.44 96.40 93.37 -261.44 -390.25 93.37 88.62 -390.25 -591.85 88.62 86.86 -591.85 -666.66 86.86 80.00 -666.66 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.15 0.0 0.0 0.0 106.09 -1.3 -2.0 -0.1 105.81 -7.4 -11.5 -2.0 105.50 -14.1 -22.0 -7.1 105.15 -21.8 -34.6 -17.0 105.00 -25.0 -40.4 -22.6 -175.0 105.00 -25.0 134.5 -22.6 104.75 -30.5 124.6 9.8 104.42 -37.6 111.4 48.7 104.42 -37.6 0.2 48.7 104.35 -39.2 -1.8 48.6 104.15 -43.5 -7.5 47.7 103.75 -52.2 -18.9 42.4 103.65 -54.9 -21.7 40.5 103.56 -57.5 -24.4 38.3 103.53 -58.3 -25.2 37.6 103.46 -60.3 -27.2 35.7 103.41 -61.8 -28.8 34.2 103.31 -64.5 -31.5 31.3 103.28 -65.2 -32.3 30.4 103.16 -68.7 -35.9 26.2 103.15 -68.9 -36.1 25.9 103.08 -70.8 -38.0 23.5 103.06 -71.5 -38.7 22.5 103.03 -72.2 -39.4 21.5 102.91 -75.6 -43.0 16.4 102.77 -79.4 -46.8 10.4</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 2113
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.71</div><div>-81.3</div><div>-48.8</div><div>7.1</div></div><div><div>102.60</div><div>-84.2</div><div>-51.8</div><div>1.7</div></div><div><div>102.55</div><div>-85.7</div><div>-53.2</div><div>-0.9</div></div><div><div>102.48</div><div>-89.9</div><div>-60.4</div><div>-5.0</div></div><div><div>102.44</div><div>-90.6</div><div>-64.0</div><div>-7.4</div></div><div><div>102.26</div><div>-93.5</div><div>-79.0</div><div>-20.1</div></div><div><div>102.18</div><div>-94.5</div><div>-85.1</div><div>-26.8</div></div><div><div>102.13</div><div>-95.0</div><div>-88.6</div><div>-31.1</div></div><div><div>101.88</div><div>-96.3</div><div>-102.0</div><div>-54.8</div></div><div><div>101.84</div><div>-96.4</div><div>-103.7</div><div>-59.5</div></div><div><div>101.79</div><div>-96.3</div><div>-105.1</div><div>-64.2</div></div><div><div>101.32</div><div>-92.2</div><div>-104.0</div><div>-114.5</div></div><div><div>101.11</div><div>-88.2</div><div>-95.1</div><div>-135.4</div></div><div><div>100.85</div><div>-81.2</div><div>-77.7</div><div>-158.1</div></div><div><div>100.14</div><div>-52.9</div><div>-6.1</div><div>-188.9</div></div><div><div>100.09</div><div>-50.9</div><div>-1.2</div><div>-189.1</div></div><div><div>99.28</div><div>-26.5</div><div>55.8</div><div>-164.2</div></div><div><div>99.14</div><div>-23.6</div><div>62.0</div><div>-155.5</div></div><div><div>98.11</div><div>-13.6</div><div>75.4</div><div>-80.5</div></div><div><div>97.10</div><div>-19.2</div><div>44.7</div><div>-16.8</div></div><div><div>96.40</div><div>-31.1</div><div>0.0</div><div>0.0</div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>-1.1</div><div>-1.8</div><div>-0.1</div><div></div></div><div><div>105.81</div><div>-6.4</div><div>-10.0</div><div>-1.7</div><div></div></div><div><div>105.50</div><div>-12.3</div><div>-19.1</div><div>-6.2</div><div></div></div><div><div>105.15</div><div>-18.9</div><div>-30.0</div><div>-14.8</div><div></div></div><div><div>105.00</div><div>-21.8</div><div>-35.1</div><div>-19.7</div><div>-148.4</div></div><div><div>105.00</div><div>-21.8</div><div>113.3</div><div>-19.7</div><div></div></div><div><div>104.75</div><div>-26.5</div><div>104.7</div><div>7.6</div><div></div></div><div><div>104.42</div><div>-32.7</div><div>93.3</div><div>40.3</div><div></div></div><div><div>104.42</div><div>-32.7</div><div>0.6</div><div>40.3</div><div></div></div><div><div>104.35</div><div>-34.1</div><div>-1.1</div><div>40.2</div><div></div></div><div><div>104.15</div><div>-37.8</div><div>-6.0</div><div>39.5</div><div></div></div><div><div>103.75</div><div>-45.4</div><div>-15.8</div><div>35.2</div><div></div></div><div><div>103.65</div><div>-47.7</div><div>-18.2</div><div>33.5</div><div></div></div><div><div>103.56</div><div>-50.0</div><div>-20.5</div><div>31.7</div><div></div></div><div><div>103.53</div><div>-50.7</div><div>-21.3</div><div>31.1</div><div></div></div><div><div>103.46</div><div>-52.4</div><div>-23.0</div><div>29.6</div><div></div></div><div><div>103.41</div><div>-53.7</div><div>-24.3</div><div>28.3</div><div></div></div><div><div>103.31</div><div>-56.1</div><div>-26.7</div><div>25.8</div><div></div></div><div><div>103.28</div><div>-56.7</div><div>-27.4</div><div>25.1</div><div></div></div><div><div>103.16</div><div>-59.7</div><div>-30.4</div><div>21.5</div><div></div></div><div><div>103.15</div><div>-59.9</div><div>-30.6</div><div>21.2</div><div></div></div><div><div>103.08</div><div>-61.5</div><div>-32.3</div><div>19.1</div><div></div></div><div><div>103.06</div><div>-62.1</div><div>-32.9</div><div>18.3</div><div></div></div><div><div>103.03</div><div>-62.7</div><div>-33.5</div><div>17.5</div><div></div></div><div><div>102.91</div><div>-65.7</div><div>-36.5</div><div>13.1</div><div></div></div><div><div>102.77</div><div>-69.0</div><div>-39.9</div><div>8.0</div><div></div></div><div><div>102.71</div><div>-70.7</div><div>-41.5</div><div>5.2</div><div></div></div><div><div>102.60</div><div>-73.2</div><div>-44.2</div><div>0.7</div><div></div></div><div><div>102.55</div><div>-74.6</div><div>-45.4</div><div>-1.6</div><div></div></div><div><div>102.48</div><div>-78.2</div><div>-51.6</div><div>-5.1</div><div></div></div><div><div>102.44</div><div>-78.9</div><div>-54.8</div><div>-7.2</div><div></div></div><div><div>102.26</div><div>-81.4</div><div>-67.7</div><div>-18.0</div><div></div></div><div><div>102.18</div><div>-82.2</div><div>-73.1</div><div>-23.8</div><div></div></div><div><div>102.13</div><div>-82.7</div><div>-76.1</div><div>-27.5</div><div></div></div><div><div>101.88</div><div>-83.8</div><div>-87.7</div><div>-47.9</div><div></div></div><div><div>101.84</div><div>-83.9</div><div>-89.2</div><div>-51.9</div><div></div></div><div><div>101.79</div><div>-83.8</div><div>-90.4</div><div>-56.0</div><div></div></div><div><div>101.32</div><div>-80.4</div><div>-89.6</div><div>-99.2</div><div></div></div><div><div>101.11</div><div>-76.9</div><div>-81.9</div><div>-117.2</div><div></div></div><div><div>100.85</div><div>-70.9</div><div>-66.9</div><div>-136.8</div><div></div></div><div><div>100.14</div><div>-46.4</div><div>-5.2</div><div>-163.3</div><div></div></div><div><div>100.09</div><div>-44.6</div><div>-0.9</div><div>-163.5</div><div></div></div><div><div>99.28</div><div>-23.6</div><div>48.3</div><div>-141.9</div><div></div></div><div><div>99.14</div><div>-21.0</div><div>53.6</div><div>-134.4</div><div></div></div><div><div>98.11</div><div>-12.4</div><div>65.1</div><div>-69.5</div><div></div></div></div></div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 14
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																							
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																							
<div><div><div><div>97.10-17.338.6-14.5</div><div>96.40-27.80.00.0</div></div><div><div>Schnittgrößen (g+w,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-1.1</td><td>-1.8</td><td>-0.1</td><td></td></tr><tr><td>105.81</td><td>-6.4</td><td>-10.0</td><td>-1.7</td><td></td></tr><tr><td>105.50</td><td>-12.3</td><td>-19.1</td><td>-6.2</td><td></td></tr><tr><td>105.15</td><td>-18.9</td><td>-30.0</td><td>-14.8</td><td></td></tr><tr><td>105.00</td><td>-21.8</td><td>-35.1</td><td>-19.7</td><td>-148.4</td></tr><tr><td>105.00</td><td>-21.8</td><td>113.3</td><td>-19.7</td><td></td></tr><tr><td>104.75</td><td>-26.5</td><td>104.7</td><td>7.6</td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>93.3</td><td>40.3</td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>0.6</td><td>40.3</td><td></td></tr><tr><td>104.35</td><td>-34.1</td><td>-1.1</td><td>40.2</td><td></td></tr><tr><td>104.15</td><td>-37.8</td><td>-6.0</td><td>39.5</td><td></td></tr><tr><td>103.75</td><td>-45.4</td><td>-15.8</td><td>35.2</td><td></td></tr><tr><td>103.65</td><td>-47.7</td><td>-18.2</td><td>33.5</td><td></td></tr><tr><td>103.56</td><td>-50.0</td><td>-20.5</td><td>31.7</td><td></td></tr><tr><td>103.53</td><td>-50.7</td><td>-21.3</td><td>31.1</td><td></td></tr><tr><td>103.46</td><td>-52.4</td><td>-23.0</td><td>29.6</td><td></td></tr><tr><td>103.41</td><td>-53.7</td><td>-24.3</td><td>28.3</td><td></td></tr><tr><td>103.31</td><td>-56.1</td><td>-26.7</td><td>25.8</td><td></td></tr><tr><td>103.28</td><td>-56.7</td><td>-27.4</td><td>25.1</td><td></td></tr><tr><td>103.16</td><td>-59.7</td><td>-30.4</td><td>21.5</td><td></td></tr><tr><td>103.15</td><td>-59.9</td><td>-30.6</td><td>21.2</td><td></td></tr><tr><td>103.08</td><td>-61.5</td><td>-32.3</td><td>19.1</td><td></td></tr><tr><td>103.06</td><td>-62.1</td><td>-32.9</td><td>18.3</td><td></td></tr><tr><td>103.03</td><td>-62.7</td><td>-33.5</td><td>17.5</td><td></td></tr><tr><td>102.91</td><td>-65.7</td><td>-36.5</td><td>13.1</td><td></td></tr><tr><td>102.77</td><td>-69.0</td><td>-39.9</td><td>8.0</td><td></td></tr><tr><td>102.71</td><td>-70.7</td><td>-41.5</td><td>5.2</td><td></td></tr><tr><td>102.60</td><td>-73.2</td><td>-44.2</td><td>0.7</td><td></td></tr><tr><td>102.55</td><td>-74.6</td><td>-45.4</td><td>-1.6</td><td></td></tr><tr><td>102.48</td><td>-78.2</td><td>-51.6</td><td>-5.1</td><td></td></tr><tr><td>102.44</td><td>-78.9</td><td>-54.8</td><td>-7.2</td><td></td></tr><tr><td>102.26</td><td>-81.4</td><td>-67.7</td><td>-18.0</td><td></td></tr><tr><td>102.18</td><td>-82.2</td><td>-73.1</td><td>-23.8</td><td></td></tr><tr><td>102.13</td><td>-82.7</td><td>-76.1</td><td>-27.5</td><td></td></tr><tr><td>101.88</td><td>-83.8</td><td>-87.7</td><td>-47.9</td><td></td></tr><tr><td>101.84</td><td>-83.9</td><td>-89.2</td><td>-51.9</td><td></td></tr><tr><td>101.79</td><td>-83.8</td><td>-90.4</td><td>-56.0</td><td></td></tr><tr><td>101.32</td><td>-80.4</td><td>-89.6</td><td>-99.2</td><td></td></tr><tr><td>101.11</td><td>-76.9</td><td>-81.9</td><td>-117.2</td><td></td></tr><tr><td>100.85</td><td>-70.9</td><td>-66.9</td><td>-136.8</td><td></td></tr><tr><td>100.14</td><td>-46.4</td><td>-5.2</td><td>-163.3</td><td></td></tr><tr><td>100.09</td><td>-44.6</td><td>-0.9</td><td>-163.5</td><td></td></tr><tr><td>99.28</td><td>-23.6</td><td>48.3</td><td>-141.9</td><td></td></tr><tr><td>99.14</td><td>-21.0</td><td>53.6</td><td>-134.4</td><td></td></tr><tr><td>98.11</td><td>-12.4</td><td>65.1</td><td>-69.5</td><td></td></tr><tr><td>97.10</td><td>-17.3</td><td>38.6</td><td>-14.5</td><td></td></tr><tr><td>96.40</td><td>-27.8</td><td>0.0</td><td>0.0</td><td></td></tr></table></div><div><div><div>Schnittgrößen (q,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.81</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-73.8</td></tr><tr><td>104.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.42</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table></div></div></div></div>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.15	0.0	0.0	0.0		106.09	-1.1	-1.8	-0.1		105.81	-6.4	-10.0	-1.7		105.50	-12.3	-19.1	-6.2		105.15	-18.9	-30.0	-14.8		105.00	-21.8	-35.1	-19.7	-148.4	105.00	-21.8	113.3	-19.7		104.75	-26.5	104.7	7.6		104.42	-32.7	93.3	40.3		104.42	-32.7	0.6	40.3		104.35	-34.1	-1.1	40.2		104.15	-37.8	-6.0	39.5		103.75	-45.4	-15.8	35.2		103.65	-47.7	-18.2	33.5		103.56	-50.0	-20.5	31.7		103.53	-50.7	-21.3	31.1		103.46	-52.4	-23.0	29.6		103.41	-53.7	-24.3	28.3		103.31	-56.1	-26.7	25.8		103.28	-56.7	-27.4	25.1		103.16	-59.7	-30.4	21.5		103.15	-59.9	-30.6	21.2		103.08	-61.5	-32.3	19.1		103.06	-62.1	-32.9	18.3		103.03	-62.7	-33.5	17.5		102.91	-65.7	-36.5	13.1		102.77	-69.0	-39.9	8.0		102.71	-70.7	-41.5	5.2		102.60	-73.2	-44.2	0.7		102.55	-74.6	-45.4	-1.6		102.48	-78.2	-51.6	-5.1		102.44	-78.9	-54.8	-7.2		102.26	-81.4	-67.7	-18.0		102.18	-82.2	-73.1	-23.8		102.13	-82.7	-76.1	-27.5		101.88	-83.8	-87.7	-47.9		101.84	-83.9	-89.2	-51.9		101.79	-83.8	-90.4	-56.0		101.32	-80.4	-89.6	-99.2		101.11	-76.9	-81.9	-117.2		100.85	-70.9	-66.9	-136.8		100.14	-46.4	-5.2	-163.3		100.09	-44.6	-0.9	-163.5		99.28	-23.6	48.3	-141.9		99.14	-21.0	53.6	-134.4		98.11	-12.4	65.1	-69.5		97.10	-17.3	38.6	-14.5		96.40	-27.8	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.15	0.0	0.0	0.0		106.09	0.0	0.0	0.0		105.81	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.15	0.0	0.0	0.0		105.00	0.0	0.0	0.0	-73.8	104.75	0.0	0.0	0.0		104.42	0.0	0.0	0.0		104.35	0.0	0.0	0.0		104.15	0.0	0.0	0.0		103.75	0.0	0.0	0.0		103.65	0.0	0.0	0.0		103.56	0.0	0.0	0.0		<div><div><div>Statisch geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. A. Forner</div></div></div>	Seite Anlage N2/15
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.15</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr></table>						103.53	0.0	0.0	0.0	103.46	0.0	0.0	0.0	103.41	0.0	0.0	0.0	103.31	0.0	0.0	0.0	103.28	0.0	0.0	0.0	103.16	0.0	0.0	0.0	103.15	0.0	0.0	0.0	103.08	0.0	0.0	0.0	103.06	0.0	0.0	0.0	103.03	0.0	0.0	0.0	102.91	0.0	0.0	0.0	102.77	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.60	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.26	0.0	0.0	0.0	102.18	0.0	0.0	0.0	102.13	0.0	0.0	0.0	101.88	0.0	0.0	0.0	101.84	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.32	0.0	0.0	0.0	101.11	0.0	0.0	0.0	100.85	0.0	0.0	0.0	100.14	0.0	0.0	0.0	100.09	0.0	0.0	0.0	99.28	0.0	0.0	0.0	99.14	0.0	0.0	0.0	98.11	0.0	0.0	0.0	97.10	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.15	-11.0	-	-	-	106.09	-10.9	-	-	-	106.09	-10.9	-	-	-	106.04	-10.9	-	-	-	105.86	-10.6	-	-	-	105.81	-10.5	-	-	-	105.81	-10.5	-	-	-	105.76	-10.5	-	-	-	105.55	-10.2	-	-	-	105.50	-10.1	-	-	-	105.50	-10.1	-	-	-	105.45	-10.0	-	-	-	105.20	-9.7	-	-	-	105.15	-9.6	-	-	-	105.15	-9.6	-	-	-	105.10	-9.6	-	-	-	105.05	-9.5	-	-	-	105.00	-9.4	-	-	-	105.00	-9.4	-	-	-	104.95	-9.3	-	-	-	104.80	-9.1	-	-	-	104.75	-9.1	-	-	-	104.75	-9.1	-	-	-	104.70	-9.0	-	-	-	104.47	-8.7	-	-	-	104.42	-8.6	-	-	-	104.42	-8.6	-	-	-	104.35	-8.5	-	-	-	104.35	-8.5	-	-	-	104.30	-8.5	-	-	-	104.20	-8.3	-	-	-	104.15	-8.2	-	-	-	104.15	-8.2	-	-	-
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.10	-8.2	-	-	-	103.80	-7.8	-	-	-	103.75	-7.7	-	-	-	103.75	-7.7	-	-	-	103.75	-7.7	-	-	-	103.70	-7.6	-	-	-	103.65	-7.5	-	-	-	103.65	-7.5	-	-	-	103.65	-7.5	-	-	-	103.61	-7.5	-	-	-	103.56	-7.4	-	-	-	103.56	-7.4	-	-	-	103.53	-7.4	-	-	-	103.53	-7.4	-	-	-	103.46	-7.3	-	-	-	103.46	-7.3	-	-	-	103.41	-7.2	-	-	-	103.41	-7.2	-	-	-	103.36	-7.1	-	-	-	103.36	-7.1	-	-	-	103.31	-7.1	-	-	-	103.31	-7.1	-	-	-	103.28	-7.0	-	-	-	103.28	-7.0	-	-	-	103.22	-6.9	-	-	-	103.22	-6.9	-	-	-	103.16	-6.8	-	-	-	103.16	-6.8	-	-	-	103.15	-6.8	-	-	-	103.15	-6.8	-	-	-	103.08	-6.7	-	-	-	103.08	-6.7	-	-	-	103.06	-6.7	-	-	-	103.06	-6.7	-	-	-	103.03	-6.7	-	-	-	103.03	-6.7	-	-	-	102.97	-6.6	-	-	-	102.97	-6.6	-	-	-	102.91	-6.5	-	-	-	102.91	-6.5	-	-	-	102.86	-6.4	-	-	-	102.82	-6.3	-	-	-	102.77	-6.3	-	-	-	102.77	-6.3	-	-	-	102.71	-6.2	-	-	-	102.71	-6.2	-	-	-	102.65	-6.1	-	-	-	102.65	-6.1	-	-	-	102.60	-6.0	-	-	-	102.60	-6.0	-	-	-	102.55	-5.9	0.00	0.00	0.00	102.55	-5.9	0.00	0.00	0.00	102.48	-5.8	0.00	0.00	5.02	102.48	-5.8	0.86	5.02	5.02	102.44	-5.8	0.86	4.97	7.71	102.44	-5.8	1.33	7.71	7.71	102.39	-5.7	1.33	7.62	10.75	102.31	-5.6	3.01	16.84	16.84	102.26	-5.5	3.01	16.64	19.88	102.26	-5.5	3.60	19.88	19.88	102.22	-5.5	3.60	19.67	22.72	102.22	-5.5	4.16	22.72	22.72	102.18	-5.4	4.16	22.47	25.55	102.18	-5.4	4.73	25.55	25.55	102.13	-5.3	4.73	25.21	28.97	102.13	-5.3	5.44	28.98	28.97	102.08	-5.3	5.44	28.58	32.40	101.93	-5.0	8.46	42.66	42.66	101.88	-5.0	8.46	42.06	46.08	101.88	-5.0	9.27	46.09	46.08	101.84	-4.9	9.27	45.48	49.22
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102.13	-5.3	4.73	25.21	28.97																																																																																																																																																																																																																																																																																																																																																																					
102.13	-5.3	5.44	28.98	28.97																																																																																																																																																																																																																																																																																																																																																																					
102.08	-5.3	5.44	28.58	32.40																																																																																																																																																																																																																																																																																																																																																																					
101.93	-5.0	8.46	42.66	42.66																																																																																																																																																																																																																																																																																																																																																																					
101.88	-5.0	8.46	42.06	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.88	-5.0	9.27	46.09	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.84	-4.9	9.27	45.48	49.22																																																																																																																																																																																																																																																																																																																																																																					
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Kapitel:		2 LF 2 (BS-T)			Archiv Nr.: 2117																																																																																																																																																																																																																																																																																																																																																																				
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																				

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																								
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																								
<table><tr><td>101.84</td><td>-4.9</td><td>10.03</td><td>49.22</td><td>49.22</td></tr><tr><td>101.79</td><td>-4.8</td><td>10.03</td><td>48.57</td><td>52.36</td></tr><tr><td>101.79</td><td>-4.8</td><td>10.81</td><td>52.36</td><td>52.36</td></tr><tr><td>101.74</td><td>-4.8</td><td>10.81</td><td>51.56</td><td>55.97</td></tr><tr><td>101.37</td><td>-4.3</td><td>19.09</td><td>81.24</td><td>81.23</td></tr><tr><td>101.32</td><td>-4.2</td><td>19.09</td><td>79.87</td><td>84.84</td></tr><tr><td>101.32</td><td>-4.2</td><td>20.29</td><td>84.84</td><td>84.84</td></tr><tr><td>101.27</td><td>-4.1</td><td>20.29</td><td>83.40</td><td>88.45</td></tr><tr><td>101.16</td><td>-4.0</td><td>24.10</td><td>95.67</td><td>95.66</td></tr><tr><td>101.11</td><td>-3.9</td><td>24.10</td><td>93.99</td><td>99.27</td></tr><tr><td>101.11</td><td>-3.9</td><td>25.45</td><td>99.28</td><td>99.27</td></tr><tr><td>101.06</td><td>-3.8</td><td>25.45</td><td>97.52</td><td>102.88</td></tr><tr><td>100.90</td><td>-3.6</td><td>31.35</td><td>113.72</td><td>113.71</td></tr><tr><td>100.85</td><td>-3.6</td><td>31.35</td><td>111.62</td><td>117.32</td></tr><tr><td>100.85</td><td>-3.6</td><td>32.96</td><td>117.33</td><td>117.32</td></tr><tr><td>100.80</td><td>-3.5</td><td>32.96</td><td>115.21</td><td>120.81</td></tr><tr><td>100.19</td><td>-2.8</td><td>50.00</td><td>138.87</td><td>162.72</td></tr><tr><td>100.14</td><td>-2.7</td><td>50.00</td><td>136.10</td><td>166.21</td></tr><tr><td>100.14</td><td>-2.7</td><td>50.00</td><td>136.10</td><td>166.21</td></tr><tr><td>100.09</td><td>-2.7</td><td>50.00</td><td>133.36</td><td>169.70</td></tr><tr><td>100.09</td><td>-2.7</td><td>50.00</td><td>133.36</td><td>169.70</td></tr><tr><td>100.04</td><td>-2.6</td><td>50.00</td><td>130.66</td><td>173.19</td></tr><tr><td>99.33</td><td>-1.9</td><td>50.00</td><td>96.51</td><td>222.09</td></tr><tr><td>99.28</td><td>-1.9</td><td>50.00</td><td>94.32</td><td>225.58</td></tr><tr><td>99.28</td><td>-1.9</td><td>50.00</td><td>94.32</td><td>225.58</td></tr><tr><td>99.23</td><td>-1.8</td><td>50.00</td><td>92.22</td><td>228.97</td></tr><tr><td>99.19</td><td>-1.8</td><td>50.00</td><td>90.16</td><td>232.36</td></tr><tr><td>99.14</td><td>-1.8</td><td>50.00</td><td>88.12</td><td>235.74</td></tr><tr><td>99.14</td><td>-1.8</td><td>50.00</td><td>88.12</td><td>235.74</td></tr><tr><td>99.09</td><td>-1.7</td><td>50.00</td><td>86.10</td><td>239.13</td></tr><tr><td>98.16</td><td>-1.0</td><td>50.00</td><td>52.29</td><td>303.52</td></tr><tr><td>98.11</td><td>-1.0</td><td>50.00</td><td>50.70</td><td>306.91</td></tr><tr><td>98.11</td><td>-1.0</td><td>50.00</td><td>50.70</td><td>306.91</td></tr><tr><td>98.06</td><td>-1.0</td><td>50.00</td><td>49.09</td><td>310.38</td></tr><tr><td>97.15</td><td>-0.4</td><td>50.00</td><td>21.82</td><td>372.81</td></tr><tr><td>97.10</td><td>-0.4</td><td>50.00</td><td>20.37</td><td>376.28</td></tr><tr><td>97.10</td><td>-0.4</td><td>50.00</td><td>20.37</td><td>376.28</td></tr><tr><td>97.05</td><td>-0.4</td><td>50.00</td><td>18.92</td><td>379.75</td></tr><tr><td>96.45</td><td>0.0</td><td>50.00</td><td>1.65</td><td>421.37</td></tr><tr><td>96.40</td><td>0.0</td><td>50.00</td><td>0.21</td><td>424.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q].k: -0.03276820 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.75 m</p>			101.84	-4.9	10.03	49.22	49.22	101.79	-4.8	10.03	48.57	52.36	101.79	-4.8	10.81	52.36	52.36	101.74	-4.8	10.81	51.56	55.97	101.37	-4.3	19.09	81.24	81.23	101.32	-4.2	19.09	79.87	84.84	101.32	-4.2	20.29	84.84	84.84	101.27	-4.1	20.29	83.40	88.45	101.16	-4.0	24.10	95.67	95.66	101.11	-3.9	24.10	93.99	99.27	101.11	-3.9	25.45	99.28	99.27	101.06	-3.8	25.45	97.52	102.88	100.90	-3.6	31.35	113.72	113.71	100.85	-3.6	31.35	111.62	117.32	100.85	-3.6	32.96	117.33	117.32	100.80	-3.5	32.96	115.21	120.81	100.19	-2.8	50.00	138.87	162.72	100.14	-2.7	50.00	136.10	166.21	100.14	-2.7	50.00	136.10	166.21	100.09	-2.7	50.00	133.36	169.70	100.09	-2.7	50.00	133.36	169.70	100.04	-2.6	50.00	130.66	173.19	99.33	-1.9	50.00	96.51	222.09	99.28	-1.9	50.00	94.32	225.58	99.28	-1.9	50.00	94.32	225.58	99.23	-1.8	50.00	92.22	228.97	99.19	-1.8	50.00	90.16	232.36	99.14	-1.8	50.00	88.12	235.74	99.14	-1.8	50.00	88.12	235.74	99.09	-1.7	50.00	86.10	239.13	98.16	-1.0	50.00	52.29	303.52	98.11	-1.0	50.00	50.70	306.91	98.11	-1.0	50.00	50.70	306.91	98.06	-1.0	50.00	49.09	310.38	97.15	-0.4	50.00	21.82	372.81	97.10	-0.4	50.00	20.37	376.28	97.10	-0.4	50.00	20.37	376.28	97.05	-0.4	50.00	18.92	379.75	96.45	0.0	50.00	1.65	421.37	96.40	0.0	50.00	0.21	424.84
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Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 22118																																																																																																																																																																																																								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																								

statisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):								
Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_{,k} = 184.50 \text{ kN/m}$</p> <p>$G'_{,k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 78.47 \text{ kN/m}$ ($E_{ah,k} = 428.42 \text{ kN/m}$)</p> <p>$B_{v,k} = 165.47$</p> <p>Summe $V_{,k} = 97.50 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 97.28 bis 93.76 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>96.40</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 96.40 m = $1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 338.25 / 1.40 = 241.61 \text{ kN/m}$</p> <p>$R_{,d} = R_{b,d} + R_{s1,d} = 1106.66 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 221.40 - 0.00 + 90.25 + 0.00 = 311.64 \text{ kN/m}$</p> <p>$\implies \mu = V_{,d} / R_{,d} = 311.64 / 1106.66 = 0.28$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	96.40	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	96.40	55.00	s3: Flussskies, -sand							
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/19								
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025								
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025								

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>3LF 3 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 13_BS 5_LF3.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.15 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 74.40 2.03 103.75 102.91 100.85 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.00 0.00 0.23 103.75 103.75 103.75 103.56 103.46 nein 2 17.20 3.03 9.83 103.75 102.44 99.28 93.37 88.62 nein 3 69.57 0.23 0.53 103.75 103.65 103.46 103.31 103.08 nein 4 78.52 0.53 0.83 103.75 103.53 103.08 103.06 102.71 nein 5 87.47 0.83 1.13 103.75 103.41 102.71 102.77 102.26 nein 6 96.42 1.13 1.43 103.75 103.28 102.26 102.48 101.79 nein 7 105.38 1.43 1.73 103.75 103.16 101.79 102.18 101.32 nein 8 114.33 1.73 2.03 103.75 103.03 101.32 101.88 100.85 nein 9 0.65 9.83 15.73 103.75 98.11 88.62 86.86 79.38 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.50 106.09 104.75 Ständig 2 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/20
Kapitel: 3 LF 3 (BS-T)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.60	-12.80	0.00	0.00	0.00	20.00	0.00
2	104.42	0.00	0.00	-92.70	0.00	0.00	0.00

Art des Fußlagers:
Profillänge von 9.75 m fest und Fuß gebettet

Bettungsmodule
von bis ks(oben) ks(unten)
[mNHN] [mNHN] [MN/m³] [MN/m³]
102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 428.806 / 777.939 = 0.551$
Bettungslager $B_{h,d} = 428.806 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 777.939 \text{ kN/m}$

Anker und Steifen
 $N_{,d}' = \text{Bemessungswert (Steifen) mit BS-P (1.275/1.50)}$
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-221.95	-191.21	-191.21	-154.85	3.900E+7	2.100E+7	-243.79 Steife

Zusätzlich für Steifen
Steife 1
Vertikallast [kN/m²/m]: 0.00
max $M_{,d}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-8.8	0.0	-227.63	0.00	0.00
-7.47	103.72	-8.8	0.0	-227.63	0.00	0.00
-7.47	103.72	-8.8	0.0	-227.63	0.00	0.00
-6.64	103.72	-8.8	0.0	-227.63	0.00	0.00
-5.81	103.72	-8.8	0.0	-227.63	0.00	0.00
-4.98	103.72	-8.8	0.0	-227.63	0.00	0.00
-4.15	103.72	-8.8	0.0	-227.63	0.00	0.00
-3.32	103.72	-8.8	0.0	-227.63	0.00	0.00
-2.49	103.72	-8.8	0.0	-227.63	0.00	0.00
-1.66	103.72	-8.8	0.0	-227.63	0.00	0.00
-0.83	103.72	-8.8	0.0	-227.63	0.00	0.00
0.00	103.72	-8.8	0.0	-227.63	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 5\Linkes Ufer\12_BS 5_LF2.vrb
eingeliesen.


Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0076

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.81	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.75	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.60	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage N2	Schnitt 5L	Seite Anlage N2/21
Kapitel:	3	LF 3 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.81 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.75 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.60 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.150 106.090 0.000 0.000 0.00 0.00</div> <div>106.090 105.810 0.000 2.821 0.00 0.00</div> <div>105.810 105.600 2.821 4.937 0.00 0.00</div> <div>105.600 105.500 4.937 5.944 0.00 0.00</div> <div>105.500 105.150 5.944 9.470 0.00 3.50</div> <div>105.150 104.750 9.470 13.500 3.50 7.50</div> <div>104.750 104.420 0.000 0.000 7.50 10.80</div> <div>104.420 104.100 0.000 0.000 10.80 14.00</div> <div>104.100 103.750 0.000 0.000 14.00 17.50</div> <div>103.750 103.720 0.000 21.491 17.50 17.80</div> <div>103.720 103.655 21.491 21.769 17.80 18.45</div> <div>103.655 103.560 21.769 39.135 18.45 19.40</div> <div>103.560 103.530 39.135 37.716 19.40 19.70</div> <div>103.530 103.461 37.716 40.523 19.70 20.39</div> <div>103.461 103.406 40.523 45.553 20.39 20.94</div> <div>103.406 103.309 45.553 60.521 20.94 21.91</div> <div>103.309 103.282 60.521 60.538 21.91 22.18</div> <div>103.282 103.158 60.538 66.500 22.18 23.42</div> <div>103.158 103.083 66.500 72.924 23.42 24.17</div> <div>103.083 103.059 72.924 76.709 24.17 24.41</div> <div>103.059 103.033 76.709 77.753 24.41 24.67</div> <div>103.033 102.909 77.753 87.034 24.67 25.91</div> <div>102.909 102.775 87.034 99.524 25.91 27.25</div> <div>102.775 102.706 99.524 100.025 27.25 27.94</div> <div>102.706 102.600 100.025 106.004 27.94 29.00</div> <div>102.600 102.550 76.710 78.769 29.00 29.50</div> <div>102.550 102.477 78.769 81.763 0.00 0.00</div> <div>102.477 102.438 81.763 81.413 0.00 0.00</div> <div>102.438 102.262 81.413 80.169 0.00 0.00</div> <div>102.262 102.180 80.169 81.821 0.00 0.00</div> <div>102.180 102.130 81.821 80.647 0.00 0.00</div> <div>102.130 101.883 80.647 74.782 0.00 0.00</div> <div>101.883 101.837 74.782 71.910 0.00 0.00</div> <div>101.837 101.792 71.910 69.038 0.00 0.00</div> <div>101.792 101.322 69.038 49.965 0.00 0.00</div> <div>101.322 101.113 49.965 45.660 0.00 0.00</div> <div>101.113 100.851 45.660 40.280 0.00 0.00</div> <div>100.851 100.346 40.280 43.337 0.00 0.00</div> <div>100.346 100.143 43.337 44.560 0.00 0.00</div> <div>100.143 99.284 44.560 49.758 0.00 0.00</div> <div>99.284 99.137 49.758 50.361 0.00 0.00</div> <div>99.137 98.106 50.361 54.587 0.00 0.00</div> <div>98.106 97.102 54.587 58.732 0.00 0.00</div> <div>97.102 96.399 58.732 61.633 0.00 0.00</div> <div>96.399 93.368 61.633 74.138 0.00 0.00</div> <div>93.368 88.625 74.138 87.574 0.00 0.00</div> <div>88.625 86.865 87.574 94.794 0.00 0.00</div> <div>86.865 80.000 94.794 122.737 0.00 0.00</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/22
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.15 102.55</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.60 102.55 0.00 0.00 102.55 102.48 0.00 -3.09 102.48 102.44 -3.09 -4.74 102.44 102.26 -4.74 -12.23 102.26 102.18 -12.23 -15.72 102.18 102.13 -15.72 -17.83 102.13 101.88 -17.83 -28.36 101.88 101.84 -28.36 -30.29 101.84 101.79 -30.29 -32.22 101.79 101.32 -32.22 -52.21 101.32 101.11 -52.21 -61.09 101.11 100.85 -61.09 -72.19 100.85 100.35 -72.19 -93.69 100.35 100.14 -93.69 -102.28 100.14 99.28 -102.28 -138.82 99.28 99.14 -138.82 -145.07 99.14 98.11 -145.07 -188.87 98.11 97.10 -188.87 -231.56 97.10 96.40 -231.56 -261.44 96.40 93.37 -261.44 -390.25 93.37 88.62 -390.25 -591.85 88.62 86.86 -591.85 -666.66 86.86 80.00 -666.66 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.15 0.0 0.0 0.0 106.09 -1.3 0.0 0.0 105.81 -7.4 -0.5 0.0 105.60 -12.0 -1.4 -0.2 105.60 -36.0 -1.4 -15.6 105.50 -38.1 -2.0 -15.8 105.15 -45.8 -5.9 -17.0 104.75 -54.5 -13.8 -20.8 104.42 -61.6 -17.4 -26.0 104.42 -61.6 -128.6 -26.0 104.10 -68.6 -133.4 -67.9 103.75 -76.2 -140.0 -115.7 103.72 -77.1 -141.4 -119.9 -227.6 103.72 -77.1 86.3 -119.9 103.65 -78.9 83.2 -114.3 103.56 -81.9 77.8 -106.7 103.53 -82.9 75.8 -104.4 103.46 -85.2 70.9 -99.3 103.41 -87.1 66.9 -95.6 103.31 -90.8 58.5 -89.5 103.28 -91.9 55.9 -87.9 103.16 -97.1 43.4 -81.7 103.08 -100.3 35.3 -78.8 103.06 -101.4 32.5 -78.0 103.03 -102.5 29.5 -77.2 102.91 -108.4 13.9 -74.5 102.77 -115.2 -4.8 -73.8</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/23
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



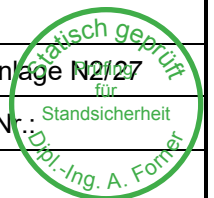
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>102.71</div><div>-118.8</div><div>-14.9</div><div>-74.5</div></div><div><div>102.60</div><div>-124.5</div><div>-31.1</div><div>-76.9</div></div><div><div>102.55</div><div>-127.3</div><div>-37.3</div><div>-78.7</div></div><div><div>102.48</div><div>-131.5</div><div>-44.1</div><div>-81.6</div></div><div><div>102.44</div><div>-132.2</div><div>-47.5</div><div>-83.4</div></div><div><div>102.26</div><div>-135.1</div><div>-61.4</div><div>-93.0</div></div><div><div>102.18</div><div>-136.1</div><div>-67.0</div><div>-98.3</div></div><div><div>102.13</div><div>-136.6</div><div>-70.2</div><div>-101.7</div></div><div><div>101.88</div><div>-138.0</div><div>-82.3</div><div>-120.7</div></div><div><div>101.84</div><div>-138.0</div><div>-83.7</div><div>-124.5</div></div><div><div>101.79</div><div>-138.0</div><div>-84.8</div><div>-128.3</div></div><div><div>101.32</div><div>-133.9</div><div>-81.3</div><div>-168.4</div></div><div><div>101.11</div><div>-129.9</div><div>-71.3</div><div>-184.5</div></div><div><div>100.85</div><div>-123.0</div><div>-52.6</div><div>-200.8</div></div><div><div>100.35</div><div>-104.1</div><div>-2.0</div><div>-215.1</div></div><div><div>100.14</div><div>-96.8</div><div>16.9</div><div>-213.5</div></div><div><div>99.28</div><div>-76.3</div><div>68.5</div><div>-173.6</div></div><div><div>99.14</div><div>-74.3</div><div>73.1</div><div>-163.2</div></div><div><div>98.11</div><div>-69.7</div><div>78.4</div><div>-81.3</div></div><div><div>97.10</div><div>-79.0</div><div>44.4</div><div>-16.6</div></div><div><div>96.40</div><div>-92.4</div><div>0.0</div><div>0.0</div></div></div></div> <div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>-1.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.81</div><div>-6.4</div><div>-0.4</div><div>0.0</div><div></div></div><div><div>105.60</div><div>-10.4</div><div>-1.2</div><div>-0.2</div><div></div></div><div><div>105.60</div><div>-30.4</div><div>-1.2</div><div>-13.0</div><div></div></div><div><div>105.50</div><div>-32.3</div><div>-1.8</div><div>-13.1</div><div></div></div><div><div>105.15</div><div>-38.9</div><div>-5.1</div><div>-14.3</div><div></div></div><div><div>104.75</div><div>-46.5</div><div>-11.9</div><div>-17.5</div><div></div></div><div><div>104.42</div><div>-52.7</div><div>-14.9</div><div>-21.9</div><div></div></div><div><div>104.42</div><div>-52.7</div><div>-107.6</div><div>-21.9</div><div></div></div><div><div>104.10</div><div>-58.8</div><div>-111.5</div><div>-57.0</div><div></div></div><div><div>103.75</div><div>-65.4</div><div>-117.1</div><div>-96.9</div><div></div></div><div><div>103.72</div><div>-66.1</div><div>-118.2</div><div>-100.5</div><div>-191.2</div></div><div><div>103.72</div><div>-66.1</div><div>73.0</div><div>-100.5</div><div></div></div><div><div>103.65</div><div>-67.8</div><div>70.4</div><div>-95.8</div><div></div></div><div><div>103.56</div><div>-70.3</div><div>65.7</div><div>-89.3</div><div></div></div><div><div>103.53</div><div>-71.2</div><div>64.0</div><div>-87.4</div><div></div></div><div><div>103.46</div><div>-73.2</div><div>59.9</div><div>-83.1</div><div></div></div><div><div>103.41</div><div>-74.9</div><div>56.4</div><div>-79.9</div><div></div></div><div><div>103.31</div><div>-78.1</div><div>49.2</div><div>-74.8</div><div></div></div><div><div>103.28</div><div>-79.1</div><div>46.9</div><div>-73.5</div><div></div></div><div><div>103.16</div><div>-83.5</div><div>36.2</div><div>-68.3</div><div></div></div><div><div>103.08</div><div>-86.3</div><div>29.3</div><div>-65.8</div><div></div></div><div><div>103.06</div><div>-87.3</div><div>26.8</div><div>-65.2</div><div></div></div><div><div>103.03</div><div>-88.3</div><div>24.2</div><div>-64.5</div><div></div></div><div><div>102.91</div><div>-93.4</div><div>10.9</div><div>-62.3</div><div></div></div><div><div>102.77</div><div>-99.3</div><div>-5.3</div><div>-61.9</div><div></div></div><div><div>102.71</div><div>-102.4</div><div>-14.0</div><div>-62.6</div><div></div></div><div><div>102.60</div><div>-107.4</div><div>-27.9</div><div>-64.8</div><div></div></div><div><div>102.55</div><div>-109.9</div><div>-33.3</div><div>-66.3</div><div></div></div><div><div>102.48</div><div>-113.5</div><div>-39.1</div><div>-69.0</div><div></div></div><div><div>102.44</div><div>-114.2</div><div>-42.1</div><div>-70.5</div><div></div></div><div><div>102.26</div><div>-116.7</div><div>-54.2</div><div>-79.0</div><div></div></div><div><div>102.18</div><div>-117.5</div><div>-59.1</div><div>-83.7</div><div></div></div><div><div>102.13</div><div>-118.0</div><div>-61.9</div><div>-86.7</div><div></div></div><div><div>101.88</div><div>-119.1</div><div>-72.3</div><div>-103.4</div><div></div></div><div><div>101.84</div><div>-119.2</div><div>-73.6</div><div>-106.7</div><div></div></div><div><div>101.79</div><div>-119.2</div><div>-74.6</div><div>-110.1</div><div></div></div><div><div>101.32</div><div>-115.7</div><div>-71.4</div><div>-145.4</div><div></div></div><div><div>101.11</div><div>-112.2</div><div>-62.7</div><div>-159.4</div><div></div></div><div><div>100.85</div><div>-106.2</div><div>-46.4</div><div>-173.8</div><div></div></div><div><div>100.35</div><div>-89.8</div><div>-2.2</div><div>-186.5</div><div></div></div><div><div>100.14</div><div>-83.5</div><div>14.3</div><div>-185.3</div><div></div></div><div><div>99.28</div><div>-65.8</div><div>59.3</div><div>-150.9</div><div></div></div><div><div>99.14</div><div>-64.0</div><div>63.4</div><div>-141.8</div><div></div></div><div><div>98.11</div><div>-60.1</div><div>68.2</div><div>-70.7</div><div></div></div></div> <div><div>Schnitt:</div><div>Anlage N2</div><div>Schnitt 5L</div></div> <div><div>Seite Anlage</div><div>N2/24</div></div> <div><div>Kapitel:</div><div>3</div><div>LF 3 (BS-T)</div></div> <div><div>Archiv Nr.:</div><div></div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div></div> <div><div>Projekt-Nr.:</div><div>2004-0025</div></div> <div><div>Statisch geprüft für Standsicherheit</div><div>Dipl.-Ing. A. Forner</div></div>					



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																							
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																							
<div><div><div><div>97.10-68.338.6-14.4</div><div>96.40-79.90.00.0</div></div><div><div>Schnittgrößen (g+w,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-1.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.81</td><td>-6.4</td><td>-0.4</td><td>0.0</td><td></td></tr><tr><td>105.60</td><td>-10.4</td><td>-1.2</td><td>-0.2</td><td></td></tr><tr><td>105.60</td><td>-30.4</td><td>-1.2</td><td>-13.0</td><td></td></tr><tr><td>105.50</td><td>-32.3</td><td>-1.8</td><td>-13.1</td><td></td></tr><tr><td>105.15</td><td>-38.9</td><td>-5.1</td><td>-14.3</td><td></td></tr><tr><td>104.75</td><td>-46.5</td><td>-11.9</td><td>-17.5</td><td></td></tr><tr><td>104.42</td><td>-52.7</td><td>-14.9</td><td>-21.9</td><td></td></tr><tr><td>104.42</td><td>-52.7</td><td>-107.6</td><td>-21.9</td><td></td></tr><tr><td>104.10</td><td>-58.8</td><td>-111.5</td><td>-57.0</td><td></td></tr><tr><td>103.75</td><td>-65.4</td><td>-117.1</td><td>-96.9</td><td></td></tr><tr><td>103.72</td><td>-66.1</td><td>-118.2</td><td>-100.5</td><td>-191.2</td></tr><tr><td>103.72</td><td>-66.1</td><td>73.0</td><td>-100.5</td><td></td></tr><tr><td>103.65</td><td>-67.8</td><td>70.4</td><td>-95.8</td><td></td></tr><tr><td>103.56</td><td>-70.3</td><td>65.7</td><td>-89.3</td><td></td></tr><tr><td>103.53</td><td>-71.2</td><td>64.0</td><td>-87.4</td><td></td></tr><tr><td>103.46</td><td>-73.2</td><td>59.9</td><td>-83.1</td><td></td></tr><tr><td>103.41</td><td>-74.9</td><td>56.4</td><td>-79.9</td><td></td></tr><tr><td>103.31</td><td>-78.1</td><td>49.2</td><td>-74.8</td><td></td></tr><tr><td>103.28</td><td>-79.1</td><td>46.9</td><td>-73.5</td><td></td></tr><tr><td>103.16</td><td>-83.5</td><td>36.2</td><td>-68.3</td><td></td></tr><tr><td>103.08</td><td>-86.3</td><td>29.3</td><td>-65.8</td><td></td></tr><tr><td>103.06</td><td>-87.3</td><td>26.8</td><td>-65.2</td><td></td></tr><tr><td>103.03</td><td>-88.3</td><td>24.2</td><td>-64.5</td><td></td></tr><tr><td>102.91</td><td>-93.4</td><td>10.9</td><td>-62.3</td><td></td></tr><tr><td>102.77</td><td>-99.3</td><td>-5.3</td><td>-61.9</td><td></td></tr><tr><td>102.71</td><td>-102.4</td><td>-14.0</td><td>-62.6</td><td></td></tr><tr><td>102.60</td><td>-107.4</td><td>-27.9</td><td>-64.8</td><td></td></tr><tr><td>102.55</td><td>-109.9</td><td>-33.3</td><td>-66.3</td><td></td></tr><tr><td>102.48</td><td>-113.5</td><td>-39.1</td><td>-69.0</td><td></td></tr><tr><td>102.44</td><td>-114.2</td><td>-42.1</td><td>-70.5</td><td></td></tr><tr><td>102.26</td><td>-116.7</td><td>-54.2</td><td>-79.0</td><td></td></tr><tr><td>102.18</td><td>-117.5</td><td>-59.1</td><td>-83.7</td><td></td></tr><tr><td>102.13</td><td>-118.0</td><td>-61.9</td><td>-86.7</td><td></td></tr><tr><td>101.88</td><td>-119.1</td><td>-72.3</td><td>-103.4</td><td></td></tr><tr><td>101.84</td><td>-119.2</td><td>-73.6</td><td>-106.7</td><td></td></tr><tr><td>101.79</td><td>-119.2</td><td>-74.6</td><td>-110.1</td><td></td></tr><tr><td>101.32</td><td>-115.7</td><td>-71.4</td><td>-145.4</td><td></td></tr><tr><td>101.11</td><td>-112.2</td><td>-62.7</td><td>-159.4</td><td></td></tr><tr><td>100.85</td><td>-106.2</td><td>-46.4</td><td>-173.8</td><td></td></tr><tr><td>100.35</td><td>-89.8</td><td>-2.2</td><td>-186.5</td><td></td></tr><tr><td>100.14</td><td>-83.5</td><td>14.3</td><td>-185.3</td><td></td></tr><tr><td>99.28</td><td>-65.8</td><td>59.3</td><td>-150.9</td><td></td></tr><tr><td>99.14</td><td>-64.0</td><td>63.4</td><td>-141.8</td><td></td></tr><tr><td>98.11</td><td>-60.1</td><td>68.2</td><td>-70.7</td><td></td></tr><tr><td>97.10</td><td>-68.3</td><td>38.6</td><td>-14.4</td><td></td></tr><tr><td>96.40</td><td>-79.9</td><td>0.0</td><td>0.0</td><td></td></tr></table></div><div><div>Schnittgrößen 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geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. A. Forner</div></div>	Seite Anlage N2/25
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.15</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.37</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr></table>						103.53	0.0	0.0	0.0	103.46	0.0	0.0	0.0	103.41	0.0	0.0	0.0	103.31	0.0	0.0	0.0	103.28	0.0	0.0	0.0	103.16	0.0	0.0	0.0	103.08	0.0	0.0	0.0	103.06	0.0	0.0	0.0	103.03	0.0	0.0	0.0	102.91	0.0	0.0	0.0	102.77	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.60	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.26	0.0	0.0	0.0	102.18	0.0	0.0	0.0	102.13	0.0	0.0	0.0	101.88	0.0	0.0	0.0	101.84	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.32	0.0	0.0	0.0	101.11	0.0	0.0	0.0	100.85	0.0	0.0	0.0	100.35	0.0	0.0	0.0	100.14	0.0	0.0	0.0	99.28	0.0	0.0	0.0	99.14	0.0	0.0	0.0	98.11	0.0	0.0	0.0	97.10	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.15	-12.1	-	-	-	106.09	-12.0	-	-	-	106.09	-12.0	-	-	-	106.04	-11.9	-	-	-	105.86	-11.6	-	-	-	105.81	-11.5	-	-	-	105.81	-11.5	-	-	-	105.76	-11.4	-	-	-	105.65	-11.2	-	-	-	105.60	-11.1	-	-	-	105.60	-11.1	-	-	-	105.55	-11.0	-	-	-	105.55	-11.0	-	-	-	105.50	-10.9	-	-	-	105.50	-10.9	-	-	-	105.45	-10.8	-	-	-	105.20	-10.4	-	-	-	105.15	-10.3	-	-	-	105.15	-10.3	-	-	-	105.10	-10.2	-	-	-	104.80	-9.6	-	-	-	104.75	-9.5	-	-	-	104.75	-9.5	-	-	-	104.70	-9.5	-	-	-	104.47	-9.0	-	-	-	104.42	-8.9	-	-	-	104.42	-8.9	-	-	-	104.37	-8.8	-	-	-	104.15	-8.5	-	-	-	104.10	-8.4	-	-	-	104.10	-8.4	-	-	-	104.05	-8.3	-	-	-	103.80	-7.8	-	-	-	103.75	-7.7	-	-	-
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div>103.75</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.75</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.75</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.72</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.72</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.65</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.65</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.65</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.61</div> <div>-7.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.56</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.56</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.53</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.53</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.46</div> <div>-7.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.46</div> <div>-7.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.41</div> <div>-7.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.41</div> <div>-7.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.36</div> <div>-7.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.36</div> <div>-7.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.31</div> <div>-7.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.31</div> <div>-7.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.28</div> <div>-6.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.28</div> <div>-6.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.22</div> <div>-6.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.22</div> <div>-6.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.16</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.16</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.08</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.08</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.06</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.06</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.03</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.03</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-6.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-6.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.91</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.91</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.86</div> <div>-6.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.82</div> <div>-6.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.77</div> <div>-6.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.77</div> <div>-6.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.71</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.71</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-5.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-5.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-5.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-5.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-5.7</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-5.7</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.48</div> <div>-5.6</div> <div>0.00</div> <div>0.00</div> <div>5.02</div> </div> <div> <div>102.48</div> <div>-5.6</div> <div>0.90</div> <div>5.02</div> <div>5.02</div> </div> <div> <div>102.44</div> <div>-5.5</div> <div>0.90</div> <div>4.97</div> <div>7.71</div> </div> <div> <div>102.44</div> <div>-5.5</div> <div>1.39</div> <div>7.71</div> <div>7.71</div> </div> <div> <div>102.39</div> <div>-5.5</div> <div>1.39</div> <div>7.61</div> <div>10.75</div> </div> <div> <div>102.31</div> <div>-5.3</div> <div>3.16</div> <div>16.84</div> <div>16.84</div> </div> <div> <div>102.26</div> <div>-5.3</div> <div>3.16</div> <div>16.62</div> <div>19.88</div> </div> <div> <div>102.26</div> <div>-5.3</div> <div>3.78</div> <div>19.88</div> <div>19.88</div> </div> <div> <div>102.22</div> <div>-5.2</div> <div>3.78</div> <div>19.64</div> <div>22.72</div> </div> <div> <div>102.22</div> <div>-5.2</div> <div>4.37</div> <div>22.72</div> <div>22.72</div> </div> <div> <div>102.18</div> <div>-5.1</div> <div>4.37</div> <div>22.44</div> <div>25.55</div> </div> <div> <div>102.18</div> <div>-5.1</div> <div>4.98</div> <div>25.55</div> <div>25.55</div> </div> <div> <div>102.13</div> <div>-5.1</div> <div>4.98</div> <div>25.17</div> <div>28.97</div> </div> <div> <div>102.13</div> <div>-5.1</div> <div>5.73</div> <div>28.97</div> <div>28.97</div> </div> <div> <div>102.08</div> <div>-5.0</div> <div>5.73</div> <div>28.53</div> <div>32.40</div> </div> <div> <div>101.93</div> <div>-4.7</div> <div>8.98</div> <div>42.66</div> <div>42.66</div> </div> <div> <div>101.88</div> <div>-4.7</div> <div>8.98</div> <div>41.98</div> <div>46.08</div> </div> <div> <div>101.88</div> <div>-4.7</div> <div>9.86</div> <div>46.08</div> <div>46.08</div> </div> <div> <div>101.84</div> <div>-4.6</div> <div>9.86</div> <div>45.41</div> <div>49.22</div> </div> <div> <div>101.84</div> <div>-4.6</div> <div>10.69</div> <div>49.22</div> <div>49.22</div> </div>		
Schnitt:	Anlage N2 Schnitt 5L	Seite Anlage N2/27
Kapitel:	3 LF 3 (BS-T)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 101.79 -4.5 10.69 48.49 52.36 101.79 -4.5 11.54 52.36 52.36 101.74 -4.5 11.54 51.46 55.97 101.37 -3.9 20.68 81.23 81.23 101.32 -3.9 20.68 79.71 84.84 101.32 -3.9 22.01 84.84 84.84 101.27 -3.8 22.01 83.24 88.45 101.16 -3.6 26.29 95.67 95.66 101.11 -3.6 26.29 93.81 99.27 101.11 -3.6 27.82 99.27 99.27 101.06 -3.5 27.82 97.33 102.88 100.90 -3.3 34.53 113.71 113.71 100.85 -3.2 34.53 111.40 117.32 100.85 -3.2 36.36 117.32 117.32 100.80 -3.2 36.36 115.00 120.81 100.40 -2.7 50.00 133.99 148.75 100.35 -2.6 50.00 131.15 152.24 100.35 -2.6 50.00 131.15 152.24 100.30 -2.6 50.00 128.36 155.73 100.19 -2.5 50.00 122.89 162.72 100.14 -2.4 50.00 120.21 166.21 100.14 -2.4 50.00 120.21 166.21 100.09 -2.4 50.00 117.58 169.70 99.33 -1.7 50.00 82.69 222.09 99.28 -1.6 50.00 80.65 225.58 99.28 -1.6 50.00 80.65 225.58 99.23 -1.6 50.00 78.71 228.97 99.19 -1.5 50.00 76.79 232.36 99.14 -1.5 50.00 74.90 235.74 99.14 -1.5 50.00 74.90 235.74 99.09 -1.5 50.00 73.05 239.13 98.16 -0.8 50.00 42.36 303.52 98.11 -0.8 50.00 40.94 306.91 98.11 -0.8 50.00 40.94 306.91 98.06 -0.8 50.00 39.50 310.38 97.15 -0.3 50.00 15.39 372.81 97.10 -0.3 50.00 14.11 376.28 97.10 -0.3 50.00 14.11 376.28 97.05 -0.3 50.00 12.84 379.75 96.45 0.0 50.00 -2.34 421.37 96.40 0.1 50.00 -3.60 424.84 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02877141 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.75 m</p> </div> </div>		
Schnitt: Anlage N2 Schnitt 5L	Seite Anlage N2/28	
Kapitel: 3 LF 3 (BS-T)	Archiv Nr.: Standsicherheit	
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$ $G_{,k} = 184.50 \text{ kN/m}$ $G'_{,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 20.00 \text{ kN/m}$ $E_{av,k} = 78.47 \text{ kN/m}$ ($E_{ah,k} = 428.42 \text{ kN/m}$) $B_{v,k} = 148.54$ Summe $V_{,k} = 134.43 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 97.28 bis 93.76 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 338.25 / 1.40 = 241.61 \text{ kN/m}$ $R_{,d} = R_{b,d} + R_{s1,d} = 1106.66 \text{ kN/m}$</p> <p>Einwirkungen $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 221.40 - 0.00 + 90.25 + 24.00 = 335.64 \text{ kN/m}$ $\Rightarrow \mu = V_{,d} / R_{,d} = 335.64 / 1106.66 = 0.30$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/29
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

4 LF 4 (BS-P)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 5
Datei: 14_BS 5_LF4.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.15 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-P
 $\gamma(G) = 1.35$
 $\gamma(G, Ruhe) = 1.20$
 $\gamma(Q) = 1.50$
 $\gamma(Ep) = 1.40$
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	74.40	2.03	103.75	102.91	100.85	nein

Lasten (zweiseitig begrenzt)

Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast
[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]
1	46.00	0.00	0.23	103.75	103.75	103.75	103.56	103.46	nein
2	17.20	3.03	9.83	103.75	102.44	99.28	93.37	88.62	nein
3	69.57	0.23	0.53	103.75	103.65	103.46	103.31	103.08	nein
4	78.52	0.53	0.83	103.75	103.53	103.08	103.06	102.71	nein
5	87.47	0.83	1.13	103.75	103.41	102.71	102.77	102.26	nein
6	96.42	1.13	1.43	103.75	103.28	102.26	102.48	101.79	nein
7	105.38	1.43	1.73	103.75	103.16	101.79	102.18	101.32	nein
8	114.33	1.73	2.03	103.75	103.03	101.32	101.88	100.85	nein
9	0.65	9.83	15.73	103.75	98.11	88.62	86.86	79.38	nein

Steuerparameter = 0.50

Passivseite
Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Schnitt:	Anlage N2 Schnitt 5L	Seite Anlage N2/60
Kapitel:	4 LF 4 (BS-P)	Archiv Nr. 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																		
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<div><div>Zusatzdrücke</div><table><tr><td>Nr.</td><td>e(oben)</td><td>e(unten)</td><td>z(oben)</td><td>z(unten)</td><td>Typ</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>13.50</td><td>106.09</td><td>104.75</td><td>Ständig</td></tr><tr><td>2</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td>Wasserdruck</td></tr></table><div>Kraftränder</div><div>Momente (entgegen dem Uhrzeigersinn positiv)</div><div>Horizontalkräfte (nach Erdseite positiv)</div><div>Vertikalkräfte (nach unten positiv)</div><table><tr><td>Nr.</td><td>Tiefe</td><td>M,g,k</td><td>M,q,k</td><td>H,g,k</td><td>H,q,k</td><td>V,g,k</td><td>V,q,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>105.60</td><td>-12.80</td><td>0.00</td><td>0.00</td><td>0.00</td><td>20.00</td><td>0.00</td></tr><tr><td>2</td><td>104.42</td><td>0.00</td><td>0.00</td><td>-92.70</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table><div>Art des Fußlagers:</div><div>Profillänge von 9.75 m fest und Fuß gebettet</div><div>Bettungsmodule</div><table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table><div>Ausnutzungsgrad $\mu_{ue} = 498.506 / 790.074 = 0.631$</div><div>Bettungslager $B_{h,d} = 498.506$ kN/m</div><div>Erdwiderstand $E_{ph,d} = 790.074$ kN/m</div><div>Anker und Steifen</div><div>$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div><div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>$N(g+q+w)_k$</td><td>$N(g+w)_k$</td><td>$N_{w,k}$</td><td>EA</td><td>EI</td><td>$N_{d'}$</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-223.23</td><td>-172.66</td><td>-172.66</td><td>-155.53</td><td>3.900E+7</td><td>2.100E+7</td><td>-220.14</td></tr></table><div>Zusätzlich für Steifen</div><div>Steife I</div><div>Vertikallast [kN/m²/m]: 0.00</div><div>max $M_{d'}$ [kN·m/m]: 0.00</div><div>gelenkig an Verbauwand angeschlossen</div><div>gegenüberliegende Seite gelenkig</div><table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-9.7</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.7</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.7</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-9.8</td><td>0.0</td><td>-231.81</td><td>0.00</td><td>0.00</td></tr></table><div>Vorverformungen an Ankern / Steifen berücksichtigt</div><div>Vorverformungen wurden aus der Datei</div><div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 5\Linkes Ufer\12_BS 5_LF2.vrb</div><div>eingeliesen.</div><table><tr><td>Anker/Steife</td><td>Tiefe</td><td>Vorverformung</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0076</td></tr></table><div>Bodenkennwerte</div><table><tr><td>Schicht</td><td>UK</td><td>$\gamma_{m,k}$</td><td>$\gamma_{m',k}$</td><td>$\phi_{i,k}$</td><td>$c_{i,k}$</td><td>$d(p)/\phi_i$</td><td>$d(a)/\phi_i$</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.81</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.75</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.60</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table></div>			Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	13.50	106.09	104.75	Ständig	2	0.00	29.50	105.50	102.55	Wasserdruck	Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	105.60	-12.80	0.00	0.00	0.00	20.00	0.00	2	104.42	0.00	0.00	-92.70	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000	Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-223.23	-172.66	-172.66	-155.53	3.900E+7	2.100E+7	-220.14	x	y	w _{x,d}	w _{y,d}	N_d	Q_d	M_d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-9.7	0.0	-231.81	0.00	0.00	-7.47	103.72	-9.7	0.0	-231.81	0.00	0.00	-7.47	103.72	-9.7	0.0	-231.81	0.00	0.00	-6.64	103.72	-9.8	0.0	-231.81	0.00	0.00	-5.81	103.72	-9.8	0.0	-231.81	0.00	0.00	-4.98	103.72	-9.8	0.0	-231.81	0.00	0.00	-4.15	103.72	-9.8	0.0	-231.81	0.00	0.00	-3.32	103.72	-9.8	0.0	-231.81	0.00	0.00	-2.49	103.72	-9.8	0.0	-231.81	0.00	0.00	-1.66	103.72	-9.8	0.0	-231.81	0.00	0.00	-0.83	103.72	-9.8	0.0	-231.81	0.00	0.00	0.00	103.72	-9.8	0.0	-231.81	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	103.72	-0.0076	Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c_{i,k}$	$d(p)/\phi_i$	$d(a)/\phi_i$	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.81	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.75	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.60	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667	<div><div>statisch geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. 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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.81 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.75 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.60 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.150 106.090 0.000 0.000 0.00 0.00</div> <div>106.090 105.810 0.000 2.821 0.00 0.00</div> <div>105.810 105.600 2.821 4.937 0.00 0.00</div> <div>105.600 105.500 4.937 5.944 0.00 0.00</div> <div>105.500 105.150 5.944 9.470 0.00 3.50</div> <div>105.150 104.750 9.470 13.500 3.50 7.50</div> <div>104.750 104.420 0.000 0.000 7.50 10.80</div> <div>104.420 104.100 0.000 0.000 10.80 14.00</div> <div>104.100 103.750 0.000 0.000 14.00 17.50</div> <div>103.750 103.720 0.000 21.491 17.50 17.80</div> <div>103.720 103.655 21.491 21.769 17.80 18.45</div> <div>103.655 103.560 21.769 39.135 18.45 19.40</div> <div>103.560 103.530 39.135 37.716 19.40 19.70</div> <div>103.530 103.461 37.716 40.523 19.70 20.39</div> <div>103.461 103.406 40.523 45.553 20.39 20.94</div> <div>103.406 103.309 45.553 60.521 20.94 21.91</div> <div>103.309 103.282 60.521 60.538 21.91 22.18</div> <div>103.282 103.158 60.538 66.500 22.18 23.42</div> <div>103.158 103.083 66.500 72.924 23.42 24.17</div> <div>103.083 103.059 72.924 76.709 24.17 24.41</div> <div>103.059 103.033 76.709 77.753 24.41 24.67</div> <div>103.033 102.909 77.753 87.034 24.67 25.91</div> <div>102.909 102.775 87.034 99.524 25.91 27.25</div> <div>102.775 102.706 99.524 100.025 27.25 27.94</div> <div>102.706 102.600 100.025 106.004 27.94 29.00</div> <div>102.600 102.550 76.710 78.769 29.00 29.50</div> <div>102.550 102.477 78.769 81.763 0.00 0.00</div> <div>102.477 102.438 81.763 81.413 0.00 0.00</div> <div>102.438 102.262 81.413 80.169 0.00 0.00</div> <div>102.262 102.180 80.169 81.821 0.00 0.00</div> <div>102.180 102.130 81.821 80.647 0.00 0.00</div> <div>102.130 101.883 80.647 74.782 0.00 0.00</div> <div>101.883 101.792 74.782 69.038 0.00 0.00</div> <div>101.792 101.322 69.038 49.965 0.00 0.00</div> <div>101.322 101.113 49.965 45.660 0.00 0.00</div> <div>101.113 100.851 45.660 40.280 0.00 0.00</div> <div>100.851 100.497 40.280 42.420 0.00 0.00</div> <div>100.497 100.143 42.420 44.560 0.00 0.00</div> <div>100.143 99.284 44.560 49.758 0.00 0.00</div> <div>99.284 99.137 49.758 50.361 0.00 0.00</div> <div>99.137 98.106 50.361 54.587 0.00 0.00</div> <div>98.106 97.102 54.587 58.732 0.00 0.00</div> <div>97.102 96.399 58.732 61.633 0.00 0.00</div> <div>96.399 93.368 61.633 74.138 0.00 0.00</div> <div>93.368 88.625 74.138 87.574 0.00 0.00</div> <div>88.625 86.865 87.574 94.794 0.00 0.00</div> <div>86.865 80.000 94.794 122.737 0.00 0.00</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/62
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.15 102.55</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.60 102.55 0.00 0.00 102.55 102.48 -11.33 -14.19 102.48 102.44 -14.19 -15.73 102.44 102.26 -15.73 -22.69 102.26 102.18 -22.69 -25.93 102.18 102.13 -25.93 -27.88 102.13 101.88 -27.88 -37.66 101.88 101.79 -37.66 -41.24 101.79 101.32 -41.24 -59.80 101.32 101.11 -59.80 -68.05 101.11 100.85 -68.05 -78.36 100.85 100.50 -78.36 -92.33 100.50 100.14 -92.33 -106.30 100.14 99.28 -106.30 -140.23 99.28 99.14 -140.23 -146.04 99.14 98.11 -146.04 -186.70 98.11 97.10 -186.70 -226.34 97.10 96.40 -226.34 -254.09 96.40 93.37 -254.09 -373.70 93.37 88.62 -373.70 -560.90 88.62 86.86 -560.90 -630.37 86.86 80.00 -630.37 -901.29</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.15 0.0 0.0 0.0 106.09 -1.4 0.0 0.0 105.81 -8.2 -0.5 0.0 105.60 -13.3 -1.5 -0.3 105.60 -40.3 -1.5 -17.5 105.50 -42.7 -2.2 -17.7 105.15 -51.1 -6.5 -19.2 104.75 -60.8 -15.3 -23.4 104.42 -68.7 -19.4 -29.1 104.42 -68.7 -144.6 -29.1 104.10 -76.5 -149.9 -76.1 103.75 -84.9 -157.3 -129.9 103.72 -85.8 -158.8 -134.6 -231.8 103.72 -85.8 73.0 -134.6 103.65 -87.9 69.6 -130.0 103.56 -91.2 63.5 -123.7 103.53 -92.3 61.2 -121.8 103.46 -94.9 55.9 -117.7 103.41 -97.0 51.4 -114.8 103.31 -101.1 42.0 -110.3 103.28 -102.3 39.1 -109.1 103.16 -108.0 25.2 -105.1 103.08 -111.6 16.2 -103.6 103.06 -112.8 13.0 -103.2 103.03 -114.1 9.7 -102.9 102.91 -120.6 -7.6 -102.8 102.77 -128.1 -28.4 -105.2 102.71 -132.1 -39.7 -107.5</div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/33
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.60 -138.4 -57.7 -112.7</div><div>102.55 -141.6 -64.6 -115.7</div><div>102.48 -145.3 -72.1 -120.7</div><div>102.44 -145.7 -74.9 -123.6</div><div>102.26 -147.1 -85.9 -137.8</div><div>102.18 -147.4 -90.1 -145.0</div><div>102.13 -147.5 -92.4 -149.5</div><div>101.88 -146.5 -99.6 -173.5</div><div>101.79 -145.6 -100.1 -182.5</div><div>101.32 -136.4 -84.5 -227.1</div><div>101.11 -129.9 -68.3 -243.2</div><div>100.85 -119.6 -41.1 -257.6</div><div>100.50 -103.3 2.3 -264.4</div><div>100.14 -90.0 37.3 -257.1</div><div>99.28 -70.5 86.2 -200.6</div><div>99.14 -68.7 90.2 -187.6</div><div>98.11 -66.1 89.7 -91.0</div><div>97.10 -77.5 49.1 -18.3</div><div>96.40 -92.4 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>106.09</div><div>-1.1</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.81</div><div>-6.4</div><div>-0.4</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.60</div><div>-10.4</div><div>-1.2</div><div>-0.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.60</div><div>-30.4</div><div>-1.2</div><div>-13.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.50</div><div>-32.3</div><div>-1.8</div><div>-13.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>105.15</div><div>-38.9</div><div>-5.1</div><div>-14.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.75</div><div>-46.5</div><div>-11.9</div><div>-17.5</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.42</div><div>-52.7</div><div>-14.9</div><div>-21.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.42</div><div>-52.7</div><div>-107.6</div><div>-21.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>104.10</div><div>-58.8</div><div>-111.5</div><div>-57.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.75</div><div>-65.4</div><div>-117.1</div><div>-96.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-66.1</div><div>-118.2</div><div>-100.5</div><div>-172.7</div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-66.1</div><div>54.5</div><div>-100.5</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.65</div><div>-67.8</div><div>51.9</div><div>-97.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.56</div><div>-70.3</div><div>47.2</div><div>-92.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.53</div><div>-71.2</div><div>45.5</div><div>-90.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.46</div><div>-73.2</div><div>41.3</div><div>-87.9</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.41</div><div>-74.9</div><div>37.9</div><div>-85.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.31</div><div>-78.1</div><div>30.7</div><div>-82.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.28</div><div>-79.1</div><div>28.4</div><div>-81.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.16</div><div>-83.5</div><div>17.7</div><div>-78.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.08</div><div>-86.3</div><div>10.7</div><div>-77.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.06</div><div>-87.3</div><div>8.3</div><div>-77.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.03</div><div>-88.3</div><div>5.7</div><div>-77.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.91</div><div>-93.4</div><div>-7.7</div><div>-77.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.77</div><div>-99.3</div><div>-23.8</div><div>-79.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.71</div><div>-102.4</div><div>-32.5</div><div>-81.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.60</div><div>-107.4</div><div>-46.5</div><div>-85.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.55</div><div>-109.9</div><div>-51.8</div><div>-88.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.48</div><div>-113.2</div><div>-57.7</div><div>-92.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.44</div><div>-113.5</div><div>-59.9</div><div>-94.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.26</div><div>-114.7</div><div>-68.5</div><div>-105.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.18</div><div>-114.9</div><div>-71.8</div><div>-111.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.13</div><div>-114.9</div><div>-73.6</div><div>-115.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.88</div><div>-114.2</div><div>-79.2</div><div>-134.0</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.79</div><div>-113.5</div><div>-79.6</div><div>-141.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.32</div><div>-106.3</div><div>-67.3</div><div>-176.7</div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.11</div><div>-101.2</div><div>-54.5</div><div>-189.5</div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.85</div><div>-93.2</div><div>-33.1</div><div>-201.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.50</div><div>-80.5</div><div>1.1</div><div>-206.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.14</div><div>-70.1</div><div>28.7</div><div>-201.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>99.28</div><div>-54.9</div><div>67.4</div><div>-157.2</div><div></div><div></div><div></div><div></div><div></div></div><div><div>99.14</div><div>-53.5</div><div>70.5</div><div>-147.1</div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.11</div><div>-51.6</div><div>70.3</div><div>-71.4</div><div></div><div></div><div></div><div></div><div></div></div><div><div>97.10</div><div>-60.6</div><div>38.6</div><div>-14.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>96.40</div><div>-72.3</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></div></div></div></div>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/34
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



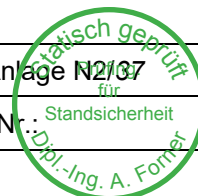
Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																				
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<div>Schnittgrößen (g+w,k)</div> <table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-1.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.81</td><td>-6.4</td><td>-0.4</td><td>0.0</td><td></td></tr><tr><td>105.60</td><td>-10.4</td><td>-1.2</td><td>-0.2</td><td></td></tr><tr><td>105.60</td><td>-30.4</td><td>-1.2</td><td>-13.0</td><td></td></tr><tr><td>105.50</td><td>-32.3</td><td>-1.8</td><td>-13.1</td><td></td></tr><tr><td>105.15</td><td>-38.9</td><td>-5.1</td><td>-14.3</td><td></td></tr><tr><td>104.75</td><td>-46.5</td><td>-11.9</td><td>-17.5</td><td></td></tr><tr><td>104.42</td><td>-52.7</td><td>-14.9</td><td>-21.9</td><td></td></tr><tr><td>104.42</td><td>-52.7</td><td>-107.6</td><td>-21.9</td><td></td></tr><tr><td>104.10</td><td>-58.8</td><td>-111.5</td><td>-57.0</td><td></td></tr><tr><td>103.75</td><td>-65.4</td><td>-117.1</td><td>-96.9</td><td></td></tr><tr><td>103.72</td><td>-66.1</td><td>-118.2</td><td>-100.5</td><td>-172.7</td></tr><tr><td>103.72</td><td>-66.1</td><td>54.5</td><td>-100.5</td><td></td></tr><tr><td>103.65</td><td>-67.8</td><td>51.9</td><td>-97.0</td><td></td></tr><tr><td>103.56</td><td>-70.3</td><td>47.2</td><td>-92.3</td><td></td></tr><tr><td>103.53</td><td>-71.2</td><td>45.5</td><td>-90.9</td><td></td></tr><tr><td>103.46</td><td>-73.2</td><td>41.3</td><td>-87.9</td><td></td></tr><tr><td>103.41</td><td>-74.9</td><td>37.9</td><td>-85.7</td><td></td></tr><tr><td>103.31</td><td>-78.1</td><td>30.7</td><td>-82.4</td><td></td></tr><tr><td>103.28</td><td>-79.1</td><td>28.4</td><td>-81.6</td><td></td></tr><tr><td>103.16</td><td>-83.5</td><td>17.7</td><td>-78.7</td><td></td></tr><tr><td>103.08</td><td>-86.3</td><td>10.7</td><td>-77.7</td><td></td></tr><tr><td>103.06</td><td>-87.3</td><td>8.3</td><td>-77.4</td><td></td></tr><tr><td>103.03</td><td>-88.3</td><td>5.7</td><td>-77.2</td><td></td></tr><tr><td>102.91</td><td>-93.4</td><td>-7.7</td><td>-77.3</td><td></td></tr><tr><td>102.77</td><td>-99.3</td><td>-23.8</td><td>-79.4</td><td></td></tr><tr><td>102.71</td><td>-102.4</td><td>-32.5</td><td>-81.4</td><td></td></tr><tr><td>102.60</td><td>-107.4</td><td>-46.5</td><td>-85.6</td><td></td></tr><tr><td>102.55</td><td>-109.9</td><td>-51.8</td><td>-88.0</td><td></td></tr><tr><td>102.48</td><td>-113.2</td><td>-57.7</td><td>-92.0</td><td></td></tr><tr><td>102.44</td><td>-113.5</td><td>-59.9</td><td>-94.3</td><td></td></tr><tr><td>102.26</td><td>-114.7</td><td>-68.5</td><td>-105.6</td><td></td></tr><tr><td>102.18</td><td>-114.9</td><td>-71.8</td><td>-111.4</td><td></td></tr><tr><td>102.13</td><td>-114.9</td><td>-73.6</td><td>-115.0</td><td></td></tr><tr><td>101.88</td><td>-114.2</td><td>-79.2</td><td>-134.0</td><td></td></tr><tr><td>101.79</td><td>-113.5</td><td>-79.6</td><td>-141.2</td><td></td></tr><tr><td>101.32</td><td>-106.3</td><td>-67.3</td><td>-176.7</td><td></td></tr><tr><td>101.11</td><td>-101.2</td><td>-54.5</td><td>-189.5</td><td></td></tr><tr><td>100.85</td><td>-93.2</td><td>-33.1</td><td>-201.1</td><td></td></tr><tr><td>100.50</td><td>-80.5</td><td>1.1</td><td>-206.6</td><td></td></tr><tr><td>100.14</td><td>-70.1</td><td>28.7</td><td>-201.1</td><td></td></tr><tr><td>99.28</td><td>-54.9</td><td>67.4</td><td>-157.2</td><td></td></tr><tr><td>99.14</td><td>-53.5</td><td>70.5</td><td>-147.1</td><td></td></tr><tr><td>98.11</td><td>-51.6</td><td>70.3</td><td>-71.4</td><td></td></tr><tr><td>97.10</td><td>-60.6</td><td>38.6</td><td>-14.3</td><td></td></tr><tr><td>96.40</td><td>-72.3</td><td>0.0</td><td>0.0</td><td></td></tr></table> <div>Schnittgrößen (q,k)</div> <table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.81</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.42</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-114.4</td></tr><tr><td>103.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.53</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.46</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.31</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.15	0.0	0.0	0.0		106.09	-1.1	0.0	0.0		105.81	-6.4	-0.4	0.0		105.60	-10.4	-1.2	-0.2		105.60	-30.4	-1.2	-13.0		105.50	-32.3	-1.8	-13.1		105.15	-38.9	-5.1	-14.3		104.75	-46.5	-11.9	-17.5		104.42	-52.7	-14.9	-21.9		104.42	-52.7	-107.6	-21.9		104.10	-58.8	-111.5	-57.0		103.75	-65.4	-117.1	-96.9		103.72	-66.1	-118.2	-100.5	-172.7	103.72	-66.1	54.5	-100.5		103.65	-67.8	51.9	-97.0		103.56	-70.3	47.2	-92.3		103.53	-71.2	45.5	-90.9		103.46	-73.2	41.3	-87.9		103.41	-74.9	37.9	-85.7		103.31	-78.1	30.7	-82.4		103.28	-79.1	28.4	-81.6		103.16	-83.5	17.7	-78.7		103.08	-86.3	10.7	-77.7		103.06	-87.3	8.3	-77.4		103.03	-88.3	5.7	-77.2		102.91	-93.4	-7.7	-77.3		102.77	-99.3	-23.8	-79.4		102.71	-102.4	-32.5	-81.4		102.60	-107.4	-46.5	-85.6		102.55	-109.9	-51.8	-88.0		102.48	-113.2	-57.7	-92.0		102.44	-113.5	-59.9	-94.3		102.26	-114.7	-68.5	-105.6		102.18	-114.9	-71.8	-111.4		102.13	-114.9	-73.6	-115.0		101.88	-114.2	-79.2	-134.0		101.79	-113.5	-79.6	-141.2		101.32	-106.3	-67.3	-176.7		101.11	-101.2	-54.5	-189.5		100.85	-93.2	-33.1	-201.1		100.50	-80.5	1.1	-206.6		100.14	-70.1	28.7	-201.1		99.28	-54.9	67.4	-157.2		99.14	-53.5	70.5	-147.1		98.11	-51.6	70.3	-71.4		97.10	-60.6	38.6	-14.3		96.40	-72.3	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.15	0.0	0.0	0.0		106.09	0.0	0.0	0.0		105.81	0.0	0.0	0.0		105.60	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.15	0.0	0.0	0.0		104.75	0.0	0.0	0.0		104.42	0.0	0.0	0.0		104.10	0.0	0.0	0.0		103.75	0.0	0.0	0.0		103.72	0.0	0.0	0.0	-114.4	103.65	0.0	0.0	0.0		103.56	0.0	0.0	0.0		103.53	0.0	0.0	0.0		103.46	0.0	0.0	0.0		103.41	0.0	0.0	0.0		103.31	0.0	0.0	0.0	
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.15</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.37</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr></table>						103.28	0.0	0.0	0.0	103.16	0.0	0.0	0.0	103.08	0.0	0.0	0.0	103.06	0.0	0.0	0.0	103.03	0.0	0.0	0.0	102.91	0.0	0.0	0.0	102.77	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.60	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.26	0.0	0.0	0.0	102.18	0.0	0.0	0.0	102.13	0.0	0.0	0.0	101.88	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.32	0.0	0.0	0.0	101.11	0.0	0.0	0.0	100.85	0.0	0.0	0.0	100.50	0.0	0.0	0.0	100.14	0.0	0.0	0.0	99.28	0.0	0.0	0.0	99.14	0.0	0.0	0.0	98.11	0.0	0.0	0.0	97.10	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.15	-12.4	-	-	-	106.09	-12.3	-	-	-	106.09	-12.3	-	-	-	106.04	-12.2	-	-	-	105.86	-11.8	-	-	-	105.81	-11.7	-	-	-	105.81	-11.7	-	-	-	105.76	-11.6	-	-	-	105.65	-11.4	-	-	-	105.60	-11.3	-	-	-	105.60	-11.3	-	-	-	105.55	-11.2	-	-	-	105.55	-11.2	-	-	-	105.50	-11.1	-	-	-	105.50	-11.1	-	-	-	105.45	-11.0	-	-	-	105.20	-10.5	-	-	-	105.15	-10.4	-	-	-	105.15	-10.4	-	-	-	105.10	-10.3	-	-	-	104.80	-9.7	-	-	-	104.75	-9.6	-	-	-	104.75	-9.6	-	-	-	104.70	-9.5	-	-	-	104.47	-9.1	-	-	-	104.42	-9.0	-	-	-	104.42	-9.0	-	-	-	104.37	-8.9	-	-	-	104.15	-8.5	-	-	-	104.10	-8.4	-	-	-	104.10	-8.4	-	-	-	104.05	-8.3	-	-	-	103.80	-7.8	-	-	-	103.75	-7.7	-	-	-	103.75	-7.7	-	-	-	103.75	-7.7	-	-	-	103.75	-7.7	-	-	-	103.72	-7.7	-	-	-	103.72	-7.7	-	-	-
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102.55	-5.6	0.00	0.00	19.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.48	-5.5	0.00	0.00	24.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.48	-5.5	4.53	24.84	24.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.44	-5.4	4.53	24.55	27.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.44	-5.4	5.08	27.53	27.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-5.3	5.08	27.15	30.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.31	-5.2	7.05	36.66	36.66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.26	-5.1	7.05	36.15	39.70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.26	-5.1	7.74	39.70	39.70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.1	7.74	39.18	42.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-5.1	8.41	42.54	42.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.0	8.41	41.97	45.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-5.0	9.09	45.37	45.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-4.9	9.09	44.64	48.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-4.9	9.93	48.79	48.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-4.8	9.93	48.00	52.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.93	-4.6	13.59	62.48	62.48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.88	-4.5	13.59	61.42	65.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.88	-4.5	14.59	65.90	65.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-4.4	14.59	64.87	69.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-4.4	15.52	69.04	69.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.79	-4.4	16.49	72.18	72.18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-4.3	16.49	70.85	75.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.37	-3.8	26.92	101.05	101.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



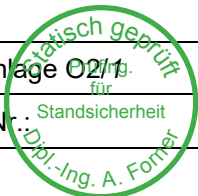
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>101.32</div><div>-3.7</div><div>28.44</div><div>104.66</div><div>104.66</div></div><div><div>101.27</div><div>-3.6</div><div>28.44</div><div>102.56</div><div>108.27</div></div><div><div>101.16</div><div>-3.5</div><div>33.36</div><div>115.48</div><div>115.48</div></div><div><div>101.11</div><div>-3.4</div><div>33.36</div><div>113.11</div><div>119.09</div></div><div><div>101.11</div><div>-3.4</div><div>35.13</div><div>119.09</div><div>119.09</div></div><div><div>101.06</div><div>-3.3</div><div>35.13</div><div>116.63</div><div>122.70</div></div><div><div>100.90</div><div>-3.1</div><div>42.87</div><div>133.53</div><div>133.53</div></div><div><div>100.85</div><div>-3.0</div><div>42.87</div><div>130.68</div><div>137.14</div></div><div><div>100.85</div><div>-3.0</div><div>44.99</div><div>137.14</div><div>137.14</div></div><div><div>100.80</div><div>-3.0</div><div>44.99</div><div>134.28</div><div>140.63</div></div><div><div>100.55</div><div>-2.7</div><div>50.00</div><div>134.03</div><div>158.09</div></div><div><div>100.50</div><div>-2.6</div><div>50.00</div><div>131.12</div><div>161.58</div></div><div><div>100.50</div><div>-2.6</div><div>50.00</div><div>131.12</div><div>161.58</div></div><div><div>100.45</div><div>-2.6</div><div>50.00</div><div>128.26</div><div>165.07</div></div><div><div>100.19</div><div>-2.3</div><div>50.00</div><div>114.61</div><div>182.54</div></div><div><div>100.14</div><div>-2.2</div><div>50.00</div><div>112.01</div><div>186.03</div></div><div><div>100.14</div><div>-2.2</div><div>50.00</div><div>112.01</div><div>186.03</div></div><div><div>100.09</div><div>-2.2</div><div>50.00</div><div>109.46</div><div>189.52</div></div><div><div>99.33</div><div>-1.5</div><div>50.00</div><div>76.09</div><div>241.90</div></div><div><div>99.28</div><div>-1.5</div><div>50.00</div><div>74.17</div><div>245.40</div></div><div><div>99.28</div><div>-1.5</div><div>50.00</div><div>74.17</div><div>245.40</div></div><div><div>99.23</div><div>-1.4</div><div>50.00</div><div>72.34</div><div>248.79</div></div><div><div>99.19</div><div>-1.4</div><div>50.00</div><div>70.54</div><div>252.17</div></div><div><div>99.14</div><div>-1.4</div><div>50.00</div><div>68.77</div><div>255.56</div></div><div><div>99.14</div><div>-1.4</div><div>50.00</div><div>68.77</div><div>255.56</div></div><div><div>99.09</div><div>-1.3</div><div>50.00</div><div>67.03</div><div>258.95</div></div><div><div>98.16</div><div>-0.8</div><div>50.00</div><div>38.73</div><div>323.34</div></div><div><div>98.11</div><div>-0.7</div><div>50.00</div><div>37.44</div><div>326.73</div></div><div><div>98.11</div><div>-0.7</div><div>50.00</div><div>37.44</div><div>326.73</div></div><div><div>98.06</div><div>-0.7</div><div>50.00</div><div>36.13</div><div>330.20</div></div><div><div>97.15</div><div>-0.3</div><div>50.00</div><div>14.41</div><div>392.63</div></div><div><div>97.10</div><div>-0.3</div><div>50.00</div><div>13.27</div><div>396.10</div></div><div><div>97.10</div><div>-0.3</div><div>50.00</div><div>13.27</div><div>396.10</div></div><div><div>97.05</div><div>-0.2</div><div>50.00</div><div>12.12</div><div>399.57</div></div><div><div>96.45</div><div>0.0</div><div>50.00</div><div>-1.46</div><div>441.19</div></div><div><div>96.40</div><div>0.1</div><div>50.00</div><div>-2.58</div><div>444.66</div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02574549 Theoretischer Fußpunkt = 96.399 m</div><div>Einbindetiefe tg = 6.15 m Profillänge = 9.75 m</div></div>		
Schnitt: Anlage N2	Schnitt 5L	Seite Anlage N2/38
Kapitel: 4	LF 4 (BS-P)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$ $G_{k} = 184.50 \text{ kN/m}$ $G'_{k} = 0.00 \text{ kN/m}$ $P_{v,k} = 20.00 \text{ kN/m}$ $E_{av,k} = 78.47 \text{ kN/m}$ ($E_{ah,k} = 428.42 \text{ kN/m}$) $B_{v,k} = 155.87$ Summe $V_{k} = 127.10 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 97.28 bis 93.76 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 338.25 / 1.40 = 241.61 \text{ kN/m}$ $R_{d} = R_{b,d} + R_{s1,d} = 1106.66 \text{ kN/m}$</p> <p>Einwirkungen $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 249.07 - 0.00 + 100.05 + 27.00 = 376.13 \text{ kN/m}$ $\Rightarrow \mu = V_{d} / R_{d} = 376.13 / 1106.66 = 0.34$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage N2 Schnitt 5L		Seite Anlage N2/39
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Anlage O2 Schnitt 6L</div> <div>1 LF 1 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 11_BS 6_LF1.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 83.10 2.13 103.74 102.86 100.69 nein 2 10.00 2.63 103.74 102.65 99.91 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.00 0.00 0.33 103.74 103.74 103.74 103.47 103.33 nein 2 117.67 0.33 0.63 103.74 103.60 103.33 103.22 102.95 nein 3 111.80 0.63 0.93 103.74 103.48 102.95 102.97 102.57 nein 4 105.93 0.93 1.23 103.74 103.35 102.57 102.67 102.11 nein 5 100.07 1.23 1.53 103.74 103.23 102.11 102.37 101.64 nein 6 94.20 1.53 1.83 103.74 103.11 101.64 102.08 101.16 nein 7 88.33 1.83 2.13 103.74 102.98 101.16 101.78 100.69 nein</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.00 106.09 104.74 Ständig</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/1
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div>Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k</div> <div>[-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m]</div> <div>1 104.41 0.00 0.00 -101.70 0.00 0.00 0.00</div> <div>Art des Fußlagers:</div> <div>Profillänge von 9.70 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.55 5.000 5.000</div> <div>105.55 103.74 5.000 5.000</div> <div>103.74 102.55 5.000 5.000</div> <div>102.55 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 692.809 / 1702.647 = 0.407$</div> <div>Bettungslager $B_{h,d} = 692.809 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1702.647 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c,k d(p)/phi d(a)/phi</div> <div>pas/akt [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [-] [-]</div> <div>1 105.55 19.00/0.00 10.00/0.00 30.00/0.00 0.00/0.00 -0.667 0.667</div> <div>2 103.74 17.00/0.00 8.50/0.00 22.50/0.00 0.00/0.00 -0.667 0.667</div> <div>3 102.55 17.00/17.00 8.50/8.50 22.50/22.50 3.00/3.00 -0.667 0.667</div> <div>4 80.00 21.00/21.00 11.50/11.50 32.50/32.50 0.00/0.00 -0.667 0.667</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.55 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.74 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.55 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.100 106.090 0.000 0.000 0.00 0.00</div> <div>106.090 105.750 0.000 3.274 0.00 0.00</div> <div>105.750 105.550 3.274 5.200 0.00 0.00</div> <div>105.550 105.500 5.200 5.681 0.00 0.00</div> <div>105.500 105.050 5.681 10.015 0.00 4.50</div> <div>105.050 105.000 10.015 10.496 4.50 5.00</div> <div>105.000 104.740 10.496 13.000 5.00 5.00</div> <div>104.740 104.410 0.000 0.000 5.00 5.00</div> <div>104.410 104.049 0.000 0.000 5.00 5.00</div> <div>104.049 103.740 0.000 0.000 5.00 5.00</div> <div>103.740 103.740 0.000 0.000 5.00 5.00</div> <div>103.740 103.603 0.000 21.945 5.00 5.00</div> <div>103.603 103.479 21.945 48.775 5.00 5.00</div> <div>103.479 103.467 48.775 52.755 5.00 5.00</div> <div>103.467 103.355 52.755 70.508 5.00 5.00</div> <div>103.355 103.325 70.508 77.246 5.00 5.00</div> <div>103.325 103.231 77.246 93.989 5.00 5.00</div> <div>103.231 103.216 93.989 97.233 5.00 5.00</div> <div>103.216 103.106 97.233 97.458 5.00 5.00</div> <div>103.106 103.044 97.458 99.577 5.00 5.00</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/2
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüf

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
103.044 102.982 99.577 101.696 5.00 5.00 102.982 102.965 101.696 102.681 5.00 5.00 102.965 102.948 102.681 101.232 5.00 5.00 102.948 102.858 101.232 104.018 5.00 5.00 102.858 102.670 104.018 113.420 5.00 5.00 102.670 102.651 113.420 112.557 5.00 5.00 102.651 102.570 112.557 109.205 5.00 5.00 102.570 102.550 109.205 109.868 5.00 5.00 102.550 102.373 79.463 83.733 5.00 5.00 102.373 102.105 83.733 77.247 5.00 5.00 102.105 102.076 77.247 77.568 5.00 5.00 102.076 101.779 77.568 69.854 5.00 5.00 101.779 101.635 69.854 61.954 5.00 5.00 101.635 101.165 61.954 48.084 5.00 5.00 101.165 101.060 48.084 47.044 5.00 5.00 101.060 100.695 47.044 43.403 5.00 5.00 100.695 100.058 43.403 46.844 5.00 5.00 100.058 99.911 46.844 47.638 5.00 5.00 99.911 99.058 47.638 51.136 5.00 5.00 99.058 98.656 51.136 52.782 5.00 5.00 98.656 98.054 52.782 55.252 5.00 5.00 98.054 97.051 55.252 59.367 5.00 5.00 97.051 96.399 59.367 62.042 5.00 5.00 96.399 80.000 62.042 129.303 5.00 5.00		
Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.10 105.75		
Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 1 105.55 5.005 5.388 30.000 -20.01 18.10 2 103.74 3.034 3.911 22.500 -15.01 23.23 3 102.55 3.034 3.911 22.500 -15.01 23.23 4 80.00 6.006 6.054 32.500 -21.68 16.35		
Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 106.09 105.75 0.00 0.00 105.75 105.55 0.00 -11.70 105.55 105.50 -7.09 -8.68 105.50 105.05 -8.68 -22.96 105.05 105.00 -22.96 -24.55 105.00 104.74 -24.55 -28.67 104.74 104.41 -28.67 -33.91 104.41 104.05 -33.91 -39.64 104.05 103.74 -39.64 -44.54 103.74 103.74 -51.76 -44.54 103.74 103.60 -51.76 -53.93 103.60 103.48 -53.93 -55.90 103.48 103.47 -55.90 -56.10 103.47 103.35 -56.10 -57.88 103.35 103.33 -57.88 -58.35 103.33 103.23 -58.35 -59.85 103.23 103.22 -59.85 -60.08 103.22 103.11 -60.08 -61.82 103.11 103.04 -61.82 -62.80 103.04 102.98 -62.80 -63.79 102.98 102.97 -63.79 -64.06 102.97 102.95 -64.06 -64.33 102.95 102.86 -64.33 -65.76 102.86 102.67 -65.76 -68.73 102.67 102.65 -68.73 -69.05 102.65 102.57 -69.05 -70.32		
Schnitt: Anlage O2 Schnitt 6L	Seite Anlage O2/3	
Kapitel: 1 LF 1 (BS-T)	Archiv Nr.:	
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.57102.55-70.32-70.65</div><div>102.55102.37-125.57-133.08</div><div>102.37102.11-133.08-144.47</div><div>102.11102.08-144.47-145.72</div><div>102.08101.78-145.72-158.35</div><div>101.78101.64-158.35-164.46</div><div>101.64101.16-164.46-184.44</div><div>101.16101.06-184.44-188.88</div><div>101.06100.69-188.88-204.43</div><div>100.69100.06-204.43-231.49</div><div>100.0699.91-231.49-237.74</div><div>99.9199.06-237.74-273.99</div><div>99.0698.66-273.99-291.05</div><div>98.6698.05-291.05-316.64</div><div>98.0597.05-316.64-359.29</div><div>97.0596.40-359.29-387.01</div><div>96.4080.00-387.01-1083.99</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.09</div><div>-0.2</div><div>0.0</div><div>0.0</div></div><div><div>105.75</div><div>-7.6</div><div>-0.6</div><div>-0.1</div></div><div><div>105.55</div><div>-11.3</div><div>0.1</div><div>-0.2</div></div><div><div>105.50</div><div>-12.2</div><div>0.4</div><div>-0.2</div></div><div><div>105.05</div><div>-18.5</div><div>8.0</div><div>1.4</div></div><div><div>105.00</div><div>-19.0</div><div>9.4</div><div>1.9</div></div><div><div>104.74</div><div>-21.5</div><div>16.4</div><div>5.3</div></div><div><div>104.41</div><div>-24.7</div><div>29.0</div><div>12.8</div></div><div><div>104.41</div><div>-24.7</div><div>-93.0</div><div>12.8</div></div><div><div>104.05</div><div>-28.7</div><div>-80.4</div><div>-18.4</div></div><div><div>103.74</div><div>-32.3</div><div>-70.7</div><div>-41.8</div></div><div><div>103.74</div><div>-32.3</div><div>-70.7</div><div>-41.8</div></div><div><div>103.60</div><div>-34.0</div><div>-70.0</div><div>-51.4</div></div><div><div>103.48</div><div>-35.5</div><div>-71.6</div><div>-60.2</div></div><div><div>103.47</div><div>-35.7</div><div>-72.0</div><div>-61.0</div></div><div><div>103.35</div><div>-37.1</div><div>-76.9</div><div>-69.3</div></div><div><div>103.33</div><div>-37.5</div><div>-78.6</div><div>-71.7</div></div><div><div>103.23</div><div>-38.8</div><div>-85.5</div><div>-79.4</div></div><div><div>103.22</div><div>-39.0</div><div>-86.7</div><div>-80.7</div></div><div><div>103.11</div><div>-40.5</div><div>-96.3</div><div>-90.7</div></div><div><div>103.04</div><div>-41.3</div><div>-101.9</div><div>-96.8</div></div><div><div>102.98</div><div>-42.2</div><div>-107.6</div><div>-103.4</div></div><div><div>102.97</div><div>-42.4</div><div>-109.2</div><div>-105.2</div></div><div><div>102.95</div><div>-42.7</div><div>-110.9</div><div>-107.1</div></div><div><div>102.86</div><div>-44.0</div><div>-119.5</div><div>-117.5</div></div><div><div>102.67</div><div>-46.7</div><div>-139.0</div><div>-141.6</div></div><div><div>102.65</div><div>-47.0</div><div>-141.2</div><div>-144.4</div></div><div><div>102.57</div><div>-48.2</div><div>-149.8</div><div>-156.1</div></div><div><div>102.55</div><div>-48.5</div><div>-152.0</div><div>-159.2</div></div><div><div>102.37</div><div>-35.6</div><div>-127.4</div><div>-183.8</div></div><div><div>102.11</div><div>-17.6</div><div>-93.7</div><div>-213.4</div></div><div><div>102.08</div><div>-15.7</div><div>-90.2</div><div>-216.1</div></div><div><div>101.78</div><div>1.3</div><div>-57.9</div><div>-238.0</div></div><div><div>101.64</div><div>8.6</div><div>-43.4</div><div>-245.2</div></div><div><div>101.16</div><div>28.6</div><div>0.3</div><div>-255.1</div></div><div><div>101.06</div><div>32.3</div><div>9.0</div><div>-254.6</div></div><div><div>100.69</div><div>43.2</div><div>35.5</div><div>-246.3</div></div><div><div>100.06</div><div>56.2</div><div>66.3</div><div>-212.8</div></div><div><div>99.91</div><div>58.2</div><div>70.7</div><div>-202.7</div></div><div><div>99.06</div><div>64.8</div><div>80.4</div><div>-136.6</div></div><div><div>98.66</div><div>65.5</div><div>77.5</div><div>-104.7</div></div><div><div>98.05</div><div>64.3</div><div>66.0</div><div>-61.1</div></div><div><div>97.05</div><div>58.1</div><div>31.6</div><div>-10.7</div></div><div><div>96.40</div><div>51.5</div><div>0.0</div><div>0.0</div></div></div></div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/4
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																
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<div>Schnittgrößen ([g+q+w],k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>-6.6</td><td>-0.6</td><td>-0.1</td></tr><tr><td>105.55</td><td>-9.9</td><td>0.0</td><td>-0.2</td></tr><tr><td>105.50</td><td>-10.7</td><td>0.3</td><td>-0.2</td></tr><tr><td>105.05</td><td>-16.2</td><td>6.7</td><td>1.2</td></tr><tr><td>105.00</td><td>-16.7</td><td>7.8</td><td>1.5</td></tr><tr><td>104.74</td><td>-18.8</td><td>13.8</td><td>4.4</td></tr><tr><td>104.41</td><td>-21.8</td><td>24.5</td><td>10.7</td></tr><tr><td>104.41</td><td>-21.8</td><td>-77.2</td><td>10.7</td></tr><tr><td>104.05</td><td>-25.2</td><td>-66.5</td><td>-15.2</td></tr><tr><td>103.74</td><td>-28.4</td><td>-58.2</td><td>-34.4</td></tr><tr><td>103.74</td><td>-28.4</td><td>-58.2</td><td>-34.4</td></tr><tr><td>103.60</td><td>-29.9</td><td>-57.7</td><td>-42.3</td></tr><tr><td>103.48</td><td>-31.3</td><td>-59.1</td><td>-49.5</td></tr><tr><td>103.47</td><td>-31.5</td><td>-59.4</td><td>-50.3</td></tr><tr><td>103.35</td><td>-32.7</td><td>-63.7</td><td>-57.1</td></tr><tr><td>103.33</td><td>-33.1</td><td>-65.3</td><td>-59.1</td></tr><tr><td>103.23</td><td>-34.2</td><td>-71.3</td><td>-65.5</td></tr><tr><td>103.22</td><td>-34.4</td><td>-72.4</td><td>-66.6</td></tr><tr><td>103.11</td><td>-35.7</td><td>-80.7</td><td>-74.9</td></tr><tr><td>103.04</td><td>-36.4</td><td>-85.6</td><td>-80.1</td></tr><tr><td>102.98</td><td>-37.2</td><td>-90.6</td><td>-85.6</td></tr><tr><td>102.97</td><td>-37.4</td><td>-92.0</td><td>-87.1</td></tr><tr><td>102.95</td><td>-37.6</td><td>-93.4</td><td>-88.7</td></tr><tr><td>102.86</td><td>-38.7</td><td>-100.9</td><td>-97.5</td></tr><tr><td>102.67</td><td>-41.1</td><td>-118.0</td><td>-118.0</td></tr><tr><td>102.65</td><td>-41.4</td><td>-119.8</td><td>-120.3</td></tr><tr><td>102.57</td><td>-42.4</td><td>-127.4</td><td>-130.2</td></tr><tr><td>102.55</td><td>-42.7</td><td>-129.3</td><td>-132.8</td></tr><tr><td>102.37</td><td>-31.7</td><td>-108.5</td><td>-153.9</td></tr><tr><td>102.11</td><td>-16.4</td><td>-80.1</td><td>-179.1</td></tr><tr><td>102.08</td><td>-14.8</td><td>-77.2</td><td>-181.4</td></tr><tr><td>101.78</td><td>-0.3</td><td>-50.0</td><td>-200.2</td></tr><tr><td>101.64</td><td>5.9</td><td>-37.7</td><td>-206.5</td></tr><tr><td>101.16</td><td>23.0</td><td>-0.6</td><td>-215.3</td></tr><tr><td>101.06</td><td>26.1</td><td>6.8</td><td>-214.9</td></tr><tr><td>100.69</td><td>35.5</td><td>29.4</td><td>-208.2</td></tr><tr><td>100.06</td><td>46.6</td><td>55.8</td><td>-180.1</td></tr><tr><td>99.91</td><td>48.4</td><td>59.5</td><td>-171.6</td></tr><tr><td>99.06</td><td>54.0</td><td>68.0</td><td>-115.8</td></tr><tr><td>98.66</td><td>54.6</td><td>65.6</td><td>-88.8</td></tr><tr><td>98.05</td><td>53.5</td><td>56.0</td><td>-51.9</td></tr><tr><td>97.05</td><td>47.8</td><td>26.8</td><td>-9.1</td></tr><tr><td>96.40</td><td>41.8</td><td>0.0</td><td>0.0</td></tr></tbody></table> <div>Schnittgrößen (g+w,k)</div> 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<table><tr><td>103.22</td><td>-34.4</td><td>-72.4</td><td>-66.6</td></tr><tr><td>103.11</td><td>-35.7</td><td>-80.7</td><td>-74.9</td></tr><tr><td>103.04</td><td>-36.4</td><td>-85.6</td><td>-80.1</td></tr><tr><td>102.98</td><td>-37.2</td><td>-90.6</td><td>-85.6</td></tr><tr><td>102.97</td><td>-37.4</td><td>-92.0</td><td>-87.1</td></tr><tr><td>102.95</td><td>-37.6</td><td>-93.4</td><td>-88.7</td></tr><tr><td>102.86</td><td>-38.7</td><td>-100.9</td><td>-97.5</td></tr><tr><td>102.67</td><td>-41.1</td><td>-118.0</td><td>-118.0</td></tr><tr><td>102.65</td><td>-41.4</td><td>-119.8</td><td>-120.3</td></tr><tr><td>102.57</td><td>-42.4</td><td>-127.4</td><td>-130.2</td></tr><tr><td>102.55</td><td>-42.7</td><td>-129.3</td><td>-132.8</td></tr><tr><td>102.37</td><td>-31.7</td><td>-108.5</td><td>-153.9</td></tr><tr><td>102.11</td><td>-16.4</td><td>-80.1</td><td>-179.1</td></tr><tr><td>102.08</td><td>-14.8</td><td>-77.2</td><td>-181.4</td></tr><tr><td>101.78</td><td>-0.3</td><td>-50.0</td><td>-200.2</td></tr><tr><td>101.64</td><td>5.9</td><td>-37.7</td><td>-206.5</td></tr><tr><td>101.16</td><td>23.0</td><td>-0.6</td><td>-215.3</td></tr><tr><td>101.06</td><td>26.1</td><td>6.8</td><td>-214.9</td></tr><tr><td>100.69</td><td>35.5</td><td>29.4</td><td>-208.2</td></tr><tr><td>100.06</td><td>46.6</td><td>55.8</td><td>-180.1</td></tr><tr><td>99.91</td><td>48.4</td><td>59.5</td><td>-171.6</td></tr><tr><td>99.06</td><td>54.0</td><td>68.0</td><td>-115.8</td></tr><tr><td>98.66</td><td>54.6</td><td>65.6</td><td>-88.8</td></tr><tr><td>98.05</td><td>53.5</td><td>56.0</td><td>-51.9</td></tr><tr><td>97.05</td><td>47.8</td><td>26.8</td><td>-9.1</td></tr><tr><td>96.40</td><td>41.8</td><td>0.0</td><td>0.0</td></tr></table> <p>Schnittgrößen (q,k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.48</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.04</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.97</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.86</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.67</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.57</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.37</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.78</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.64</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.91</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.66</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table>						103.22	-34.4	-72.4	-66.6	103.11	-35.7	-80.7	-74.9	103.04	-36.4	-85.6	-80.1	102.98	-37.2	-90.6	-85.6	102.97	-37.4	-92.0	-87.1	102.95	-37.6	-93.4	-88.7	102.86	-38.7	-100.9	-97.5	102.67	-41.1	-118.0	-118.0	102.65	-41.4	-119.8	-120.3	102.57	-42.4	-127.4	-130.2	102.55	-42.7	-129.3	-132.8	102.37	-31.7	-108.5	-153.9	102.11	-16.4	-80.1	-179.1	102.08	-14.8	-77.2	-181.4	101.78	-0.3	-50.0	-200.2	101.64	5.9	-37.7	-206.5	101.16	23.0	-0.6	-215.3	101.06	26.1	6.8	-214.9	100.69	35.5	29.4	-208.2	100.06	46.6	55.8	-180.1	99.91	48.4	59.5	-171.6	99.06	54.0	68.0	-115.8	98.66	54.6	65.6	-88.8	98.05	53.5	56.0	-51.9	97.05	47.8	26.8	-9.1	96.40	41.8	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.10	0.0	0.0	0.0	106.09	0.0	0.0	0.0	105.75	0.0	0.0	0.0	105.55	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.05	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.74	0.0	0.0	0.0	104.41	0.0	0.0	0.0	104.05	0.0	0.0	0.0	103.74	0.0	0.0	0.0	103.74	0.0	0.0	0.0	103.60	0.0	0.0	0.0	103.48	0.0	0.0	0.0	103.47	0.0	0.0	0.0	103.35	0.0	0.0	0.0	103.33	0.0	0.0	0.0	103.23	0.0	0.0	0.0	103.22	0.0	0.0	0.0	103.11	0.0	0.0	0.0	103.04	0.0	0.0	0.0	102.98	0.0	0.0	0.0	102.97	0.0	0.0	0.0	102.95	0.0	0.0	0.0	102.86	0.0	0.0	0.0	102.67	0.0	0.0	0.0	102.65	0.0	0.0	0.0	102.57	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.37	0.0	0.0	0.0	102.11	0.0	0.0	0.0	102.08	0.0	0.0	0.0	101.78	0.0	0.0	0.0	101.64	0.0	0.0	0.0	101.16	0.0	0.0	0.0	101.06	0.0	0.0	0.0	100.69	0.0	0.0	0.0	100.06	0.0	0.0	0.0	99.91	0.0	0.0	0.0	99.06	0.0	0.0	0.0	98.66	0.0	0.0	0.0
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Dipl.-Ing. A. Forster



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>98.050.00.00.0</div><div>97.050.00.00.0</div><div>96.400.00.00.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewkssig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>106.10-10.0--14.2614.26</div><div>106.09-10.0--14.1419.02</div><div>106.09-10.0--11.5311.53</div><div>106.04-9.9--11.4214.11</div><div>105.80-9.5--14.1114.11</div><div>105.75-9.40.000.000.00</div><div>105.75-9.40.000.000.00</div><div>105.70-9.30.000.004.75</div><div>105.60-9.21.5514.2614.26</div><div>105.55-9.11.5514.1419.02</div><div>105.55-9.11.2711.5311.53</div><div>105.50-9.01.2711.4214.11</div><div>105.50-9.01.5714.1114.11</div><div>105.45-8.91.5713.9816.68</div><div>105.10-8.44.1634.7434.73</div><div>105.05-8.34.1634.4037.31</div><div>105.05-8.34.5137.3137.31</div><div>105.00-8.24.5136.9539.89</div><div>105.00-8.24.8739.8939.89</div><div>104.95-8.14.8739.4841.23</div><div>104.79-7.95.0039.2745.26</div><div>104.74-7.85.0038.8546.60</div><div>104.74-7.85.0038.8546.60</div><div>104.69-7.75.0038.4647.81</div><div>104.46-7.35.0036.5353.89</div><div>104.41-7.25.0036.1555.11</div><div>104.41-7.25.0036.1555.11</div><div>104.36-7.15.0035.7356.43</div><div>104.10-6.75.0033.6163.08</div><div>104.05-6.65.0033.1964.41</div><div>104.05-6.65.0033.1964.41</div><div>104.00-6.65.0032.7765.74</div><div>103.79-6.25.0031.0971.05</div><div>103.74-6.15.0030.6772.38</div><div>103.74-6.15.0030.6784.11</div><div>103.74-6.15.0030.6584.18</div><div>103.74-6.15.0030.6584.18</div><div>103.69-6.15.0030.2885.33</div><div>103.65-6.05.0029.9286.49</div><div>103.60-5.95.0029.5687.64</div><div>103.60-5.95.0029.5687.64</div><div>103.54-5.85.0029.0689.24</div><div>103.54-5.85.0029.0689.24</div><div>103.48-5.75.0028.5690.84</div><div>103.48-5.75.0028.5690.84</div><div>103.47-5.75.0028.4691.16</div><div>103.47-5.75.0028.4691.16</div><div>103.41-5.65.0028.0192.60</div><div>103.41-5.65.0028.0192.60</div><div>103.35-5.55.0027.5794.05</div><div>103.35-5.55.0027.5794.05</div><div>103.33-5.55.0027.3394.81</div><div>103.33-5.55.0027.3394.81</div><div>103.28-5.45.0026.9596.03</div><div>103.28-5.45.0026.9596.03</div><div>103.23-5.35.0026.5897.25</div><div>103.23-5.35.0026.5897.25</div><div>103.22-5.35.0026.4697.63</div><div>103.22-5.35.0026.4697.63</div><div>103.16-5.25.0026.0399.04</div><div>103.16-5.25.0026.0399.04</div><div>103.11-5.15.0025.60100.46</div><div>103.11-5.15.0025.60100.46</div></div></div></div>					
Schnitt:		Anlage O2 Schnitt 6L		Seite Anlage O2/7	
Kapitel:		1 LF 1 (BS-T)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

statisch geprüft

21.7.

für

Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																				
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<table><tr><td>103.04</td><td>-5.0</td><td>5.00</td><td>25.12</td><td>102.06</td></tr><tr><td>103.04</td><td>-5.0</td><td>5.00</td><td>25.12</td><td>102.06</td></tr><tr><td>102.98</td><td>-4.9</td><td>5.00</td><td>24.63</td><td>103.66</td></tr><tr><td>102.98</td><td>-4.9</td><td>5.00</td><td>24.63</td><td>103.66</td></tr><tr><td>102.97</td><td>-4.9</td><td>5.00</td><td>24.50</td><td>104.09</td></tr><tr><td>102.97</td><td>-4.9</td><td>5.00</td><td>24.50</td><td>104.09</td></tr><tr><td>102.95</td><td>-4.9</td><td>5.00</td><td>24.37</td><td>104.54</td></tr><tr><td>102.95</td><td>-4.9</td><td>5.00</td><td>24.37</td><td>104.54</td></tr><tr><td>102.90</td><td>-4.8</td><td>5.00</td><td>24.02</td><td>105.70</td></tr><tr><td>102.90</td><td>-4.8</td><td>5.00</td><td>24.02</td><td>105.70</td></tr><tr><td>102.86</td><td>-4.7</td><td>5.00</td><td>23.68</td><td>106.86</td></tr><tr><td>102.86</td><td>-4.7</td><td>5.00</td><td>23.68</td><td>106.86</td></tr><tr><td>102.81</td><td>-4.7</td><td>5.00</td><td>23.32</td><td>108.07</td></tr><tr><td>102.72</td><td>-4.5</td><td>5.00</td><td>22.61</td><td>110.49</td></tr><tr><td>102.67</td><td>-4.5</td><td>5.00</td><td>22.26</td><td>111.69</td></tr><tr><td>102.67</td><td>-4.5</td><td>5.00</td><td>22.26</td><td>111.69</td></tr><tr><td>102.65</td><td>-4.4</td><td>5.00</td><td>22.11</td><td>112.20</td></tr><tr><td>102.65</td><td>-4.4</td><td>5.00</td><td>22.11</td><td>112.20</td></tr><tr><td>102.61</td><td>-4.4</td><td>5.00</td><td>21.81</td><td>113.24</td></tr><tr><td>102.61</td><td>-4.4</td><td>5.00</td><td>21.81</td><td>113.24</td></tr><tr><td>102.57</td><td>-4.3</td><td>5.00</td><td>21.52</td><td>114.27</td></tr><tr><td>102.57</td><td>-4.3</td><td>5.00</td><td>21.52</td><td>114.27</td></tr><tr><td>102.55</td><td>-4.3</td><td>5.00</td><td>21.36</td><td>114.80</td></tr><tr><td>102.55</td><td>-4.3</td><td>47.75</td><td>204.05</td><td>204.05</td></tr><tr><td>102.51</td><td>-4.2</td><td>47.75</td><td>200.95</td><td>207.10</td></tr><tr><td>102.42</td><td>-4.1</td><td>50.00</td><td>203.99</td><td>213.21</td></tr><tr><td>102.37</td><td>-4.0</td><td>50.00</td><td>200.82</td><td>216.26</td></tr><tr><td>102.37</td><td>-4.0</td><td>50.00</td><td>200.82</td><td>216.26</td></tr><tr><td>102.32</td><td>-3.9</td><td>50.00</td><td>197.02</td><td>219.96</td></tr><tr><td>102.16</td><td>-3.7</td><td>50.00</td><td>185.84</td><td>231.06</td></tr><tr><td>102.11</td><td>-3.6</td><td>50.00</td><td>182.20</td><td>234.76</td></tr><tr><td>102.11</td><td>-3.6</td><td>50.00</td><td>182.20</td><td>234.76</td></tr><tr><td>102.08</td><td>-3.6</td><td>50.00</td><td>180.22</td><td>236.79</td></tr><tr><td>102.08</td><td>-3.6</td><td>50.00</td><td>180.22</td><td>236.79</td></tr><tr><td>102.03</td><td>-3.5</td><td>50.00</td><td>176.92</td><td>240.21</td></tr><tr><td>101.83</td><td>-3.3</td><td>50.00</td><td>164.08</td><td>253.90</td></tr><tr><td>101.78</td><td>-3.2</td><td>50.00</td><td>160.98</td><td>257.32</td></tr><tr><td>101.78</td><td>-3.2</td><td>50.00</td><td>160.98</td><td>257.32</td></tr><tr><td>101.73</td><td>-3.2</td><td>50.00</td><td>158.01</td><td>260.63</td></tr><tr><td>101.68</td><td>-3.1</td><td>50.00</td><td>155.09</td><td>263.93</td></tr><tr><td>101.64</td><td>-3.0</td><td>50.00</td><td>152.21</td><td>267.24</td></tr><tr><td>101.64</td><td>-3.0</td><td>50.00</td><td>152.21</td><td>267.24</td></tr><tr><td>101.58</td><td>-3.0</td><td>50.00</td><td>149.11</td><td>270.85</td></tr><tr><td>101.22</td><td>-2.6</td><td>50.00</td><td>128.77</td><td>296.11</td></tr><tr><td>101.16</td><td>-2.5</td><td>50.00</td><td>126.06</td><td>299.72</td></tr><tr><td>101.16</td><td>-2.5</td><td>50.00</td><td>126.06</td><td>299.72</td></tr><tr><td>101.11</td><td>-2.5</td><td>50.00</td><td>123.41</td><td>303.33</td></tr><tr><td>101.11</td><td>-2.5</td><td>50.00</td><td>123.41</td><td>303.33</td></tr><tr><td>101.06</td><td>-2.4</td><td>50.00</td><td>120.80</td><td>306.94</td></tr><tr><td>101.06</td><td>-2.4</td><td>50.00</td><td>120.80</td><td>306.94</td></tr><tr><td>101.01</td><td>-2.4</td><td>50.00</td><td>118.24</td><td>310.55</td></tr><tr><td>100.75</td><td>-2.1</td><td>50.00</td><td>106.20</td><td>328.59</td></tr><tr><td>100.69</td><td>-2.1</td><td>50.00</td><td>103.94</td><td>332.20</td></tr><tr><td>100.69</td><td>-2.1</td><td>50.00</td><td>103.94</td><td>332.20</td></tr><tr><td>100.65</td><td>-2.0</td><td>50.00</td><td>101.86</td><td>335.58</td></tr><tr><td>100.11</td><td>-1.6</td><td>50.00</td><td>81.71</td><td>372.80</td></tr><tr><td>100.06</td><td>-1.6</td><td>50.00</td><td>80.11</td><td>376.18</td></tr><tr><td>100.06</td><td>-1.6</td><td>50.00</td><td>80.11</td><td>376.18</td></tr><tr><td>100.01</td><td>-1.6</td><td>50.00</td><td>78.55</td><td>379.56</td></tr><tr><td>99.96</td><td>-1.5</td><td>50.00</td><td>77.02</td><td>382.95</td></tr><tr><td>99.91</td><td>-1.5</td><td>50.00</td><td>75.53</td><td>386.33</td></tr><tr><td>99.91</td><td>-1.5</td><td>50.00</td><td>75.53</td><td>386.33</td></tr><tr><td>99.86</td><td>-1.5</td><td>50.00</td><td>74.04</td><td>389.79</td></tr><tr><td>99.11</td><td>-1.1</td><td>50.00</td><td>55.64</td><td>441.77</td></tr><tr><td>99.06</td><td>-1.1</td><td>50.00</td><td>54.64</td><td>445.24</td></tr><tr><td>99.06</td><td>-1.1</td><td>50.00</td><td>54.64</td><td>445.24</td></tr><tr><td>99.01</td><td>-1.1</td><td>50.00</td><td>53.67</td><td>448.70</td></tr><tr><td>98.71</td><td>-1.0</td><td>50.00</td><td>48.32</td><td>469.49</td></tr><tr><td>98.66</td><td>-1.0</td><td>50.00</td><td>47.50</td><td>472.96</td></tr><tr><td>98.66</td><td>-1.0</td><td>50.00</td><td>47.50</td><td>472.96</td></tr><tr><td>98.61</td><td>-0.9</td><td>50.00</td><td>46.70</td><td>476.42</td></tr></table>							103.04	-5.0	5.00	25.12	102.06	103.04	-5.0	5.00	25.12	102.06	102.98	-4.9	5.00	24.63	103.66	102.98	-4.9	5.00	24.63	103.66	102.97	-4.9	5.00	24.50	104.09	102.97	-4.9	5.00	24.50	104.09	102.95	-4.9	5.00	24.37	104.54	102.95	-4.9	5.00	24.37	104.54	102.90	-4.8	5.00	24.02	105.70	102.90	-4.8	5.00	24.02	105.70	102.86	-4.7	5.00	23.68	106.86	102.86	-4.7	5.00	23.68	106.86	102.81	-4.7	5.00	23.32	108.07	102.72	-4.5	5.00	22.61	110.49	102.67	-4.5	5.00	22.26	111.69	102.67	-4.5	5.00	22.26	111.69	102.65	-4.4	5.00	22.11	112.20	102.65	-4.4	5.00	22.11	112.20	102.61	-4.4	5.00	21.81	113.24	102.61	-4.4	5.00	21.81	113.24	102.57	-4.3	5.00	21.52	114.27	102.57	-4.3	5.00	21.52	114.27	102.55	-4.3	5.00	21.36	114.80	102.55	-4.3	47.75	204.05	204.05	102.51	-4.2	47.75	200.95	207.10	102.42	-4.1	50.00	203.99	213.21	102.37	-4.0	50.00	200.82	216.26	102.37	-4.0	50.00	200.82	216.26	102.32	-3.9	50.00	197.02	219.96	102.16	-3.7	50.00	185.84	231.06	102.11	-3.6	50.00	182.20	234.76	102.11	-3.6	50.00	182.20	234.76	102.08	-3.6	50.00	180.22	236.79	102.08	-3.6	50.00	180.22	236.79	102.03	-3.5	50.00	176.92	240.21	101.83	-3.3	50.00	164.08	253.90	101.78	-3.2	50.00	160.98	257.32	101.78	-3.2	50.00	160.98	257.32	101.73	-3.2	50.00	158.01	260.63	101.68	-3.1	50.00	155.09	263.93	101.64	-3.0	50.00	152.21	267.24	101.64	-3.0	50.00	152.21	267.24	101.58	-3.0	50.00	149.11	270.85	101.22	-2.6	50.00	128.77	296.11	101.16	-2.5	50.00	126.06	299.72	101.16	-2.5	50.00	126.06	299.72	101.11	-2.5	50.00	123.41	303.33	101.11	-2.5	50.00	123.41	303.33	101.06	-2.4	50.00	120.80	306.94	101.06	-2.4	50.00	120.80	306.94	101.01	-2.4	50.00	118.24	310.55	100.75	-2.1	50.00	106.20	328.59	100.69	-2.1	50.00	103.94	332.20	100.69	-2.1	50.00	103.94	332.20	100.65	-2.0	50.00	101.86	335.58	100.11	-1.6	50.00	81.71	372.80	100.06	-1.6	50.00	80.11	376.18	100.06	-1.6	50.00	80.11	376.18	100.01	-1.6	50.00	78.55	379.56	99.96	-1.5	50.00	77.02	382.95	99.91	-1.5	50.00	75.53	386.33	99.91	-1.5	50.00	75.53	386.33	99.86	-1.5	50.00	74.04	389.79	99.11	-1.1	50.00	55.64	441.77	99.06	-1.1	50.00	54.64	445.24	99.06	-1.1	50.00	54.64	445.24	99.01	-1.1	50.00	53.67	448.70	98.71	-1.0	50.00	48.32	469.49	98.66	-1.0	50.00	47.50	472.96	98.66	-1.0	50.00	47.50	472.96	98.61	-0.9	50.00	46.70	476.42
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102.42	-4.1	50.00	203.99	213.21																																																																																																																																																																																																																																																																																																																																																																					
102.37	-4.0	50.00	200.82	216.26																																																																																																																																																																																																																																																																																																																																																																					
102.37	-4.0	50.00	200.82	216.26																																																																																																																																																																																																																																																																																																																																																																					
102.32	-3.9	50.00	197.02	219.96																																																																																																																																																																																																																																																																																																																																																																					
102.16	-3.7	50.00	185.84	231.06																																																																																																																																																																																																																																																																																																																																																																					
102.11	-3.6	50.00	182.20	234.76																																																																																																																																																																																																																																																																																																																																																																					
102.11	-3.6	50.00	182.20	234.76																																																																																																																																																																																																																																																																																																																																																																					
102.08	-3.6	50.00	180.22	236.79																																																																																																																																																																																																																																																																																																																																																																					
102.08	-3.6	50.00	180.22	236.79																																																																																																																																																																																																																																																																																																																																																																					
102.03	-3.5	50.00	176.92	240.21																																																																																																																																																																																																																																																																																																																																																																					
101.83	-3.3	50.00	164.08	253.90																																																																																																																																																																																																																																																																																																																																																																					
101.78	-3.2	50.00	160.98	257.32																																																																																																																																																																																																																																																																																																																																																																					
101.78	-3.2	50.00	160.98	257.32																																																																																																																																																																																																																																																																																																																																																																					
101.73	-3.2	50.00	158.01	260.63																																																																																																																																																																																																																																																																																																																																																																					
101.68	-3.1	50.00	155.09	263.93																																																																																																																																																																																																																																																																																																																																																																					
101.64	-3.0	50.00	152.21	267.24																																																																																																																																																																																																																																																																																																																																																																					
101.64	-3.0	50.00	152.21	267.24																																																																																																																																																																																																																																																																																																																																																																					
101.58	-3.0	50.00	149.11	270.85																																																																																																																																																																																																																																																																																																																																																																					
101.22	-2.6	50.00	128.77	296.11																																																																																																																																																																																																																																																																																																																																																																					
101.16	-2.5	50.00	126.06	299.72																																																																																																																																																																																																																																																																																																																																																																					
101.16	-2.5	50.00	126.06	299.72																																																																																																																																																																																																																																																																																																																																																																					
101.11	-2.5	50.00	123.41	303.33																																																																																																																																																																																																																																																																																																																																																																					
101.11	-2.5	50.00	123.41	303.33																																																																																																																																																																																																																																																																																																																																																																					
101.06	-2.4	50.00	120.80	306.94																																																																																																																																																																																																																																																																																																																																																																					
101.06	-2.4	50.00	120.80	306.94																																																																																																																																																																																																																																																																																																																																																																					
101.01	-2.4	50.00	118.24	310.55																																																																																																																																																																																																																																																																																																																																																																					
100.75	-2.1	50.00	106.20	328.59																																																																																																																																																																																																																																																																																																																																																																					
100.69	-2.1	50.00	103.94	332.20																																																																																																																																																																																																																																																																																																																																																																					
100.69	-2.1	50.00	103.94	332.20																																																																																																																																																																																																																																																																																																																																																																					
100.65	-2.0	50.00	101.86	335.58																																																																																																																																																																																																																																																																																																																																																																					
100.11	-1.6	50.00	81.71	372.80																																																																																																																																																																																																																																																																																																																																																																					
100.06	-1.6	50.00	80.11	376.18																																																																																																																																																																																																																																																																																																																																																																					
100.06	-1.6	50.00	80.11	376.18																																																																																																																																																																																																																																																																																																																																																																					
100.01	-1.6	50.00	78.55	379.56																																																																																																																																																																																																																																																																																																																																																																					
99.96	-1.5	50.00	77.02	382.95																																																																																																																																																																																																																																																																																																																																																																					
99.91	-1.5	50.00	75.53	386.33																																																																																																																																																																																																																																																																																																																																																																					
99.91	-1.5	50.00	75.53	386.33																																																																																																																																																																																																																																																																																																																																																																					
99.86	-1.5	50.00	74.04	389.79																																																																																																																																																																																																																																																																																																																																																																					
99.11	-1.1	50.00	55.64	441.77																																																																																																																																																																																																																																																																																																																																																																					
99.06	-1.1	50.00	54.64	445.24																																																																																																																																																																																																																																																																																																																																																																					
99.06	-1.1	50.00	54.64	445.24																																																																																																																																																																																																																																																																																																																																																																					
99.01	-1.1	50.00	53.67	448.70																																																																																																																																																																																																																																																																																																																																																																					
98.71	-1.0	50.00	48.32	469.49																																																																																																																																																																																																																																																																																																																																																																					
98.66	-1.0	50.00	47.50	472.96																																																																																																																																																																																																																																																																																																																																																																					
98.66	-1.0	50.00	47.50	472.96																																																																																																																																																																																																																																																																																																																																																																					
98.61	-0.9	50.00	46.70	476.42																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage O2 Schnitt 6L			Seite Anlage O2/8																																																																																																																																																																																																																																																																																																																																																																				
Kapitel:		1 LF 1 (BS-T)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																				
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																				

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

98.10	-0.8	50.00	39.60	511.07
98.05	-0.8	50.00	38.97	514.54
98.05	-0.8	50.00	38.97	514.54
98.00	-0.8	50.00	38.34	518.00
97.10	-0.6	50.00	28.39	580.38
97.05	-0.6	50.00	27.88	583.84
97.05	-0.6	50.00	27.88	583.84
97.00	-0.5	50.00	27.37	587.31
96.45	-0.4	50.00	21.83	625.42
96.40	-0.4	50.00	21.33	628.89

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.01144887$
Theoretischer Fußpunkt = 96.399 m

Einbindetiefe $t_g = 9.35$ m
Profillänge = 9.70 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G'_{,k} + E_{av,k} \geq B_{v,k}$
 $G_{,k} = 183.55$ kN/m
 $G'_{,k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 81.50$ kN/m ($E_{ah,k} = 450.13$ kN/m)
 $B_{v,k} = 225.34$
Summe $V_{,k} = 39.72$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 97.28 bis 93.76 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
105.75	105.55	0.00	S1: Auffüllungen
105.55	103.74	0.00	S2: Auelehm (über GS)
103.74	102.55	0.00	S2: Auelehm (unter GS)
102.55	96.40	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.40 m = 1.000 m²/m/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 338.25 / 1.40 = 241.61$ kN/m
 $R_{,d} = R_{b,d} + R_{s1,d} = 1106.66$ kN/m

Einwirkungen
 $V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 220.26 - 0.00 + 93.73 + 0.00 = 313.99$ kN/m
 $\Rightarrow \mu = V_{,d} / R_{,d} = 313.99 / 1106.66 = 0.28$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage O2 Schnitt 6L	Seite Anlage 02/9
Kapitel: 1 LF 1 (BS-T)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2LF 2 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 12_BS 6_LF2.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 83.10 2.13 103.74 102.86 100.69 nein 2 10.00 2.63 103.74 102.65 99.91 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.00 0.00 0.33 103.74 103.74 103.74 103.47 103.33 nein 2 117.67 0.33 0.63 103.74 103.60 103.33 103.22 102.95 nein 3 111.80 0.63 0.93 103.74 103.48 102.95 102.97 102.57 nein 4 105.93 0.93 1.23 103.74 103.35 102.57 102.67 102.11 nein 5 100.07 1.23 1.53 103.74 103.23 102.11 102.37 101.64 nein 6 94.20 1.53 1.83 103.74 103.11 101.64 102.08 101.16 nein 7 88.33 1.83 2.13 103.74 102.98 101.16 101.78 100.69 nein</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.00 106.09 104.74 Ständig</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage 02/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Kraftränder

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	104.41	0.00	0.00	-101.70	0.00	0.00	0.00

Erddruckumlagerung: EAB 2012 Bild EB 70-1.c

Art des Fußlagers:
 Profillänge von 9.70 m fest und Fuß gebettet

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 495.786 / 739.809 = 0.670$
 Bettungslager $B_{h,d} = 495.786 \text{ kN/m}$
 Erdwiderstand $E_{ph,d} = 739.809 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	N _{w,k}	EA	EI	N _{d'}
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-193.83	-168.02	-168.02	-93.43	6.900E+4	2.100E+7	-214.22

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
 max $M_{d'}$ [kN·m/m]: 0.00
 gelenkig an Verbauwand angeschlossen
 gegenüberliegende Seite gelenkig

x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-9.4	0.0	-197.89	0.00	0.00
-0.90	105.00	-9.7	0.0	-197.89	0.00	0.00
-0.90	105.00	-9.7	0.0	-197.89	0.00	0.00
-0.80	105.00	-10.0	0.0	-197.89	0.00	0.00
-0.70	105.00	-10.3	0.0	-197.89	0.00	0.00
-0.60	105.00	-10.6	0.0	-197.89	0.00	0.00
-0.50	105.00	-10.9	0.0	-197.89	0.00	0.00
-0.40	105.00	-11.1	0.0	-197.89	0.00	0.00
-0.30	105.00	-11.4	0.0	-197.89	0.00	0.00
-0.20	105.00	-11.7	0.0	-197.89	0.00	0.00
-0.10	105.00	-12.0	0.0	-197.89	0.00	0.00
0.00	105.00	-12.3	0.0	-197.89	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
 Vorverformungen wurden aus der Datei
 P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 6\Linkes Ufer\11_BS 6_LF1.vrb
 eingelesen.


Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	105.00	-0.0082

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.55	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.55	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt: Anlage O2 Schnitt 6L	Seite Anlage 02/11
Kapitel: 2 LF 2 (BS-T)	Archiv Nr. 11
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																												
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																										
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.55</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.100</td><td>106.090</td><td>35.434</td><td>35.434</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.550</td><td>35.434</td><td>35.434</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>35.434</td><td>35.434</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.050</td><td>35.434</td><td>35.434</td><td>0.00</td><td>4.50</td></tr><tr><td>105.050</td><td>105.000</td><td>35.434</td><td>35.434</td><td>4.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.740</td><td>35.434</td><td>35.434</td><td>5.00</td><td>5.00</td></tr><tr><td>104.740</td><td>104.410</td><td>35.434</td><td>35.434</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.049</td><td>35.434</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>104.049</td><td>103.740</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.740</td><td>103.603</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.603</td><td>103.479</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.479</td><td>103.467</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.467</td><td>103.355</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.355</td><td>103.325</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.325</td><td>103.231</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.231</td><td>103.216</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.216</td><td>103.106</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.106</td><td>103.100</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>103.100</td><td>102.982</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.982</td><td>102.965</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.965</td><td>102.948</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.948</td><td>102.858</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.858</td><td>102.670</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.670</td><td>102.651</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.651</td><td>102.570</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.570</td><td>102.550</td><td>23.622</td><td>23.622</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.373</td><td>79.463</td><td>83.733</td><td>5.00</td><td>5.00</td></tr><tr><td>102.373</td><td>102.105</td><td>83.733</td><td>77.247</td><td>5.00</td><td>5.00</td></tr><tr><td>102.105</td><td>102.076</td><td>77.247</td><td>77.568</td><td>5.00</td><td>5.00</td></tr><tr><td>102.076</td><td>101.828</td><td>77.568</td><td>71.140</td><td>5.00</td><td>5.00</td></tr><tr><td>101.828</td><td>101.779</td><td>71.140</td><td>69.854</td><td>5.00</td><td>5.00</td></tr><tr><td>101.779</td><td>101.635</td><td>69.854</td><td>61.954</td><td>5.00</td><td>5.00</td></tr><tr><td>101.635</td><td>101.165</td><td>61.954</td><td>48.084</td><td>5.00</td><td>5.00</td></tr><tr><td>101.165</td><td>101.060</td><td>48.084</td><td>47.044</td><td>5.00</td><td>5.00</td></tr><tr><td>101.060</td><td>100.695</td><td>47.044</td><td>43.403</td><td>5.00</td><td>5.00</td></tr><tr><td>100.695</td><td>100.058</td><td>43.403</td><td>46.844</td><td>5.00</td><td>5.00</td></tr><tr><td>100.058</td><td>100.009</td><td>46.844</td><td>47.108</td><td>5.00</td><td>5.00</td></tr><tr><td>100.009</td><td>99.911</td><td>47.108</td><td>47.638</td><td>5.00</td><td>5.00</td></tr><tr><td>99.911</td><td>99.058</td><td>47.638</td><td>51.136</td><td>5.00</td><td>5.00</td></tr><tr><td>99.058</td><td>98.054</td><td>51.136</td><td>55.252</td><td>5.00</td><td>5.00</td></tr><tr><td>98.054</td><td>97.051</td><td>55.252</td><td>59.367</td><td>5.00</td><td>5.00</td></tr><tr><td>97.051</td><td>96.399</td><td>59.367</td><td>62.042</td><td>5.00</td><td>5.00</td></tr><tr><td>96.399</td><td>80.000</td><td>62.042</td><td>129.303</td><td>5.00</td><td>5.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.55	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.55	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	35.434	35.434	0.00	0.00	106.090	105.550	35.434	35.434	0.00	0.00	105.550	105.500	35.434	35.434	0.00	0.00	105.500	105.050	35.434	35.434	0.00	4.50	105.050	105.000	35.434	35.434	4.50	5.00	105.000	104.740	35.434	35.434	5.00	5.00	104.740	104.410	35.434	35.434	5.00	5.00	104.410	104.049	35.434	23.622	5.00	5.00	104.049	103.740	23.622	23.622	5.00	5.00	103.740	103.603	23.622	23.622	5.00	5.00	103.603	103.479	23.622	23.622	5.00	5.00	103.479	103.467	23.622	23.622	5.00	5.00	103.467	103.355	23.622	23.622	5.00	5.00	103.355	103.325	23.622	23.622	5.00	5.00	103.325	103.231	23.622	23.622	5.00	5.00	103.231	103.216	23.622	23.622	5.00	5.00	103.216	103.106	23.622	23.622	5.00	5.00	103.106	103.100	23.622	23.622	5.00	5.00	103.100	102.982	23.622	23.622	5.00	5.00	102.982	102.965	23.622	23.622	5.00	5.00	102.965	102.948	23.622	23.622	5.00	5.00	102.948	102.858	23.622	23.622	5.00	5.00	102.858	102.670	23.622	23.622	5.00	5.00	102.670	102.651	23.622	23.622	5.00	5.00	102.651	102.570	23.622	23.622	5.00	5.00	102.570	102.550	23.622	23.622	5.00	5.00	102.550	102.373	79.463	83.733	5.00	5.00	102.373	102.105	83.733	77.247	5.00	5.00	102.105	102.076	77.247	77.568	5.00	5.00	102.076	101.828	77.568	71.140	5.00	5.00	101.828	101.779	71.140	69.854	5.00	5.00	101.779	101.635	69.854	61.954	5.00	5.00	101.635	101.165	61.954	48.084	5.00	5.00	101.165	101.060	48.084	47.044	5.00	5.00	101.060	100.695	47.044	43.403	5.00	5.00	100.695	100.058	43.403	46.844	5.00	5.00	100.058	100.009	46.844	47.108	5.00	5.00	100.009	99.911	47.108	47.638	5.00	5.00	99.911	99.058	47.638	51.136	5.00	5.00	99.058	98.054	51.136	55.252	5.00	5.00	98.054	97.051	55.252	59.367	5.00	5.00	97.051	96.399	59.367	62.042	5.00	5.00	96.399	80.000	62.042	129.303	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																					
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4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																					
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102.373	102.105	83.733	77.247	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/12																																																																																																																																																																																																																																																																																																																																										
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpg_h kp_{ch} phi_k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.57 102.55 0.00 0.00 102.55 102.37 0.00 -7.52 102.37 102.11 -7.52 -18.90 102.11 102.08 -18.90 -20.15 102.08 101.83 -20.15 -30.68 101.83 101.78 -30.68 -32.79 101.78 101.64 -32.79 -38.89 101.64 101.16 -38.89 -58.88 101.16 101.06 -58.88 -63.32 101.06 100.69 -63.32 -78.86 100.69 100.06 -78.86 -105.93 100.06 100.01 -105.93 -108.01 100.01 99.91 -108.01 -112.17 99.91 99.06 -112.17 -148.42 99.06 98.05 -148.42 -191.07 98.05 97.05 -191.07 -233.72 97.05 96.40 -233.72 -261.44 96.40 80.00 -261.44 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.10 0.0 0.0 0.0 106.09 -0.2 -0.4 0.0 105.55 -12.0 -22.4 -6.2 105.50 -13.1 -24.4 -7.3 105.05 -22.8 -44.0 -22.6 105.00 -23.9 -46.3 -24.9 -197.9 105.00 -23.9 151.6 -24.9 104.74 -29.6 139.4 12.9 104.41 -36.8 124.0 56.4 104.41 -36.8 1.9 56.4 104.05 -44.6 -10.7 54.7 103.74 -51.4 -21.0 49.8 103.60 -55.3 -25.5 46.6 103.48 -58.9 -29.6 43.2 103.47 -59.3 -30.0 42.8 103.35 -62.5 -33.8 39.3 103.33 -63.4 -34.7 38.2 103.23 -66.2 -37.9 34.8 103.22 -66.6 -38.4 34.2 103.11 -69.8 -42.0 29.8 103.10 -69.9 -42.2 29.6 102.98 -73.4 -46.1 24.4 102.97 -73.9 -46.7 23.6 102.95 -74.4 -47.3 22.8 102.86 -77.0 -50.2 18.4 102.67 -82.4 -56.4 8.4 102.65 -83.0 -57.1 7.3 102.57 -85.3 -59.8 2.6 102.55 -85.9 -60.4 1.4 102.37 -91.0 -77.2 -10.8 102.11 -94.4 -97.5 -34.4 102.08 -94.6 -99.3 -37.3 101.83 -95.6 -110.7 -63.4 101.78 -95.5 -112.2 -69.0 101.64 -94.9 -114.6 -85.3 101.16 -88.5 -105.2 -137.9 101.06 -86.2 -99.9 -148.6 100.69 -75.2 -73.4 -180.7</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>100.06 -47.0 -4.1 -206.4</div><div>100.01 -44.8 1.1 -206.4</div><div>99.91 -40.6 11.1 -205.8</div><div>99.06 -14.7 69.9 -167.9</div><div>98.05 -4.4 83.6 -86.4</div><div>97.05 -11.7 47.7 -16.6</div><div>96.40 -24.1 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div><div>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 -0.4 0.0</div><div>105.55 -10.4 -19.5 -5.4</div><div>105.50 -11.4 -21.3 -6.4</div><div>105.05 -19.9 -38.2 -19.7</div><div>105.00 -20.8 -40.2 -21.6 -168.0</div><div>105.00 -20.8 127.8 -21.6</div><div>104.74 -25.7 117.3 10.2</div><div>104.41 -32.0 103.9 46.7</div><div>104.41 -32.0 2.2 46.7</div><div>104.05 -38.8 -8.7 45.4</div><div>103.74 -44.7 -17.6 41.4</div><div>103.60 -48.1 -21.5 38.7</div><div>103.48 -51.2 -25.0 35.8</div><div>103.47 -51.6 -25.4 35.5</div><div>103.35 -54.4 -28.6 32.5</div><div>103.33 -55.1 -29.4 31.6</div><div>103.23 -57.5 -32.1 28.7</div><div>103.22 -57.9 -32.6 28.3</div><div>103.11 -60.7 -35.7 24.5</div><div>103.10 -60.8 -35.9 24.3</div><div>102.98 -63.8 -39.2 19.9</div><div>102.97 -64.2 -39.7 19.2</div><div>102.95 -64.7 -40.2 18.5</div><div>102.86 -66.9 -42.8 14.8</div><div>102.67 -71.7 -48.2 6.2</div><div>102.65 -72.2 -48.7 5.3</div><div>102.57 -74.2 -51.0 1.3</div><div>102.55 -74.7 -51.6 0.2</div><div>102.37 -79.1 -66.1 -10.2</div><div>102.11 -82.1 -83.8 -30.4</div><div>102.08 -82.3 -85.3 -32.9</div><div>101.83 -83.1 -95.2 -55.4</div><div>101.78 -83.1 -96.5 -60.1</div><div>101.64 -82.6 -98.7 -74.2</div><div>101.16 -77.1 -90.7 -119.5</div><div>101.06 -75.1 -86.1 -128.8</div><div>100.69 -65.6 -63.2 -156.4</div><div>100.06 -41.2 -3.4 -178.5</div><div>100.01 -39.3 1.1 -178.5</div><div>99.91 -35.7 9.7 -178.0</div><div>99.06 -13.3 60.4 -145.1</div><div>98.05 -4.3 72.3 -74.6</div><div>97.05 -10.8 41.2 -14.3</div><div>96.40 -21.6 0.0 0.0</div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div><div>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 -0.4 0.0</div><div>105.55 -10.4 -19.5 -5.4</div><div>105.50 -11.4 -21.3 -6.4</div><div>105.05 -19.9 -38.2 -19.7</div><div>105.00 -20.8 -40.2 -21.6 -168.0</div><div>105.00 -20.8 127.8 -21.6</div><div>104.74 -25.7 117.3 10.2</div><div>104.41 -32.0 103.9 46.7</div><div>104.41 -32.0 2.2 46.7</div><div>104.05 -38.8 -8.7 45.4</div></div></div></div></div>					
Schnitt:		Anlage O2 Schnitt 6L		Seite Anlage O2/14	
Kapitel:		2 LF 2 (BS-T)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																											
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<table><tr><td>103.74</td><td>-44.7</td><td>-17.6</td><td>41.4</td></tr><tr><td>103.60</td><td>-48.1</td><td>-21.5</td><td>38.7</td></tr><tr><td>103.48</td><td>-51.2</td><td>-25.0</td><td>35.8</td></tr><tr><td>103.47</td><td>-51.6</td><td>-25.4</td><td>35.5</td></tr><tr><td>103.35</td><td>-54.4</td><td>-28.6</td><td>32.5</td></tr><tr><td>103.33</td><td>-55.1</td><td>-29.4</td><td>31.6</td></tr><tr><td>103.23</td><td>-57.5</td><td>-32.1</td><td>28.7</td></tr><tr><td>103.22</td><td>-57.9</td><td>-32.6</td><td>28.3</td></tr><tr><td>103.11</td><td>-60.7</td><td>-35.7</td><td>24.5</td></tr><tr><td>103.10</td><td>-60.8</td><td>-35.9</td><td>24.3</td></tr><tr><td>102.98</td><td>-63.8</td><td>-39.2</td><td>19.9</td></tr><tr><td>102.97</td><td>-64.2</td><td>-39.7</td><td>19.2</td></tr><tr><td>102.95</td><td>-64.7</td><td>-40.2</td><td>18.5</td></tr><tr><td>102.86</td><td>-66.9</td><td>-42.8</td><td>14.8</td></tr><tr><td>102.67</td><td>-71.7</td><td>-48.2</td><td>6.2</td></tr><tr><td>102.65</td><td>-72.2</td><td>-48.7</td><td>5.3</td></tr><tr><td>102.57</td><td>-74.2</td><td>-51.0</td><td>1.3</td></tr><tr><td>102.55</td><td>-74.7</td><td>-51.6</td><td>0.2</td></tr><tr><td>102.37</td><td>-79.1</td><td>-66.1</td><td>-10.2</td></tr><tr><td>102.11</td><td>-82.1</td><td>-83.8</td><td>-30.4</td></tr><tr><td>102.08</td><td>-82.3</td><td>-85.3</td><td>-32.9</td></tr><tr><td>101.83</td><td>-83.1</td><td>-95.2</td><td>-55.4</td></tr><tr><td>101.78</td><td>-83.1</td><td>-96.5</td><td>-60.1</td></tr><tr><td>101.64</td><td>-82.6</td><td>-98.7</td><td>-74.2</td></tr><tr><td>101.16</td><td>-77.1</td><td>-90.7</td><td>-119.5</td></tr><tr><td>101.06</td><td>-75.1</td><td>-86.1</td><td>-128.8</td></tr><tr><td>100.69</td><td>-65.6</td><td>-63.2</td><td>-156.4</td></tr><tr><td>100.06</td><td>-41.2</td><td>-3.4</td><td>-178.5</td></tr><tr><td>100.01</td><td>-39.3</td><td>1.1</td><td>-178.5</td></tr><tr><td>99.91</td><td>-35.7</td><td>9.7</td><td>-178.0</td></tr><tr><td>99.06</td><td>-13.3</td><td>60.4</td><td>-145.1</td></tr><tr><td>98.05</td><td>-4.3</td><td>72.3</td><td>-74.6</td></tr><tr><td>97.05</td><td>-10.8</td><td>41.2</td><td>-14.3</td></tr><tr><td>96.40</td><td>-21.6</td><td>0.0</td><td>0.0</td></tr></table> <div><div>Schnittgrößen (q,k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-81.2</td><td></td></tr><tr><td>104.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.97</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.86</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.67</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.57</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.83</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.78</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.64</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table></div>						103.74	-44.7	-17.6	41.4	103.60	-48.1	-21.5	38.7	103.48	-51.2	-25.0	35.8	103.47	-51.6	-25.4	35.5	103.35	-54.4	-28.6	32.5	103.33	-55.1	-29.4	31.6	103.23	-57.5	-32.1	28.7	103.22	-57.9	-32.6	28.3	103.11	-60.7	-35.7	24.5	103.10	-60.8	-35.9	24.3	102.98	-63.8	-39.2	19.9	102.97	-64.2	-39.7	19.2	102.95	-64.7	-40.2	18.5	102.86	-66.9	-42.8	14.8	102.67	-71.7	-48.2	6.2	102.65	-72.2	-48.7	5.3	102.57	-74.2	-51.0	1.3	102.55	-74.7	-51.6	0.2	102.37	-79.1	-66.1	-10.2	102.11	-82.1	-83.8	-30.4	102.08	-82.3	-85.3	-32.9	101.83	-83.1	-95.2	-55.4	101.78	-83.1	-96.5	-60.1	101.64	-82.6	-98.7	-74.2	101.16	-77.1	-90.7	-119.5	101.06	-75.1	-86.1	-128.8	100.69	-65.6	-63.2	-156.4	100.06	-41.2	-3.4	-178.5	100.01	-39.3	1.1	-178.5	99.91	-35.7	9.7	-178.0	99.06	-13.3	60.4	-145.1	98.05	-4.3	72.3	-74.6	97.05	-10.8	41.2	-14.3	96.40	-21.6	0.0	0.0	Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.10	0.0	0.0	0.0			106.09	0.0	0.0	0.0			105.55	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.05	0.0	0.0	0.0			105.00	0.0	0.0	0.0	-81.2		104.74	0.0	0.0	0.0			104.41	0.0	0.0	0.0			104.05	0.0	0.0	0.0			103.74	0.0	0.0	0.0			103.60	0.0	0.0	0.0			103.48	0.0	0.0	0.0			103.47	0.0	0.0	0.0			103.35	0.0	0.0	0.0			103.33	0.0	0.0	0.0			103.23	0.0	0.0	0.0			103.22	0.0	0.0	0.0			103.11	0.0	0.0	0.0			103.10	0.0	0.0	0.0			102.98	0.0	0.0	0.0			102.97	0.0	0.0	0.0			102.95	0.0	0.0	0.0			102.86	0.0	0.0	0.0			102.67	0.0	0.0	0.0			102.65	0.0	0.0	0.0			102.57	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.37	0.0	0.0	0.0			102.11	0.0	0.0	0.0			102.08	0.0	0.0	0.0			101.83	0.0	0.0	0.0			101.78	0.0	0.0	0.0			101.64	0.0	0.0	0.0		
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102.95	-64.7	-40.2	18.5																																																																																																																																																																																																																																																																																																																																																												
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102.57	-74.2	-51.0	1.3																																																																																																																																																																																																																																																																																																																																																												
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<table><tr><td>101.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.01</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.91</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.11</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr></table>						101.16	0.0	0.0	0.0	101.06	0.0	0.0	0.0	100.69	0.0	0.0	0.0	100.06	0.0	0.0	0.0	100.01	0.0	0.0	0.0	99.91	0.0	0.0	0.0	99.06	0.0	0.0	0.0	98.05	0.0	0.0	0.0	97.05	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-12.3	-	-	-	106.09	-12.3	-	-	-	106.09	-12.3	-	-	-	106.04	-12.2	-	-	-	105.60	-11.6	-	-	-	105.55	-11.5	-	-	-	105.55	-11.5	-	-	-	105.50	-11.4	-	-	-	105.50	-11.4	-	-	-	105.45	-11.3	-	-	-	105.10	-10.8	-	-	-	105.05	-10.7	-	-	-	105.05	-10.7	-	-	-	105.00	-10.6	-	-	-	105.00	-10.6	-	-	-	104.95	-10.5	-	-	-	104.79	-10.3	-	-	-	104.74	-10.2	-	-	-	104.74	-10.2	-	-	-	104.69	-10.2	-	-	-	104.46	-9.8	-	-	-	104.41	-9.7	-	-	-	104.41	-9.7	-	-	-	104.36	-9.6	-	-	-	104.10	-9.2	-	-	-	104.05	-9.1	-	-	-	104.05	-9.1	-	-	-	104.00	-9.1	-	-	-	103.79	-8.7	-	-	-	103.74	-8.7	-	-	-	103.74	-8.7	-	-	-	103.74	-8.7	-	-	-	103.65	-8.5	-	-	-	103.60	-8.4	-	-	-	103.60	-8.4	-	-	-	103.60	-8.4	-	-	-	103.54	-8.3	-	-	-	103.48	-8.2	-	-	-	103.48	-8.2	-	-	-	103.47	-8.2	-	-	-	103.47	-8.2	-	-	-	103.41	-8.1	-	-	-	103.41	-8.1	-	-	-	103.35	-8.0	-	-	-	103.35	-8.0	-	-	-	103.33	-8.0	-	-	-	103.33	-8.0	-	-	-	103.28	-7.9	-	-	-	103.28	-7.9	-	-	-	103.23	-7.8	-	-	-	103.23	-7.8	-	-	-	103.22	-7.8	-	-	-	103.22	-7.8	-	-	-	103.16	-7.7	-	-	-	103.16	-7.7	-	-	-	103.11	-7.6	-	-	-
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div>103.11</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-7.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-7.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.90</div> <div>-7.3</div> <div>-</div> 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<div>26.62</div> <div>30.72</div> </div> <div> <div>102.11</div> <div>-6.0</div> <div>5.15</div> <div>30.72</div> <div>30.72</div> </div> <div> <div>102.08</div> <div>-5.9</div> <div>5.15</div> <div>30.47</div> <div>32.75</div> </div> <div> <div>102.08</div> <div>-5.9</div> <div>5.53</div> <div>32.75</div> <div>32.75</div> </div> <div> <div>102.03</div> <div>-5.8</div> <div>5.53</div> <div>32.30</div> <div>36.17</div> </div> <div> <div>101.88</div> <div>-5.6</div> <div>8.30</div> <div>46.43</div> <div>46.43</div> </div> <div> <div>101.83</div> <div>-5.5</div> <div>8.30</div> <div>45.76</div> <div>49.85</div> </div> <div> <div>101.83</div> <div>-5.5</div> <div>9.04</div> <div>49.86</div> <div>49.85</div> </div> <div> <div>101.78</div> <div>-5.4</div> <div>9.04</div> <div>49.13</div> <div>53.28</div> </div> <div> <div>101.78</div> <div>-5.4</div> <div>9.80</div> <div>53.28</div> <div>53.28</div> </div> <div> <div>101.73</div> <div>-5.4</div> <div>9.80</div> <div>52.52</div> <div>56.58</div> </div> <div> <div>101.68</div> <div>-5.3</div> <div>11.34</div> <div>59.89</div> <div>59.89</div> </div> <div> <div>101.64</div> <div>-5.2</div> <div>11.34</div> <div>59.02</div> <div>63.20</div> </div> <div> <div>101.64</div> <div>-5.2</div> <div>12.15</div> <div>63.20</div> <div>63.20</div> </div> <div> <div>101.58</div> <div>-5.1</div> <div>12.15</div> <div>62.18</div> <div>66.80</div> </div> <div> <div>101.22</div> <div>-4.5</div> <div>20.26</div> <div>92.07</div> <div>92.06</div> </div> <div> <div>101.16</div> <div>-4.5</div> <div>20.26</div> <div>90.44</div> <div>95.67</div> </div> <div> <div>101.16</div> <div>-4.5</div> <div>21.43</div> <div>95.68</div> <div>95.67</div> </div> <div> <div>101.11</div> <div>-4.4</div> <div>21.43</div> <div>93.97</div> <div>99.28</div> </div> <div> <div>101.11</div> <div>-4.4</div> <div>22.64</div> <div>99.29</div> <div>99.28</div> </div> <div> <div>101.06</div> <div>-4.3</div> <div>22.64</div> <div>97.50</div> <div>102.89</div> </div> <div> <div>101.06</div> <div>-4.3</div> <div>23.90</div> <div>102.90</div> <div>102.89</div> </div> <div> <div>101.01</div> <div>-4.2</div> <div>23.90</div> <div>101.02</div> <div>106.50</div> </div> <div> <div>100.75</div> <div>-3.8</div> <div>32.39</div> <div>124.55</div> <div>124.54</div> </div> <div> <div>100.69</div> <div>-3.8</div> <div>32.39</div> <div>122.14</div> <div>128.15</div> </div> <div> <div>100.69</div> <div>-3.8</div> <div>33.99</div> <div>128.16</div> <div>128.15</div> </div> <div> <div>100.65</div> <div>-3.7</div> <div>33.99</div> <div>125.81</div> <div>131.54</div> </div> <div> <div>100.11</div> <div>-3.0</div> <div>50.00</div> <div>149.31</div> <div>168.75</div> </div> <div> <div>100.06</div> <div>-2.9</div> <div>50.00</div> <div>146.27</div> <div>172.13</div> </div> <div> <div>100.06</div> <div>-2.9</div> <div>50.00</div> <div>146.27</div> <div>172.13</div> </div> <div> <div>100.01</div> <div>-2.9</div> <div>50.00</div> <div>143.27</div> <div>175.52</div> </div> <div> <div>100.01</div> <div>-2.9</div> <div>50.00</div> <div>143.27</div> <div>175.52</div> </div> <div> <div>99.96</div> <div>-2.8</div> <div>50.00</div> <div>140.31</div> <div>178.90</div> </div> <div> <div>99.96</div> <div>-2.8</div> <div>50.00</div> <div>140.31</div> <div>178.90</div> </div> <div> <div>99.91</div> <div>-2.7</div> <div>50.00</div> <div>137.38</div> <div>182.28</div> </div> <div> <div>99.91</div> <div>-2.7</div> <div>50.00</div> <div>137.38</div> <div>182.28</div> </div> <div> <div>99.86</div> <div>-2.7</div> <div>50.00</div> <div>134.42</div> <div>185.75</div> </div> <div> <div>99.11</div> <div>-1.9</div> <div>50.00</div> <div>94.37</div> <div>237.73</div> </div>		
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Kapitel:	2 LF 2 (BS-T)	Archiv Nr.: 02/17
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																	
Auftraggeber: Stadtverwaltung Leipzig		-																																																																	
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																	
<table><tr><td>99.06</td><td>-1.8</td><td>50.00</td><td>91.98</td><td>241.19</td></tr><tr><td>99.06</td><td>-1.8</td><td>50.00</td><td>91.98</td><td>241.19</td></tr><tr><td>99.01</td><td>-1.8</td><td>50.00</td><td>89.61</td><td>244.66</td></tr><tr><td>98.10</td><td>-1.0</td><td>50.00</td><td>51.52</td><td>307.03</td></tr><tr><td>98.05</td><td>-1.0</td><td>50.00</td><td>49.61</td><td>310.49</td></tr><tr><td>98.05</td><td>-1.0</td><td>50.00</td><td>49.61</td><td>310.49</td></tr><tr><td>98.00</td><td>-1.0</td><td>50.00</td><td>47.71</td><td>313.96</td></tr><tr><td>97.10</td><td>-0.3</td><td>50.00</td><td>15.42</td><td>376.33</td></tr><tr><td>97.05</td><td>-0.3</td><td>50.00</td><td>13.69</td><td>379.80</td></tr><tr><td>97.05</td><td>-0.3</td><td>50.00</td><td>13.69</td><td>379.80</td></tr><tr><td>97.00</td><td>-0.2</td><td>50.00</td><td>11.97</td><td>383.26</td></tr><tr><td>96.45</td><td>0.1</td><td>50.00</td><td>-6.92</td><td>421.38</td></tr><tr><td>96.40</td><td>0.2</td><td>50.00</td><td>-8.64</td><td>424.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03915394 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.70 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}$ $G_{s,k} = 183.55 \text{ kN/m}$ $G'_{s,k} = 0.00 \text{ kN/m}$ $P_{v,k} = 0.00 \text{ kN/m}$ $E_{av,k} = 81.50 \text{ kN/m}$ ($E_{ah,k} = 450.13 \text{ kN/m}$) $B_{v,k} = 170.43$ Summe $V_{s,k} = 94.62 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 97.28 bis 93.76 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung von bis $q_{s,k} [\text{kN/m}^2]$ Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 338.25 / 1.40 = 241.61 \text{ kN/m}$ $R_{s,d} = R_{b,d} + R_{s1,d} = 1106.66 \text{ kN/m}$</p> <p>Einwirkungen $V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 220.26 - 0.00 + 93.73 + 0.00 = 313.99 \text{ kN/m}$ $\Rightarrow \mu = V_{s,d} / R_{s,d} = 313.99 / 1106.66 = 0.28$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			99.06	-1.8	50.00	91.98	241.19	99.06	-1.8	50.00	91.98	241.19	99.01	-1.8	50.00	89.61	244.66	98.10	-1.0	50.00	51.52	307.03	98.05	-1.0	50.00	49.61	310.49	98.05	-1.0	50.00	49.61	310.49	98.00	-1.0	50.00	47.71	313.96	97.10	-0.3	50.00	15.42	376.33	97.05	-0.3	50.00	13.69	379.80	97.05	-0.3	50.00	13.69	379.80	97.00	-0.2	50.00	11.97	383.26	96.45	0.1	50.00	-6.92	421.38	96.40	0.2	50.00	-8.64	424.84
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Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/18																																																																	
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025																																																																	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																	

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig		-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

3 LF 3 (BS-T)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

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Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 6
Datei: 13_BS 6_LF3.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.10 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)

Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	y(unten)	Verkehrslast
[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	[mNHN]	[-]
1	83.10	2.13	103.74	102.86	100.69	nein
2	10.00	2.63	103.74	102.65	99.91	nein

Lasten (zweiseitig begrenzt)

Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast
[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]
1	46.00	0.00	0.33	103.74	103.74	103.74	103.47	103.33	nein
2	117.67	0.33	0.63	103.74	103.60	103.33	103.22	102.95	nein
3	111.80	0.63	0.93	103.74	103.48	102.95	102.97	102.57	nein
4	105.93	0.93	1.23	103.74	103.35	102.57	102.67	102.11	nein
5	100.07	1.23	1.53	103.74	103.23	102.11	102.37	101.64	nein
6	94.20	1.53	1.83	103.74	103.11	101.64	102.08	101.16	nein
7	88.33	1.83	2.13	103.74	102.98	101.16	101.78	100.69	nein

Steuerparameter = 0.50

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	0.00	13.00	106.09	104.74	Ständig
2	0.00	29.50	105.55	102.55	Wasserdruck

Schnitt:	Anlage O2 Schnitt 6L	Seite Anlage 02/19
Kapitel:	3 LF 3 (BS-T)	Archiv Nr. 19
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.55	-12.50	0.00	0.00	0.00	19.50	0.00
2	104.41	0.00	0.00	-101.70	0.00	0.00	0.00

Art des Fußlagers:

Profillänge von 9.70 m fest und Fuß gebettet

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 444.532 / 702.544 = 0.633$

Bettungslager $B_{h,d} = 444.532 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 702.544 \text{ kN/m}$

Anker und Steifen

$N_{,d}' = \text{Bemessungswert (Steifen) mit BS-P (1.275/1.50)}$

Nw,k kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-244.98	-211.19	-211.19	-165.80	3.900E+7	2.100E+7	-269.27 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00

max M,d [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-9.9	0.0	-251.16	0.00	0.00
-7.47	103.72	-9.9	0.0	-251.16	0.00	0.00
-7.47	103.72	-9.9	0.0	-251.16	0.00	0.00
-6.64	103.72	-9.9	0.0	-251.16	0.00	0.00
-5.81	103.72	-9.9	0.0	-251.16	0.00	0.00
-4.98	103.72	-9.9	0.0	-251.16	0.00	0.00
-4.15	103.72	-9.9	0.0	-251.16	0.00	0.00
-3.32	103.72	-10.0	0.0	-251.16	0.00	0.00
-2.49	103.72	-10.0	0.0	-251.16	0.00	0.00
-1.66	103.72	-10.0	0.0	-251.16	0.00	0.00
-0.83	103.72	-10.0	0.0	-251.16	0.00	0.00
0.00	103.72	-10.0	0.0	-251.16	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden aus der Datei

P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 6\Linkes Ufer\12_BS 6_LF2.vrb

eingeliesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0086

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.55	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.55	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage O2	Schnitt 6L	Seite Anlage	O2/20
Kapitel:	3	LF 3 (BS-T)	Archiv Nr.:	
Vorgang:	Genehmigungsstatik		Projekt-Nr.:	2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.55</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div><table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.100</td><td>106.090</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.550</td><td>0.000</td><td>5.200</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>5.200</td><td>5.681</td><td>0.00</td><td>0.49</td></tr><tr><td>105.500</td><td>105.049</td><td>5.681</td><td>10.029</td><td>0.49</td><td>4.93</td></tr><tr><td>105.049</td><td>104.740</td><td>10.029</td><td>13.000</td><td>4.93</td><td>7.97</td></tr><tr><td>104.740</td><td>104.410</td><td>0.000</td><td>0.000</td><td>7.97</td><td>11.21</td></tr><tr><td>104.410</td><td>104.049</td><td>0.000</td><td>0.000</td><td>11.21</td><td>14.76</td></tr><tr><td>104.049</td><td>103.740</td><td>0.000</td><td>0.000</td><td>14.76</td><td>17.80</td></tr><tr><td>103.740</td><td>103.720</td><td>0.000</td><td>21.448</td><td>17.80</td><td>18.00</td></tr><tr><td>103.720</td><td>103.603</td><td>21.448</td><td>21.945</td><td>18.00</td><td>19.14</td></tr><tr><td>103.603</td><td>103.479</td><td>21.945</td><td>48.775</td><td>19.14</td><td>20.36</td></tr><tr><td>103.479</td><td>103.467</td><td>48.775</td><td>52.755</td><td>20.36</td><td>20.49</td></tr><tr><td>103.467</td><td>103.355</td><td>52.755</td><td>70.508</td><td>20.49</td><td>21.59</td></tr><tr><td>103.355</td><td>103.325</td><td>70.508</td><td>77.246</td><td>21.59</td><td>21.88</td></tr><tr><td>103.325</td><td>103.231</td><td>77.246</td><td>93.989</td><td>21.88</td><td>22.81</td></tr><tr><td>103.231</td><td>103.216</td><td>93.989</td><td>97.233</td><td>22.81</td><td>22.95</td></tr><tr><td>103.216</td><td>103.106</td><td>97.233</td><td>97.458</td><td>22.95</td><td>24.03</td></tr><tr><td>103.106</td><td>103.100</td><td>97.458</td><td>97.671</td><td>24.03</td><td>24.09</td></tr><tr><td>103.100</td><td>102.982</td><td>97.671</td><td>101.696</td><td>24.09</td><td>25.25</td></tr><tr><td>102.982</td><td>102.965</td><td>101.696</td><td>102.681</td><td>25.25</td><td>25.42</td></tr><tr><td>102.965</td><td>102.948</td><td>102.681</td><td>101.232</td><td>25.42</td><td>25.59</td></tr><tr><td>102.948</td><td>102.858</td><td>101.232</td><td>104.018</td><td>25.59</td><td>26.47</td></tr><tr><td>102.858</td><td>102.670</td><td>104.018</td><td>113.420</td><td>26.47</td><td>28.32</td></tr><tr><td>102.670</td><td>102.651</td><td>113.420</td><td>112.557</td><td>28.32</td><td>28.51</td></tr><tr><td>102.651</td><td>102.570</td><td>112.557</td><td>109.205</td><td>28.51</td><td>29.30</td></tr><tr><td>102.570</td><td>102.550</td><td>109.205</td><td>109.868</td><td>29.30</td><td>29.50</td></tr><tr><td>102.550</td><td>102.373</td><td>79.463</td><td>83.733</td><td>0.00</td><td>0.00</td></tr><tr><td>102.373</td><td>102.105</td><td>83.733</td><td>77.247</td><td>0.00</td><td>0.00</td></tr><tr><td>102.105</td><td>102.076</td><td>77.247</td><td>77.568</td><td>0.00</td><td>0.00</td></tr><tr><td>102.076</td><td>101.828</td><td>77.568</td><td>71.140</td><td>0.00</td><td>0.00</td></tr><tr><td>101.828</td><td>101.779</td><td>71.140</td><td>69.854</td><td>0.00</td><td>0.00</td></tr><tr><td>101.779</td><td>101.635</td><td>69.854</td><td>61.954</td><td>0.00</td><td>0.00</td></tr><tr><td>101.635</td><td>101.165</td><td>61.954</td><td>48.084</td><td>0.00</td><td>0.00</td></tr><tr><td>101.165</td><td>101.060</td><td>48.084</td><td>47.044</td><td>0.00</td><td>0.00</td></tr><tr><td>101.060</td><td>100.695</td><td>47.044</td><td>43.403</td><td>0.00</td><td>0.00</td></tr><tr><td>100.695</td><td>100.254</td><td>43.403</td><td>45.785</td><td>0.00</td><td>0.00</td></tr><tr><td>100.254</td><td>100.058</td><td>45.785</td><td>46.844</td><td>0.00</td><td>0.00</td></tr><tr><td>100.058</td><td>99.911</td><td>46.844</td><td>47.638</td><td>0.00</td><td>0.00</td></tr><tr><td>99.911</td><td>99.058</td><td>47.638</td><td>51.136</td><td>0.00</td><td>0.00</td></tr><tr><td>99.058</td><td>98.054</td><td>51.136</td><td>55.252</td><td>0.00</td><td>0.00</td></tr><tr><td>98.054</td><td>97.051</td><td>55.252</td><td>59.367</td><td>0.00</td><td>0.00</td></tr><tr><td>97.051</td><td>96.399</td><td>59.367</td><td>62.042</td><td>0.00</td><td>0.00</td></tr><tr><td>96.399</td><td>80.000</td><td>62.042</td><td>129.303</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></table></div>			Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.55	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.55	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	0.000	0.000	0.00	0.00	106.090	105.550	0.000	5.200	0.00	0.00	105.550	105.500	5.200	5.681	0.00	0.49	105.500	105.049	5.681	10.029	0.49	4.93	105.049	104.740	10.029	13.000	4.93	7.97	104.740	104.410	0.000	0.000	7.97	11.21	104.410	104.049	0.000	0.000	11.21	14.76	104.049	103.740	0.000	0.000	14.76	17.80	103.740	103.720	0.000	21.448	17.80	18.00	103.720	103.603	21.448	21.945	18.00	19.14	103.603	103.479	21.945	48.775	19.14	20.36	103.479	103.467	48.775	52.755	20.36	20.49	103.467	103.355	52.755	70.508	20.49	21.59	103.355	103.325	70.508	77.246	21.59	21.88	103.325	103.231	77.246	93.989	21.88	22.81	103.231	103.216	93.989	97.233	22.81	22.95	103.216	103.106	97.233	97.458	22.95	24.03	103.106	103.100	97.458	97.671	24.03	24.09	103.100	102.982	97.671	101.696	24.09	25.25	102.982	102.965	101.696	102.681	25.25	25.42	102.965	102.948	102.681	101.232	25.42	25.59	102.948	102.858	101.232	104.018	25.59	26.47	102.858	102.670	104.018	113.420	26.47	28.32	102.670	102.651	113.420	112.557	28.32	28.51	102.651	102.570	112.557	109.205	28.51	29.30	102.570	102.550	109.205	109.868	29.30	29.50	102.550	102.373	79.463	83.733	0.00	0.00	102.373	102.105	83.733	77.247	0.00	0.00	102.105	102.076	77.247	77.568	0.00	0.00	102.076	101.828	77.568	71.140	0.00	0.00	101.828	101.779	71.140	69.854	0.00	0.00	101.779	101.635	69.854	61.954	0.00	0.00	101.635	101.165	61.954	48.084	0.00	0.00	101.165	101.060	48.084	47.044	0.00	0.00	101.060	100.695	47.044	43.403	0.00	0.00	100.695	100.254	43.403	45.785	0.00	0.00	100.254	100.058	45.785	46.844	0.00	0.00	100.058	99.911	46.844	47.638	0.00	0.00	99.911	99.058	47.638	51.136	0.00	0.00	99.058	98.054	51.136	55.252	0.00	0.00	98.054	97.051	55.252	59.367	0.00	0.00	97.051	96.399	59.367	62.042	0.00	0.00	96.399	80.000	62.042	129.303	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																					
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																					
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2	103.74	1.000	1.000	0.000	0.00	40.89	0.179																																																																																																																																																																																																																																																																																																																																					
3	102.55	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																																					
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																					
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103.603	103.479	21.945	48.775	19.14	20.36																																																																																																																																																																																																																																																																																																																																							
103.479	103.467	48.775	52.755	20.36	20.49																																																																																																																																																																																																																																																																																																																																							
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103.355	103.325	70.508	77.246	21.59	21.88																																																																																																																																																																																																																																																																																																																																							
103.325	103.231	77.246	93.989	21.88	22.81																																																																																																																																																																																																																																																																																																																																							
103.231	103.216	93.989	97.233	22.81	22.95																																																																																																																																																																																																																																																																																																																																							
103.216	103.106	97.233	97.458	22.95	24.03																																																																																																																																																																																																																																																																																																																																							
103.106	103.100	97.458	97.671	24.03	24.09																																																																																																																																																																																																																																																																																																																																							
103.100	102.982	97.671	101.696	24.09	25.25																																																																																																																																																																																																																																																																																																																																							
102.982	102.965	101.696	102.681	25.25	25.42																																																																																																																																																																																																																																																																																																																																							
102.965	102.948	102.681	101.232	25.42	25.59																																																																																																																																																																																																																																																																																																																																							
102.948	102.858	101.232	104.018	25.59	26.47																																																																																																																																																																																																																																																																																																																																							
102.858	102.670	104.018	113.420	26.47	28.32																																																																																																																																																																																																																																																																																																																																							
102.670	102.651	113.420	112.557	28.32	28.51																																																																																																																																																																																																																																																																																																																																							
102.651	102.570	112.557	109.205	28.51	29.30																																																																																																																																																																																																																																																																																																																																							
102.570	102.550	109.205	109.868	29.30	29.50																																																																																																																																																																																																																																																																																																																																							
102.550	102.373	79.463	83.733	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
102.373	102.105	83.733	77.247	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
102.105	102.076	77.247	77.568	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
102.076	101.828	77.568	71.140	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
101.828	101.779	71.140	69.854	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
101.779	101.635	69.854	61.954	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
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101.060	100.695	47.044	43.403	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
100.695	100.254	43.403	45.785	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
100.254	100.058	45.785	46.844	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
100.058	99.911	46.844	47.638	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
99.911	99.058	47.638	51.136	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
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98.054	97.051	55.252	59.367	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
97.051	96.399	59.367	62.042	0.00	0.00																																																																																																																																																																																																																																																																																																																																							
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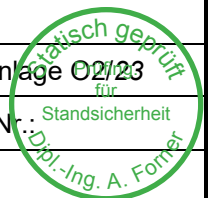


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpg_h kp_{ch} phi_{i,k} delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.57 102.55 0.00 0.00 102.55 102.37 0.00 -7.52 102.37 102.11 -7.52 -18.90 102.11 102.08 -18.90 -20.15 102.08 101.83 -20.15 -30.68 101.83 101.78 -30.68 -32.79 101.78 101.64 -32.79 -38.89 101.64 101.16 -38.89 -58.88 101.16 101.06 -58.88 -63.32 101.06 100.69 -63.32 -78.86 100.69 100.25 -78.86 -97.60 100.25 100.06 -97.60 -105.93 100.06 99.91 -105.93 -112.17 99.91 99.06 -112.17 -148.42 99.06 98.05 -148.42 -191.07 98.05 97.05 -191.07 -233.72 97.05 96.40 -233.72 -261.44 96.40 80.00 -261.44 -958.43</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.10 0.0 0.0 0.0 106.09 -0.2 0.0 0.0 105.55 -12.0 -1.6 -0.3 105.55 -35.4 -1.6 -15.3 105.50 -36.5 -1.9 -15.4 105.05 -46.3 -7.5 -17.3 104.74 -53.0 -14.0 -20.6 104.41 -60.2 -17.8 -25.8 104.41 -60.2 -139.8 -25.8 104.05 -68.0 -145.4 -77.3 103.74 -74.8 -151.5 -123.1 103.72 -75.3 -152.4 -126.1 -251.2 103.72 -75.3 98.8 -126.1 103.60 -78.6 93.3 -114.9 103.48 -82.7 85.3 -103.7 103.47 -83.2 84.3 -102.7 103.35 -87.7 73.5 -93.9 103.33 -89.0 70.2 -91.7 103.23 -93.6 58.4 -85.6 103.22 -94.3 56.4 -84.8 103.11 -100.0 41.0 -79.4 103.10 -100.3 40.1 -79.2 102.98 -106.5 23.1 -75.5 102.97 -107.4 20.6 -75.1 102.95 -108.4 18.0 -74.7 102.86 -113.2 4.6 -73.7 102.67 -123.5 -25.0 -75.6 102.65 -124.6 -28.2 -76.1 102.57 -129.1 -41.2 -78.9 102.55 -130.3 -44.5 -79.8 102.37 -135.3 -60.2 -89.1 102.11 -138.8 -79.0 -107.9 102.08 -139.0 -80.6 -110.2 101.83 -139.9 -90.6 -131.6 101.78 -139.9 -91.8 -136.1 101.64 -139.3 -93.4 -149.4 101.16 -133.0 -81.7 -191.5 101.06 -130.6 -75.8 -199.8</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/22
Kapitel: 3 LF 3 (BS-T)		Archiv Nr. 22
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>100.69</div><div>-119.7</div><div>-47.6</div><div>-222.7</div></div><div><div>100.25</div><div>-101.3</div><div>-0.1</div><div>-233.5</div></div><div><div>100.06</div><div>-93.4</div><div>20.0</div><div>-231.5</div></div><div><div>99.91</div><div>-88.2</div><div>33.1</div><div>-227.6</div></div><div><div>99.06</div><div>-68.1</div><div>81.3</div><div>-175.6</div></div><div><div>98.05</div><div>-63.2</div><div>86.8</div><div>-87.2</div></div><div><div>97.05</div><div>-74.4</div><div>47.4</div><div>-16.4</div></div><div><div>96.40</div><div>-87.0</div><div>0.0</div><div>0.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.55</div><div>-10.4</div><div>-1.4</div><div>-0.3</div><div></div></div><div><div>105.55</div><div>-29.9</div><div>-1.4</div><div>-12.8</div><div></div></div><div><div>105.50</div><div>-30.9</div><div>-1.7</div><div>-12.8</div><div></div></div><div><div>105.05</div><div>-39.4</div><div>-6.5</div><div>-14.5</div><div></div></div><div><div>104.74</div><div>-45.2</div><div>-12.0</div><div>-17.3</div><div></div></div><div><div>104.41</div><div>-51.5</div><div>-15.2</div><div>-21.8</div><div></div></div><div><div>104.41</div><div>-51.5</div><div>-116.9</div><div>-21.8</div><div></div></div><div><div>104.05</div><div>-58.3</div><div>-121.6</div><div>-64.8</div><div></div></div><div><div>103.74</div><div>-64.2</div><div>-126.6</div><div>-103.1</div><div></div></div><div><div>103.72</div><div>-64.6</div><div>-127.3</div><div>-105.6</div><div>-211.2</div></div><div><div>103.72</div><div>-64.6</div><div>83.8</div><div>-105.6</div><div></div></div><div><div>103.60</div><div>-67.5</div><div>79.2</div><div>-96.1</div><div></div></div><div><div>103.48</div><div>-71.1</div><div>72.3</div><div>-86.7</div><div></div></div><div><div>103.47</div><div>-71.5</div><div>71.4</div><div>-85.8</div><div></div></div><div><div>103.35</div><div>-75.4</div><div>62.2</div><div>-78.3</div><div></div></div><div><div>103.33</div><div>-76.6</div><div>59.3</div><div>-76.5</div><div></div></div><div><div>103.23</div><div>-80.5</div><div>49.1</div><div>-71.3</div><div></div></div><div><div>103.22</div><div>-81.2</div><div>47.4</div><div>-70.6</div><div></div></div><div><div>103.11</div><div>-86.1</div><div>34.1</div><div>-66.2</div><div></div></div><div><div>103.10</div><div>-86.4</div><div>33.4</div><div>-65.9</div><div></div></div><div><div>102.98</div><div>-91.8</div><div>18.7</div><div>-62.9</div><div></div></div><div><div>102.97</div><div>-92.6</div><div>16.6</div><div>-62.6</div><div></div></div><div><div>102.95</div><div>-93.4</div><div>14.3</div><div>-62.3</div><div></div></div><div><div>102.86</div><div>-97.6</div><div>2.8</div><div>-61.5</div><div></div></div><div><div>102.67</div><div>-106.6</div><div>-22.7</div><div>-63.4</div><div></div></div><div><div>102.65</div><div>-107.5</div><div>-25.5</div><div>-63.8</div><div></div></div><div><div>102.57</div><div>-111.4</div><div>-36.7</div><div>-66.3</div><div></div></div><div><div>102.55</div><div>-112.4</div><div>-39.6</div><div>-67.1</div><div></div></div><div><div>102.37</div><div>-116.8</div><div>-53.2</div><div>-75.3</div><div></div></div><div><div>102.11</div><div>-119.8</div><div>-69.6</div><div>-91.9</div><div></div></div><div><div>102.08</div><div>-120.0</div><div>-70.9</div><div>-94.0</div><div></div></div><div><div>101.83</div><div>-120.9</div><div>-79.6</div><div>-112.8</div><div></div></div><div><div>101.78</div><div>-120.8</div><div>-80.7</div><div>-116.7</div><div></div></div><div><div>101.64</div><div>-120.3</div><div>-82.1</div><div>-128.4</div><div></div></div><div><div>101.16</div><div>-114.9</div><div>-71.8</div><div>-165.5</div><div></div></div><div><div>101.06</div><div>-112.8</div><div>-66.7</div><div>-172.7</div><div></div></div><div><div>100.69</div><div>-103.4</div><div>-42.0</div><div>-192.9</div><div></div></div><div><div>100.25</div><div>-87.4</div><div>-0.6</div><div>-202.6</div><div></div></div><div><div>100.06</div><div>-80.6</div><div>16.9</div><div>-200.9</div><div></div></div><div><div>99.91</div><div>-76.0</div><div>28.4</div><div>-197.6</div><div></div></div><div><div>99.06</div><div>-58.7</div><div>70.5</div><div>-152.6</div><div></div></div><div><div>98.05</div><div>-54.5</div><div>75.4</div><div>-75.8</div><div></div></div><div><div>97.05</div><div>-64.2</div><div>41.2</div><div>-14.2</div><div></div></div><div><div>96.40</div><div>-75.2</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.55</div><div>-10.4</div><div>-1.4</div><div>-0.3</div><div></div></div><div><div>105.55</div><div>-29.9</div><div>-1.4</div><div>-12.8</div><div></div></div><div><div>105.50</div><div>-30.9</div><div>-1.7</div><div>-12.8</div><div></div></div><div><div>105.05</div><div>-39.4</div><div>-6.5</div><div>-14.5</div><div></div></div><div><div>104.74</div><div>-45.2</div><div>-12.0</div><div>-17.3</div><div></div></div><div><div>104.41</div><div>-51.5</div><div>-15.2</div><div>-21.8</div><div></div></div><div><div>104.41</div><div>-51.5</div><div>-116.9</div><div>-21.8</div><div></div></div></div></div>					
Schnitt:		Anlage O2 Schnitt 6L		Seite Anlage 02/23	
Kapitel:		3 LF 3 (BS-T)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																															
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																																																															
<table><tr><td>104.05</td><td>-58.3</td><td>-121.6</td><td>-64.8</td><td></td><td></td></tr><tr><td>103.74</td><td>-64.2</td><td>-126.6</td><td>-103.1</td><td></td><td></td></tr><tr><td>103.72</td><td>-64.6</td><td>-127.3</td><td>-105.6</td><td>-211.2</td><td></td></tr><tr><td>103.72</td><td>-64.6</td><td>83.8</td><td>-105.6</td><td></td><td></td></tr><tr><td>103.60</td><td>-67.5</td><td>79.2</td><td>-96.1</td><td></td><td></td></tr><tr><td>103.48</td><td>-71.1</td><td>72.3</td><td>-86.7</td><td></td><td></td></tr><tr><td>103.47</td><td>-71.5</td><td>71.4</td><td>-85.8</td><td></td><td></td></tr><tr><td>103.35</td><td>-75.4</td><td>62.2</td><td>-78.3</td><td></td><td></td></tr><tr><td>103.33</td><td>-76.6</td><td>59.3</td><td>-76.5</td><td></td><td></td></tr><tr><td>103.23</td><td>-80.5</td><td>49.1</td><td>-71.3</td><td></td><td></td></tr><tr><td>103.22</td><td>-81.2</td><td>47.4</td><td>-70.6</td><td></td><td></td></tr><tr><td>103.11</td><td>-86.1</td><td>34.1</td><td>-66.2</td><td></td><td></td></tr><tr><td>103.10</td><td>-86.4</td><td>33.4</td><td>-65.9</td><td></td><td></td></tr><tr><td>102.98</td><td>-91.8</td><td>18.7</td><td>-62.9</td><td></td><td></td></tr><tr><td>102.97</td><td>-92.6</td><td>16.6</td><td>-62.6</td><td></td><td></td></tr><tr><td>102.95</td><td>-93.4</td><td>14.3</td><td>-62.3</td><td></td><td></td></tr><tr><td>102.86</td><td>-97.6</td><td>2.8</td><td>-61.5</td><td></td><td></td></tr><tr><td>102.67</td><td>-106.6</td><td>-22.7</td><td>-63.4</td><td></td><td></td></tr><tr><td>102.65</td><td>-107.5</td><td>-25.5</td><td>-63.8</td><td></td><td></td></tr><tr><td>102.57</td><td>-111.4</td><td>-36.7</td><td>-66.3</td><td></td><td></td></tr><tr><td>102.55</td><td>-112.4</td><td>-39.6</td><td>-67.1</td><td></td><td></td></tr><tr><td>102.37</td><td>-116.8</td><td>-53.2</td><td>-75.3</td><td></td><td></td></tr><tr><td>102.11</td><td>-119.8</td><td>-69.6</td><td>-91.9</td><td></td><td></td></tr><tr><td>102.08</td><td>-120.0</td><td>-70.9</td><td>-94.0</td><td></td><td></td></tr><tr><td>101.83</td><td>-120.9</td><td>-79.6</td><td>-112.8</td><td></td><td></td></tr><tr><td>101.78</td><td>-120.8</td><td>-80.7</td><td>-116.7</td><td></td><td></td></tr><tr><td>101.64</td><td>-120.3</td><td>-82.1</td><td>-128.4</td><td></td><td></td></tr><tr><td>101.16</td><td>-114.9</td><td>-71.8</td><td>-165.5</td><td></td><td></td></tr><tr><td>101.06</td><td>-112.8</td><td>-66.7</td><td>-172.7</td><td></td><td></td></tr><tr><td>100.69</td><td>-103.4</td><td>-42.0</td><td>-192.9</td><td></td><td></td></tr><tr><td>100.25</td><td>-87.4</td><td>-0.6</td><td>-202.6</td><td></td><td></td></tr><tr><td>100.06</td><td>-80.6</td><td>16.9</td><td>-200.9</td><td></td><td></td></tr><tr><td>99.91</td><td>-76.0</td><td>28.4</td><td>-197.6</td><td></td><td></td></tr><tr><td>99.06</td><td>-58.7</td><td>70.5</td><td>-152.6</td><td></td><td></td></tr><tr><td>98.05</td><td>-54.5</td><td>75.4</td><td>-75.8</td><td></td><td></td></tr><tr><td>97.05</td><td>-64.2</td><td>41.2</td><td>-14.2</td><td></td><td></td></tr><tr><td>96.40</td><td>-75.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <div><div>Schnittgrößen (q,k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.74</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-123.6</td><td></td></tr><tr><td>103.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.47</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.98</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.97</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.95</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.86</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.67</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.57</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table></div>						104.05	-58.3	-121.6	-64.8			103.74	-64.2	-126.6	-103.1			103.72	-64.6	-127.3	-105.6	-211.2		103.72	-64.6	83.8	-105.6			103.60	-67.5	79.2	-96.1			103.48	-71.1	72.3	-86.7			103.47	-71.5	71.4	-85.8			103.35	-75.4	62.2	-78.3			103.33	-76.6	59.3	-76.5			103.23	-80.5	49.1	-71.3			103.22	-81.2	47.4	-70.6			103.11	-86.1	34.1	-66.2			103.10	-86.4	33.4	-65.9			102.98	-91.8	18.7	-62.9			102.97	-92.6	16.6	-62.6			102.95	-93.4	14.3	-62.3			102.86	-97.6	2.8	-61.5			102.67	-106.6	-22.7	-63.4			102.65	-107.5	-25.5	-63.8			102.57	-111.4	-36.7	-66.3			102.55	-112.4	-39.6	-67.1			102.37	-116.8	-53.2	-75.3			102.11	-119.8	-69.6	-91.9			102.08	-120.0	-70.9	-94.0			101.83	-120.9	-79.6	-112.8			101.78	-120.8	-80.7	-116.7			101.64	-120.3	-82.1	-128.4			101.16	-114.9	-71.8	-165.5			101.06	-112.8	-66.7	-172.7			100.69	-103.4	-42.0	-192.9			100.25	-87.4	-0.6	-202.6			100.06	-80.6	16.9	-200.9			99.91	-76.0	28.4	-197.6			99.06	-58.7	70.5	-152.6			98.05	-54.5	75.4	-75.8			97.05	-64.2	41.2	-14.2			96.40	-75.2	0.0	0.0			Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.10	0.0	0.0	0.0			106.09	0.0	0.0	0.0			105.55	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.05	0.0	0.0	0.0			104.74	0.0	0.0	0.0			104.41	0.0	0.0	0.0			104.05	0.0	0.0	0.0			103.74	0.0	0.0	0.0			103.72	0.0	0.0	0.0	-123.6		103.60	0.0	0.0	0.0			103.48	0.0	0.0	0.0			103.47	0.0	0.0	0.0			103.35	0.0	0.0	0.0			103.33	0.0	0.0	0.0			103.23	0.0	0.0	0.0			103.22	0.0	0.0	0.0			103.11	0.0	0.0	0.0			103.10	0.0	0.0	0.0			102.98	0.0	0.0	0.0			102.97	0.0	0.0	0.0			102.95	0.0	0.0	0.0			102.86	0.0	0.0	0.0			102.67	0.0	0.0	0.0			102.65	0.0	0.0	0.0			102.57	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.37	0.0	0.0	0.0			102.11	0.0	0.0	0.0			102.08	0.0	0.0	0.0		
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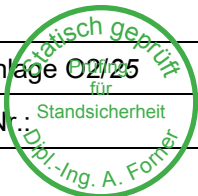
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Standsicherheit

Dipl.-Ing. A. Forster



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																								
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<table><tr><td>101.83</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.78</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.64</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.91</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr></table>						101.83	0.0	0.0	0.0	101.78	0.0	0.0	0.0	101.64	0.0	0.0	0.0	101.16	0.0	0.0	0.0	101.06	0.0	0.0	0.0	100.69	0.0	0.0	0.0	100.25	0.0	0.0	0.0	100.06	0.0	0.0	0.0	99.91	0.0	0.0	0.0	99.06	0.0	0.0	0.0	98.05	0.0	0.0	0.0	97.05	0.0	0.0	0.0	96.40	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-13.5	-	-	-	106.09	-13.5	-	-	-	106.09	-13.5	-	-	-	106.04	-13.4	-	-	-	105.60	-12.5	-	-	-	105.55	-12.4	-	-	-	105.55	-12.4	-	-	-	105.50	-12.3	-	-	-	105.50	-12.3	-	-	-	105.45	-12.2	-	-	-	105.10	-11.5	-	-	-	105.05	-11.4	-	-	-	105.05	-11.4	-	-	-	105.00	-11.3	-	-	-	104.79	-10.8	-	-	-	104.74	-10.7	-	-	-	104.74	-10.7	-	-	-	104.69	-10.6	-	-	-	104.46	-10.1	-	-	-	104.41	-10.1	-	-	-	104.41	-10.1	-	-	-	104.36	-9.9	-	-	-	104.10	-9.4	-	-	-	104.05	-9.3	-	-	-	104.05	-9.3	-	-	-	104.00	-9.2	-	-	-	103.79	-8.8	-	-	-	103.74	-8.7	-	-	-	103.74	-8.7	-	-	-	103.74	-8.7	-	-	-	103.74	-8.7	-	-	-	103.72	-8.7	-	-	-	103.72	-8.7	-	-	-	103.66	-8.6	-	-	-	103.66	-8.6	-	-	-	103.60	-8.4	-	-	-	103.60	-8.4	-	-	-	103.60	-8.4	-	-	-	103.54	-8.3	-	-	-	103.48	-8.2	-	-	-	103.48	-8.2	-	-	-	103.47	-8.2	-	-	-	103.47	-8.2	-	-	-	103.41	-8.1	-	-	-	103.41	-8.1	-	-	-	103.35	-8.0	-	-	-	103.35	-8.0	-	-	-	103.33	-7.9	-	-	-	103.33	-7.9	-	-	-	103.28	-7.8	-	-	-	103.28	-7.8	-	-	-	103.23	-7.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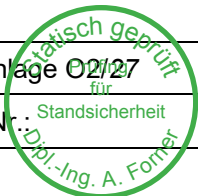


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
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<div>102.67</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-6.5</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-6.5</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.51</div> <div>-6.4</div> <div>0.00</div> <div>0.00</div> <div>3.05</div> </div> <div> <div>102.42</div> <div>-6.2</div> <div>1.47</div> <div>9.16</div> <div>9.16</div> </div> <div> <div>102.37</div> <div>-6.2</div> <div>1.47</div> <div>9.05</div> <div>12.22</div> </div> <div> <div>102.37</div> <div>-6.2</div> <div>1.99</div> <div>12.22</div> <div>12.22</div> </div> <div> <div>102.32</div> <div>-6.1</div> <div>1.99</div> <div>12.03</div> <div>15.92</div> </div> <div> <div>102.16</div> <div>-5.8</div> <div>4.68</div> <div>27.02</div> <div>27.02</div> </div> <div> <div>102.11</div> <div>-5.7</div> <div>4.68</div> <div>26.58</div> <div>30.72</div> </div> <div> <div>102.11</div> <div>-5.7</div> <div>5.41</div> <div>30.72</div> <div>30.72</div> </div> <div> <div>102.08</div> <div>-5.6</div> <div>5.41</div> <div>30.44</div> <div>32.75</div> </div> <div> <div>102.08</div> <div>-5.6</div> <div>5.82</div> <div>32.75</div> <div>32.75</div> </div> <div> <div>102.03</div> <div>-5.5</div> <div>5.82</div> <div>32.24</div> <div>36.17</div> </div> <div> <div>101.88</div> <div>-5.3</div> <div>8.79</div> <div>46.43</div> <div>46.43</div> </div> <div> <div>101.83</div> <div>-5.2</div> <div>8.79</div> <div>45.69</div> <div>49.85</div> </div> <div> <div>101.83</div> <div>-5.2</div> <div>9.59</div> <div>49.86</div> <div>49.85</div> </div> <div> <div>101.78</div> <div>-5.1</div> <div>9.59</div> <div>49.05</div> <div>53.28</div> </div> <div> <div>101.78</div> <div>-5.1</div> <div>10.42</div> <div>53.28</div> <div>53.28</div> </div> <div> <div>101.73</div> <div>-5.0</div> <div>10.42</div> <div>52.43</div> <div>56.58</div> </div> <div> <div>101.68</div> <div>-5.0</div> <div>12.10</div> <div>59.89</div> <div>59.89</div> </div> <div> <div>101.64</div> <div>-4.9</div> <div>12.10</div> <div>58.92</div> <div>63.20</div> </div> <div> <div>101.64</div> <div>-4.9</div> <div>12.97</div> <div>63.20</div> <div>63.20</div> </div> <div> <div>101.58</div> <div>-4.8</div> <div>12.97</div> <div>62.07</div> <div>66.80</div> </div> <div> <div>101.22</div> <div>-4.2</div> <div>21.95</div> <div>92.07</div> <div>92.06</div> </div> <div> <div>101.16</div> <div>-4.1</div> <div>21.95</div> <div>90.28</div> <div>95.67</div> </div> <div> <div>101.16</div> <div>-4.1</div> <div>23.26</div> <div>95.68</div> <div>95.67</div> </div> <div> <div>101.11</div> <div>-4.0</div> <div>23.26</div> <div>93.80</div> <div>99.28</div> </div> <div> <div>101.11</div> <div>-4.0</div> <div>24.62</div> <div>99.29</div> <div>99.28</div> </div> <div> <div>101.06</div> <div>-4.0</div> <div>24.62</div> <div>97.32</div> <div>102.89</div> </div> <div> <div>101.06</div> <div>-4.0</div> <div>26.02</div> <div>102.90</div> <div>102.89</div> </div> <div> <div>101.01</div> <div>-3.9</div> <div>26.02</div> <div>100.84</div> <div>106.50</div> </div> <div> <div>100.75</div> <div>-3.5</div> <div>35.66</div> <div>124.55</div> <div>124.54</div> </div> <div> <div>100.69</div> <div>-3.4</div> <div>35.66</div> <div>121.92</div> <div>128.15</div> </div> <div> <div>100.69</div> <div>-3.4</div> <div>37.49</div> <div>128.16</div> <div>128.15</div> </div> <div> <div>100.65</div> <div>-3.4</div> <div>37.49</div> <div>125.59</div> <div>131.54</div> </div> <div> <div>100.30</div> <div>-2.9</div> <div>50.00</div> <div>144.71</div> <div>155.22</div> </div> <div> <div>100.25</div> <div>-2.8</div> <div>50.00</div> <div>141.61</div> <div>158.60</div> </div> <div> <div>100.25</div> <div>-2.8</div> <div>50.00</div> <div>141.61</div> <div>158.60</div> </div> <div> <div>100.20</div> <div>-2.8</div> <div>50.00</div> <div>138.56</div> <div>161.98</div> </div> <div> <div>100.11</div> <div>-2.7</div> <div>50.00</div> <div>132.57</div> <div>168.75</div> </div> <div> <div>100.06</div> <div>-2.6</div> <div>50.00</div> <div>129.64</div> <div>172.13</div> </div>		
Schnitt:	Anlage O2 Schnitt 6L	Seite Anlage O2/26
Kapitel:	3 LF 3 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																					
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																							
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																					
<table><tr><td>100.06</td><td>-2.6</td><td>50.00</td><td>129.64</td><td>172.13</td></tr><tr><td>100.01</td><td>-2.5</td><td>50.00</td><td>126.75</td><td>175.52</td></tr><tr><td>99.96</td><td>-2.5</td><td>50.00</td><td>123.91</td><td>178.90</td></tr><tr><td>99.91</td><td>-2.4</td><td>50.00</td><td>121.10</td><td>182.28</td></tr><tr><td>99.91</td><td>-2.4</td><td>50.00</td><td>121.10</td><td>182.28</td></tr><tr><td>99.86</td><td>-2.4</td><td>50.00</td><td>118.26</td><td>185.75</td></tr><tr><td>99.11</td><td>-1.6</td><td>50.00</td><td>80.51</td><td>237.73</td></tr><tr><td>99.06</td><td>-1.6</td><td>50.00</td><td>78.29</td><td>241.19</td></tr><tr><td>99.06</td><td>-1.6</td><td>50.00</td><td>78.29</td><td>241.19</td></tr><tr><td>99.01</td><td>-1.5</td><td>50.00</td><td>76.09</td><td>244.66</td></tr><tr><td>98.10</td><td>-0.8</td><td>50.00</td><td>41.30</td><td>307.03</td></tr><tr><td>98.05</td><td>-0.8</td><td>50.00</td><td>39.57</td><td>310.49</td></tr><tr><td>98.05</td><td>-0.8</td><td>50.00</td><td>39.57</td><td>310.49</td></tr><tr><td>98.00</td><td>-0.8</td><td>50.00</td><td>37.86</td><td>313.96</td></tr><tr><td>97.10</td><td>-0.2</td><td>50.00</td><td>8.99</td><td>376.33</td></tr><tr><td>97.05</td><td>-0.1</td><td>50.00</td><td>7.45</td><td>379.80</td></tr><tr><td>97.05</td><td>-0.1</td><td>50.00</td><td>7.45</td><td>379.80</td></tr><tr><td>97.00</td><td>-0.1</td><td>50.00</td><td>5.91</td><td>383.26</td></tr><tr><td>96.45</td><td>0.2</td><td>50.00</td><td>-10.90</td><td>421.38</td></tr><tr><td>96.40</td><td>0.2</td><td>50.00</td><td>-12.42</td><td>424.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03482301 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.70 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 183.55 kN/m G',k = 0.00 kN/m Pv,k = 19.50 kN/m Eav,k = 81.50 kN/m (Eah,k = 450.13 kN/m) Bv,k = 154.00 Summe V,k = 130.55 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 96.40 55.00 s3: Flusskies, -sand Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m Rd = Rb,d + Rs1,d = 1106.66 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 220.26 - 0.00 + 93.73 + 23.40 = 337.39 kN/m ==> µ = V,d / Rd = 337.39 / 1106.66 = 0.30</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						100.06	-2.6	50.00	129.64	172.13	100.01	-2.5	50.00	126.75	175.52	99.96	-2.5	50.00	123.91	178.90	99.91	-2.4	50.00	121.10	182.28	99.91	-2.4	50.00	121.10	182.28	99.86	-2.4	50.00	118.26	185.75	99.11	-1.6	50.00	80.51	237.73	99.06	-1.6	50.00	78.29	241.19	99.06	-1.6	50.00	78.29	241.19	99.01	-1.5	50.00	76.09	244.66	98.10	-0.8	50.00	41.30	307.03	98.05	-0.8	50.00	39.57	310.49	98.05	-0.8	50.00	39.57	310.49	98.00	-0.8	50.00	37.86	313.96	97.10	-0.2	50.00	8.99	376.33	97.05	-0.1	50.00	7.45	379.80	97.05	-0.1	50.00	7.45	379.80	97.00	-0.1	50.00	5.91	383.26	96.45	0.2	50.00	-10.90	421.38	96.40	0.2	50.00	-12.42	424.84
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Statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 4 (BS-P)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 14_BS 6_LF4.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 83.10 2.13 103.74 102.86 100.69 nein 2 5.00 2.63 103.74 102.65 99.91 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 46.00 0.00 0.33 103.74 103.74 103.74 103.47 103.33 nein 2 117.67 0.33 0.63 103.74 103.60 103.33 103.22 102.95 nein 3 111.80 0.63 0.93 103.74 103.48 102.95 102.97 102.57 nein 4 105.93 0.93 1.23 103.74 103.35 102.57 102.67 102.11 nein 5 100.07 1.23 1.53 103.74 103.23 102.11 102.37 101.64 nein 6 94.20 1.53 1.83 103.74 103.11 101.64 102.08 101.16 nein 7 88.33 1.83 2.13 103.74 102.98 101.16 101.78 100.69 nein Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.00 106.09 104.74 Ständig 2 0.00 29.50 105.55 102.55 Wasserdruck</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage 02/28
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 02/28
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																									
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<div>Kraftränder Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv) <table><tr><td>Nr.</td><td>Tiefe</td><td>M_{g,k}</td><td>M_{q,k}</td><td>H_{g,k}</td><td>H_{q,k}</td><td>V_{g,k}</td><td>V_{q,k}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>105.55</td><td>-12.50</td><td>0.00</td><td>0.00</td><td>0.00</td><td>19.50</td><td>0.00</td></tr><tr><td>2</td><td>104.41</td><td>0.00</td><td>0.00</td><td>-101.70</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table> Art des Fußlagers: Profillänge von 9.70 m fest und Fuß gebettet Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000 Ausnutzungsgrad $\mu_e = 508.965 / 705.076 = 0.722$ Bettungslager $B_{h,d} = 508.965 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 705.076 \text{ kN/m}$ Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50) $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten. <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N_d</td><td>N(g+q+w)_k</td><td>N(g+w)_k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-245.73</td><td>-190.25</td><td>-190.25</td><td>-166.54</td><td>3.900E+7</td><td>2.100E+7</td><td>-242.57 Steife</td></tr></table> Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max M_d [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_d</td><td>Q_d</td><td>M_d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-11.0</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-11.1</td><td>0.0</td><td>-255.06</td><td>0.00</td><td>0.00</td></tr></table> Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 6\Linkes Ufer\12_BS 6_LF2.vrb eingelesen. Anker/Steife Tiefe Vorverformung <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0086</td></tr></table> Bodenkennwerte <table><tr><td>Schicht</td><td>UK</td><td>gam_k</td><td>gam'_k</td><td>phi_k</td><td>c_k</td><td>d(p)/phi</td><td>d(a)/phi</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.55</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.74</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.55</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table></div>			Nr.	Tiefe	M _{g,k}	M _{q,k}	H _{g,k}	H _{q,k}	V _{g,k}	V _{q,k}	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	105.55	-12.50	0.00	0.00	0.00	19.50	0.00	2	104.41	0.00	0.00	-101.70	0.00	0.00	0.00	Nr.	y	Neigung	Länge	N _d	N(g+q+w) _k	N(g+w) _k	N _{w,k}	EA	EI	N _{d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-245.73	-190.25	-190.25	-166.54	3.900E+7	2.100E+7	-242.57 Steife	x	y	w _{x,d}	w _{y,d}	N _d	Q _d	M _d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-11.0	0.0	-255.06	0.00	0.00	-7.47	103.72	-11.0	0.0	-255.06	0.00	0.00	-7.47	103.72	-11.0	0.0	-255.06	0.00	0.00	-6.64	103.72	-11.0	0.0	-255.06	0.00	0.00	-5.81	103.72	-11.0	0.0	-255.06	0.00	0.00	-4.98	103.72	-11.0	0.0	-255.06	0.00	0.00	-4.15	103.72	-11.0	0.0	-255.06	0.00	0.00	-3.32	103.72	-11.0	0.0	-255.06	0.00	0.00	-2.49	103.72	-11.0	0.0	-255.06	0.00	0.00	-1.66	103.72	-11.0	0.0	-255.06	0.00	0.00	-0.83	103.72	-11.0	0.0	-255.06	0.00	0.00	0.00	103.72	-11.1	0.0	-255.06	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0086	Schicht	UK	gam _k	gam' _k	phi _k	c _k	d(p)/phi	d(a)/phi	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.55	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.55	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667
Nr.	Tiefe	M _{g,k}	M _{q,k}	H _{g,k}	H _{q,k}	V _{g,k}	V _{q,k}																																																																																																																																																																																																																				
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td></td></tr><tr><td>1</td><td>105.55</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.74</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.55</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.100</td><td>106.090</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.550</td><td>0.000</td><td>5.200</td><td>0.00</td><td>0.00</td></tr><tr><td>105.550</td><td>105.500</td><td>5.200</td><td>5.681</td><td>0.00</td><td>0.49</td></tr><tr><td>105.500</td><td>105.049</td><td>5.681</td><td>10.029</td><td>0.49</td><td>4.93</td></tr><tr><td>105.049</td><td>104.740</td><td>10.029</td><td>13.000</td><td>4.93</td><td>7.97</td></tr><tr><td>104.740</td><td>104.410</td><td>0.000</td><td>0.000</td><td>7.97</td><td>11.21</td></tr><tr><td>104.410</td><td>104.049</td><td>0.000</td><td>0.000</td><td>11.21</td><td>14.76</td></tr><tr><td>104.049</td><td>103.740</td><td>0.000</td><td>0.000</td><td>14.76</td><td>17.80</td></tr><tr><td>103.740</td><td>103.720</td><td>0.000</td><td>21.448</td><td>17.80</td><td>18.00</td></tr><tr><td>103.720</td><td>103.603</td><td>21.448</td><td>21.945</td><td>18.00</td><td>19.14</td></tr><tr><td>103.603</td><td>103.479</td><td>21.945</td><td>48.775</td><td>19.14</td><td>20.36</td></tr><tr><td>103.479</td><td>103.467</td><td>48.775</td><td>52.755</td><td>20.36</td><td>20.49</td></tr><tr><td>103.467</td><td>103.355</td><td>52.755</td><td>70.508</td><td>20.49</td><td>21.59</td></tr><tr><td>103.355</td><td>103.325</td><td>70.508</td><td>77.246</td><td>21.59</td><td>21.88</td></tr><tr><td>103.325</td><td>103.231</td><td>77.246</td><td>93.989</td><td>21.88</td><td>22.81</td></tr><tr><td>103.231</td><td>103.216</td><td>93.989</td><td>97.233</td><td>22.81</td><td>22.95</td></tr><tr><td>103.216</td><td>103.106</td><td>97.233</td><td>97.458</td><td>22.95</td><td>24.03</td></tr><tr><td>103.106</td><td>103.100</td><td>97.458</td><td>97.671</td><td>24.03</td><td>24.09</td></tr><tr><td>103.100</td><td>102.982</td><td>97.671</td><td>101.696</td><td>24.09</td><td>25.25</td></tr><tr><td>102.982</td><td>102.965</td><td>101.696</td><td>102.681</td><td>25.25</td><td>25.42</td></tr><tr><td>102.965</td><td>102.948</td><td>102.681</td><td>101.232</td><td>25.42</td><td>25.59</td></tr><tr><td>102.948</td><td>102.858</td><td>101.232</td><td>104.018</td><td>25.59</td><td>26.47</td></tr><tr><td>102.858</td><td>102.670</td><td>104.018</td><td>113.420</td><td>26.47</td><td>28.32</td></tr><tr><td>102.670</td><td>102.651</td><td>113.420</td><td>112.557</td><td>28.32</td><td>28.51</td></tr><tr><td>102.651</td><td>102.570</td><td>112.557</td><td>109.132</td><td>28.51</td><td>29.30</td></tr><tr><td>102.570</td><td>102.550</td><td>109.132</td><td>109.776</td><td>29.30</td><td>29.50</td></tr><tr><td>102.550</td><td>102.373</td><td>79.398</td><td>83.553</td><td>0.00</td><td>0.00</td></tr><tr><td>102.373</td><td>102.105</td><td>83.553</td><td>76.892</td><td>0.00</td><td>0.00</td></tr><tr><td>102.105</td><td>102.076</td><td>76.892</td><td>77.194</td><td>0.00</td><td>0.00</td></tr><tr><td>102.076</td><td>101.779</td><td>77.194</td><td>69.286</td><td>0.00</td><td>0.00</td></tr><tr><td>101.779</td><td>101.635</td><td>69.286</td><td>61.293</td><td>0.00</td><td>0.00</td></tr><tr><td>101.635</td><td>101.165</td><td>61.293</td><td>47.117</td><td>0.00</td><td>0.00</td></tr><tr><td>101.165</td><td>101.060</td><td>47.117</td><td>46.009</td><td>0.00</td><td>0.00</td></tr><tr><td>101.060</td><td>100.695</td><td>46.009</td><td>42.130</td><td>0.00</td><td>0.00</td></tr><tr><td>100.695</td><td>100.450</td><td>42.130</td><td>43.294</td><td>0.00</td><td>0.00</td></tr><tr><td>100.450</td><td>100.058</td><td>43.294</td><td>45.156</td><td>0.00</td><td>0.00</td></tr><tr><td>100.058</td><td>99.911</td><td>45.156</td><td>45.854</td><td>0.00</td><td>0.00</td></tr><tr><td>99.911</td><td>99.058</td><td>45.854</td><td>49.353</td><td>0.00</td><td>0.00</td></tr><tr><td>99.058</td><td>98.054</td><td>49.353</td><td>53.468</td><td>0.00</td><td>0.00</td></tr><tr><td>98.054</td><td>97.051</td><td>53.468</td><td>57.584</td><td>0.00</td><td>0.00</td></tr><tr><td>97.051</td><td>96.399</td><td>57.584</td><td>60.259</td><td>0.00</td><td>0.00</td></tr><tr><td>96.399</td><td>80.000</td><td>60.259</td><td>127.520</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]		1	105.55	1.000	1.000	0.000	0.00	40.89	0.179	2	103.74	1.000	1.000	0.000	0.00	40.89	0.179	3	102.55	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	0.000	0.000	0.00	0.00	106.090	105.550	0.000	5.200	0.00	0.00	105.550	105.500	5.200	5.681	0.00	0.49	105.500	105.049	5.681	10.029	0.49	4.93	105.049	104.740	10.029	13.000	4.93	7.97	104.740	104.410	0.000	0.000	7.97	11.21	104.410	104.049	0.000	0.000	11.21	14.76	104.049	103.740	0.000	0.000	14.76	17.80	103.740	103.720	0.000	21.448	17.80	18.00	103.720	103.603	21.448	21.945	18.00	19.14	103.603	103.479	21.945	48.775	19.14	20.36	103.479	103.467	48.775	52.755	20.36	20.49	103.467	103.355	52.755	70.508	20.49	21.59	103.355	103.325	70.508	77.246	21.59	21.88	103.325	103.231	77.246	93.989	21.88	22.81	103.231	103.216	93.989	97.233	22.81	22.95	103.216	103.106	97.233	97.458	22.95	24.03	103.106	103.100	97.458	97.671	24.03	24.09	103.100	102.982	97.671	101.696	24.09	25.25	102.982	102.965	101.696	102.681	25.25	25.42	102.965	102.948	102.681	101.232	25.42	25.59	102.948	102.858	101.232	104.018	25.59	26.47	102.858	102.670	104.018	113.420	26.47	28.32	102.670	102.651	113.420	112.557	28.32	28.51	102.651	102.570	112.557	109.132	28.51	29.30	102.570	102.550	109.132	109.776	29.30	29.50	102.550	102.373	79.398	83.553	0.00	0.00	102.373	102.105	83.553	76.892	0.00	0.00	102.105	102.076	76.892	77.194	0.00	0.00	102.076	101.779	77.194	69.286	0.00	0.00	101.779	101.635	69.286	61.293	0.00	0.00	101.635	101.165	61.293	47.117	0.00	0.00	101.165	101.060	47.117	46.009	0.00	0.00	101.060	100.695	46.009	42.130	0.00	0.00	100.695	100.450	42.130	43.294	0.00	0.00	100.450	100.058	43.294	45.156	0.00	0.00	100.058	99.911	45.156	45.854	0.00	0.00	99.911	99.058	45.854	49.353	0.00	0.00	99.058	98.054	49.353	53.468	0.00	0.00	98.054	97.051	53.468	57.584	0.00	0.00	97.051	96.399	57.584	60.259	0.00	0.00	96.399	80.000	60.259	127.520	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	<div>Statisch geprüft</div> <div>für</div> <div>Standicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																
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4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																
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103.216	103.106	97.233	97.458	22.95	24.03																																																																																																																																																																																																																																																																																																																																		
103.106	103.100	97.458	97.671	24.03	24.09																																																																																																																																																																																																																																																																																																																																		
103.100	102.982	97.671	101.696	24.09	25.25																																																																																																																																																																																																																																																																																																																																		
102.982	102.965	101.696	102.681	25.25	25.42																																																																																																																																																																																																																																																																																																																																		
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102.550	102.373	79.398	83.553	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
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102.105	102.076	76.892	77.194	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
102.076	101.779	77.194	69.286	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
101.779	101.635	69.286	61.293	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
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Kapitel: 4 LF 4 (BS-P)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																					
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																					

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.57 102.55 0.00 0.00 102.55 102.37 -11.33 -18.31 102.37 102.11 -18.31 -28.88 102.11 102.08 -28.88 -30.04 102.08 101.78 -30.04 -41.77 101.78 101.64 -41.77 -47.44 101.64 101.16 -47.44 -66.00 101.16 101.06 -66.00 -70.12 101.06 100.69 -70.12 -84.55 100.69 100.45 -84.55 -94.22 100.45 100.06 -94.22 -109.69 100.06 99.91 -109.69 -115.49 99.91 99.06 -115.49 -149.15 99.06 98.05 -149.15 -188.75 98.05 97.05 -188.75 -228.35 97.05 96.40 -228.35 -254.09 96.40 80.00 -254.09 -901.29</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.10 0.0 0.0 0.0 106.09 -0.2 0.0 0.0 105.55 -13.3 -1.8 -0.3 105.55 -39.6 -1.8 -17.2 105.50 -40.8 -2.2 -17.3 105.05 -51.7 -8.3 -19.5 104.74 -59.1 -15.5 -23.1 104.41 -67.1 -19.8 -28.9 104.41 -67.1 -157.1 -28.9 104.05 -75.8 -163.4 -86.8 103.74 -83.3 -170.2 -138.2 103.72 -83.9 -171.2 -141.6 -255.1 103.72 -83.9 83.8 -141.6 103.60 -87.6 77.7 -132.2 103.48 -92.1 68.8 -123.0 103.47 -92.6 67.6 -122.2 103.35 -97.6 55.7 -115.3 103.33 -99.1 52.0 -113.7 103.23 -104.1 38.8 -109.4 103.22 -105.0 36.6 -108.8 103.11 -111.3 19.5 -105.7 103.10 -111.6 18.5 -105.6 102.98 -118.5 -0.4 -104.5 102.97 -119.5 -3.2 -104.6 102.95 -120.5 -6.0 -104.7 102.86 -125.9 -21.0 -105.9 102.67 -137.3 -53.9 -112.8 102.65 -138.6 -57.5 -113.9 102.57 -143.5 -71.9 -119.1 102.55 -144.8 -75.6 -120.6 102.37 -148.5 -89.6 -135.4 102.11 -149.7 -103.7 -161.4 102.08 -149.6 -104.7 -164.5 101.78 -147.7 -109.5 -196.6 101.64 -145.6 -107.7 -212.2 101.16 -133.9 -82.4 -258.0 101.06 -130.2 -73.2 -266.1 100.69 -114.5 -32.4 -285.8 100.45 -102.0 0.3 -289.7</div>		
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage O2/31
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>100.06 -85.4 43.3 -280.8</div><div>99.91 -80.4 56.1 -273.4</div><div>99.06 -62.3 100.8 -203.1</div><div>98.05 -60.6 99.8 -98.2</div><div>97.05 -75.2 52.7 -18.1</div><div>96.40 -89.1 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 0.0 0.0</div><div>105.55 -10.4 -1.4 -0.3</div><div>105.55 -29.9 -1.4 -12.8</div><div>105.50 -30.9 -1.7 -12.8</div><div>105.05 -39.4 -6.5 -14.5</div><div>104.74 -45.2 -12.0 -17.3</div><div>104.41 -51.5 -15.2 -21.8</div><div>104.41 -51.5 -116.9 -21.8</div><div>104.05 -58.3 -121.6 -64.8</div><div>103.74 -64.2 -126.6 -103.1</div><div>103.72 -64.6 -127.3 -105.6 -190.3</div><div>103.72 -64.6 62.9 -105.6</div><div>103.60 -67.5 58.2 -98.6</div><div>103.48 -71.1 51.4 -91.7</div><div>103.47 -71.5 50.5 -91.1</div><div>103.35 -75.4 41.2 -85.9</div><div>103.33 -76.6 38.4 -84.7</div><div>103.23 -80.5 28.2 -81.6</div><div>103.22 -81.2 26.5 -81.2</div><div>103.11 -86.1 13.2 -79.0</div><div>103.10 -86.4 12.4 -78.9</div><div>102.98 -91.8 -2.2 -78.3</div><div>102.97 -92.6 -4.4 -78.4</div><div>102.95 -93.4 -6.6 -78.5</div><div>102.86 -97.6 -18.2 -79.6</div><div>102.67 -106.6 -43.7 -85.3</div><div>102.65 -107.5 -46.5 -86.2</div><div>102.57 -111.4 -57.7 -90.4</div><div>102.55 -112.4 -60.5 -91.6</div><div>102.37 -115.6 -71.5 -103.4</div><div>102.11 -116.5 -82.5 -124.1</div><div>102.08 -116.5 -83.3 -126.6</div><div>101.78 -114.9 -87.1 -152.1</div><div>101.64 -113.3 -85.6 -164.5</div><div>101.16 -104.2 -65.7 -200.9</div><div>101.06 -101.4 -58.4 -207.4</div><div>100.69 -89.1 -26.2 -223.2</div><div>100.45 -79.3 -0.5 -226.5</div><div>100.06 -66.4 33.3 -219.7</div><div>99.91 -62.5 43.5 -214.0</div><div>99.06 -48.4 78.9 -159.2</div><div>98.05 -47.2 78.2 -77.0</div><div>97.05 -58.6 41.4 -14.2</div><div>96.40 -69.5 0.0 0.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 0.0 0.0</div><div>105.55 -10.4 -1.4 -0.3</div><div>105.55 -29.9 -1.4 -12.8</div><div>105.50 -30.9 -1.7 -12.8</div><div>105.05 -39.4 -6.5 -14.5</div><div>104.74 -45.2 -12.0 -17.3</div><div>104.41 -51.5 -15.2 -21.8</div><div>104.41 -51.5 -116.9 -21.8</div><div>104.05 -58.3 -121.6 -64.8</div><div>103.74 -64.2 -126.6 -103.1</div><div>103.72 -64.6 -127.3 -105.6 -190.3</div></div></div></div>					
Schnitt: Anlage O2 Schnitt 6L				Seite Anlage 02/32	
Kapitel: 4 LF 4 (BS-P)				Archiv Nr.:	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div><div>103.72</div><div>-64.6</div><div>62.9</div><div>-105.6</div></div><div><div>103.60</div><div>-67.5</div><div>58.2</div><div>-98.6</div></div><div><div>103.48</div><div>-71.1</div><div>51.4</div><div>-91.7</div></div><div><div>103.47</div><div>-71.5</div><div>50.5</div><div>-91.1</div></div><div><div>103.35</div><div>-75.4</div><div>41.2</div><div>-85.9</div></div><div><div>103.33</div><div>-76.6</div><div>38.4</div><div>-84.7</div></div><div><div>103.23</div><div>-80.5</div><div>28.2</div><div>-81.6</div></div><div><div>103.22</div><div>-81.2</div><div>26.5</div><div>-81.2</div></div><div><div>103.11</div><div>-86.1</div><div>13.2</div><div>-79.0</div></div><div><div>103.10</div><div>-86.4</div><div>12.4</div><div>-78.9</div></div><div><div>102.98</div><div>-91.8</div><div>-2.2</div><div>-78.3</div></div><div><div>102.97</div><div>-92.6</div><div>-4.4</div><div>-78.4</div></div><div><div>102.95</div><div>-93.4</div><div>-6.6</div><div>-78.5</div></div><div><div>102.86</div><div>-97.6</div><div>-18.2</div><div>-79.6</div></div><div><div>102.67</div><div>-106.6</div><div>-43.7</div><div>-85.3</div></div><div><div>102.65</div><div>-107.5</div><div>-46.5</div><div>-86.2</div></div><div><div>102.57</div><div>-111.4</div><div>-57.7</div><div>-90.4</div></div><div><div>102.55</div><div>-112.4</div><div>-60.5</div><div>-91.6</div></div><div><div>102.37</div><div>-115.6</div><div>-71.5</div><div>-103.4</div></div><div><div>102.11</div><div>-116.5</div><div>-82.5</div><div>-124.1</div></div><div><div>102.08</div><div>-116.5</div><div>-83.3</div><div>-126.6</div></div><div><div>101.78</div><div>-114.9</div><div>-87.1</div><div>-152.1</div></div><div><div>101.64</div><div>-113.3</div><div>-85.6</div><div>-164.5</div></div><div><div>101.16</div><div>-104.2</div><div>-65.7</div><div>-200.9</div></div><div><div>101.06</div><div>-101.4</div><div>-58.4</div><div>-207.4</div></div><div><div>100.69</div><div>-89.1</div><div>-26.2</div><div>-223.2</div></div><div><div>100.45</div><div>-79.3</div><div>-0.5</div><div>-226.5</div></div><div><div>100.06</div><div>-66.4</div><div>33.3</div><div>-219.7</div></div><div><div>99.91</div><div>-62.5</div><div>43.5</div><div>-214.0</div></div><div><div>99.06</div><div>-48.4</div><div>78.9</div><div>-159.2</div></div><div><div>98.05</div><div>-47.2</div><div>78.2</div><div>-77.0</div></div><div><div>97.05</div><div>-58.6</div><div>41.4</div><div>-14.2</div></div><div><div>96.40</div><div>-69.5</div><div>0.0</div><div>0.0</div></div></div></div></div> <div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.05</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.41</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.05</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.74</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-124.5</div></div><div><div>103.60</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.48</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.47</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.35</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.33</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.23</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.22</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.11</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.98</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.97</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.95</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.86</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.67</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.65</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.57</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.37</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.11</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.08</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.78</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.64</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.06</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div> <div><div><div>Schnitt:</div><div>Anlage O2</div><div>Schnitt 6L</div></div><div><div>Seite Anlage</div><div>02/33</div></div></div> <div><div><div>Kapitel:</div><div>4</div><div>LF 4 (BS-P)</div></div><div><div>Archiv Nr.:</div><div></div></div></div> <div><div><div>Vorgang:</div><div>Genehmigungsstatik</div></div><div><div>Projekt-Nr.:</div><div>2004-0025</div></div></div>					



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																													
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																													
<table><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.91</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> 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3.54	-8.3	-	-	-	103.48	-8.2	-	-	-	103.48	-8.2	-	-	-	103.47	-8.1	-	-	-	103.47	-8.1	-	-	-	103.41	-8.0	-	-	-	103.41	-8.0	-	-	-	103.35	-7.9	-	-	-	103.35	-7.9	-	-	-	103.33	-7.9	-	-	-	103.33	-7.9	-	-	-	103.28	-7.8	-	-	-	103.28	-7.8	-	-	-	103.23	-7.7	-	-	-	103.23	-7.7	-	-	-	103.22	-7.6	-	-	-	103.22	-7.6	-	-	-	103.16	-7.5	-	-	-	103.16	-7.5	-	-	-	103.11	-7.4	-	-	-
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</td><td>144.36</td><td></td><td></td></tr><tr><td>100.69</td><td>-3.2</td><td>44.25</td><td>141.11</td><td>147.97</td><td></td><td></td></tr><tr><td>100.69</td><td>-3.2</td><td>46.40</td><td>147.98</td><td>147.97</td><td></td><td></td></tr><tr><td>100.65</td><td>-3.1</td><td>46.40</td><td>144.82</td><td>151.35</td><td></td><td></td></tr><tr><td>100.50</td><td>-2.9</td><td>50.00</td><td>146.10</td><td>161.50</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.9</td><td>50.00</td><td>142.88</td><td>164.89</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.9</td><td>50.00</td><td>142.88</td><td>164.89</td><td></td><td></td></tr><tr><td>100.40</td><td>-2.8</td><td>50.00</td><td>139.70</td><td>168.27</td><td></td><td></td></tr><tr><td>100.11</td><td>-2.4</td><td>50.00</td><td>121.62</td><td>188.57</td><td></td><td></td></tr><tr><td>100.06</td><td>-2.4</td><td>50.00</td><td>118.77</td><td>191.95</td><td></td><td></td></tr><tr><td>100.06</td><td>-2.4</td><td>50.00</td><td>118.77</td><td>191.95</td><td></td><td></td></tr><tr><td>100.01</td><td>-2.3</td><td>50.00</td><td>115.96</td><td>195.34</td><td></td><td></td></tr><tr><td>99.96</td><td>-2.3</td><td>50.00</td><td>113.19</td><td>198.72</td><td></td><td></td></tr><tr><td>99.91</td><td>-2.2</td><td>50.00</td><td>110.47</td><td>202.10</td><td></td><td></td></tr><tr><td>99.91</td><td>-2.2</td><td>50.00</td><td>110.47</td><td>202.10</td><td></td><td></td></tr><tr><td>99.86</td><td>-2.2</td><td>50.00</td><td>107.73</td><td>205.57</td><td></td><td></td></tr><tr><td>99.11</td><td>-1.4</td><td>50.00</td><td>71.69</td><td>257.54</td><td></td><td></td></tr></table>							103.11	-7.4	-	-	-			103.10	-7.4	-	-	-			103.10	-7.4	-	-	-			103.04	-7.3	-	-	-			103.04	-7.3	-	-	-			102.98	-7.2	-	-	-			102.98	-7.2	-	-	-			102.97	-7.1	-	-	-			102.97	-7.1	-	-	-			102.95	-7.1	-	-	-			102.95	-7.1	-	-	-			102.90	-7.0	-	-	-			102.90	-7.0	-	-	-			102.86	-6.9	-	-	-			102.86	-6.9	-	-	-			102.81	-6.8	-	-	-			102.72	-6.7	-	-	-			102.67	-6.6	-	-	-			102.67	-6.6	-	-	-			102.65	-6.5	-	-	-			102.65	-6.5	-	-	-			102.60	-6.4	-	-	-			102.60	-6.4	-	-	-			102.57	-6.4	-	-	-			102.57	-6.4	-	-	-			102.55	-6.3	0.00	0.00	0.00			102.55	-6.3	0.00	0.00	19.82			102.51	-6.2	0.00	0.00	22.87			102.42	-6.1	4.77	28.98	28.98			102.37	-6.0	4.77	28.58	32.03			102.37	-6.0	5.34	32.04	32.03			102.32	-5.9	5.34	31.50	35.73			102.16	-5.6	8.37	46.84	46.84			102.11	-5.5	8.37	46.01	50.54			102.11	-5.5	9.19	50.54	50.54			102.08	-5.4	9.19	50.04	52.57			102.08	-5.4	9.66	52.57	52.57			102.03	-5.4	9.66	51.70	55.99			101.83	-5.0	13.94	69.68	69.67			101.78	-4.9	13.94	68.46	73.10			101.78	-4.9	14.88	73.10	73.10			101.73	-4.8	14.88	71.85	76.40			101.68	-4.7	16.80	79.71	79.71			101.64	-4.7	16.80	78.32	83.01			101.64	-4.7	17.81	83.02	83.01			101.58	-4.6	17.81	81.43	86.62			101.22	-4.0	28.18	111.89	111.88			101.16	-3.9	28.18	109.56	115.49			101.16	-3.9	29.71	115.50	115.49			101.11	-3.8	29.71	113.07	119.10			101.11	-3.8	31.29	119.10	119.10			101.06	-3.7	31.29	116.58	122.71			101.06	-3.7	32.94	122.71	122.71			101.01	-3.6	32.94	120.09	126.32			100.75	-3.3	44.25	144.37	144.36			100.69	-3.2	44.25	141.11	147.97			100.69	-3.2	46.40	147.98	147.97			100.65	-3.1	46.40	144.82	151.35			100.50	-2.9	50.00	146.10	161.50			100.45	-2.9	50.00	142.88	164.89			100.45	-2.9	50.00	142.88	164.89			100.40	-2.8	50.00	139.70	168.27			100.11	-2.4	50.00	121.62	188.57			100.06	-2.4	50.00	118.77	191.95			100.06	-2.4	50.00	118.77	191.95			100.01	-2.3	50.00	115.96	195.34			99.96	-2.3	50.00	113.19	198.72			99.91	-2.2	50.00	110.47	202.10			99.91	-2.2	50.00	110.47	202.10			99.86	-2.2	50.00	107.73	205.57			99.11	-1.4	50.00	71.69	257.54		
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102.08	-5.4	9.66	52.57	52.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.03	-5.4	9.66	51.70	55.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.83	-5.0	13.94	69.68	69.67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.78	-4.9	13.94	68.46	73.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.78	-4.9	14.88	73.10	73.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.73	-4.8	14.88	71.85	76.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.68	-4.7	16.80	79.71	79.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.64	-4.7	16.80	78.32	83.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.64	-4.7	17.81	83.02	83.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.58	-4.6	17.81	81.43	86.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-4.0	28.18	111.89	111.88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.16	-3.9	28.18	109.56	115.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.16	-3.9	29.71	115.50	115.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.11	-3.8	29.71	113.07	119.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.11	-3.8	31.29	119.10	119.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.06	-3.7	31.29	116.58	122.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.06	-3.7	32.94	122.71	122.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.01	-3.6	32.94	120.09	126.32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.75	-3.3	44.25	144.37	144.36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.69	-3.2	44.25	141.11	147.97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.69	-3.2	46.40	147.98	147.97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.65	-3.1	46.40	144.82	151.35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.50	-2.9	50.00	146.10	161.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.45	-2.9	50.00	142.88	164.89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.45	-2.9	50.00	142.88	164.89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.40	-2.8	50.00	139.70	168.27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.11	-2.4	50.00	121.62	188.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.06	-2.4	50.00	118.77	191.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.06	-2.4	50.00	118.77	191.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.01	-2.3	50.00	115.96	195.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.96	-2.3	50.00	113.19	198.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.91	-2.2	50.00	110.47	202.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.91	-2.2	50.00	110.47	202.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.86	-2.2	50.00	107.73	205.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.11	-1.4	50.00	71.69	257.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																									
Auftraggeber: Stadtverwaltung Leipzig																																																																											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																									
<table><tr><td>99.06</td><td>-1.4</td><td>50.00</td><td>69.59</td><td>261.01</td></tr><tr><td>99.06</td><td>-1.4</td><td>50.00</td><td>69.59</td><td>261.01</td></tr><tr><td>99.01</td><td>-1.4</td><td>50.00</td><td>67.53</td><td>264.47</td></tr><tr><td>98.10</td><td>-0.7</td><td>50.00</td><td>35.26</td><td>326.85</td></tr><tr><td>98.05</td><td>-0.7</td><td>50.00</td><td>33.68</td><td>330.31</td></tr><tr><td>98.05</td><td>-0.7</td><td>50.00</td><td>33.68</td><td>330.31</td></tr><tr><td>98.00</td><td>-0.6</td><td>50.00</td><td>32.11</td><td>333.78</td></tr><tr><td>97.10</td><td>-0.1</td><td>50.00</td><td>5.88</td><td>396.15</td></tr><tr><td>97.05</td><td>-0.1</td><td>50.00</td><td>4.49</td><td>399.62</td></tr><tr><td>97.05</td><td>-0.1</td><td>50.00</td><td>4.49</td><td>399.62</td></tr><tr><td>97.00</td><td>-0.1</td><td>50.00</td><td>3.10</td><td>403.08</td></tr><tr><td>96.45</td><td>0.2</td><td>50.00</td><td>-12.09</td><td>441.20</td></tr><tr><td>96.40</td><td>0.3</td><td>50.00</td><td>-13.47</td><td>444.66</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03146503 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.70 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 183.55 kN/m G',k = 0.00 kN/m Pv,k = 19.50 kN/m Eav,k = 79.77 kN/m (Eah,k = 441.42 kN/m) Bv,k = 159.17 Summe V,k = 123.66 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 97.28 bis 93.76 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>96.40</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 96.40 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 338.25 / 1.40 = 241.61 kN/m Rd = Rb,d + Rs1,d = 1106.66 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 247.80 - 0.00 + 101.71 + 26.33 = 375.83 kN/m ==> µ = V,d / Rd = 375.83 / 1106.66 = 0.34</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			99.06	-1.4	50.00	69.59	261.01	99.06	-1.4	50.00	69.59	261.01	99.01	-1.4	50.00	67.53	264.47	98.10	-0.7	50.00	35.26	326.85	98.05	-0.7	50.00	33.68	330.31	98.05	-0.7	50.00	33.68	330.31	98.00	-0.6	50.00	32.11	333.78	97.10	-0.1	50.00	5.88	396.15	97.05	-0.1	50.00	4.49	399.62	97.05	-0.1	50.00	4.49	399.62	97.00	-0.1	50.00	3.10	403.08	96.45	0.2	50.00	-12.09	441.20	96.40	0.3	50.00	-13.47	444.66	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	96.40	55.00	s3: Flussskies, -sand
99.06	-1.4	50.00	69.59	261.01																																																																							
99.06	-1.4	50.00	69.59	261.01																																																																							
99.01	-1.4	50.00	67.53	264.47																																																																							
98.10	-0.7	50.00	35.26	326.85																																																																							
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96.45	0.2	50.00	-12.09	441.20																																																																							
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von	bis	qs,k [kN/m²]	Bezeichnung																																																																								
102.55	96.40	55.00	s3: Flussskies, -sand																																																																								
Schnitt: Anlage O2 Schnitt 6L		Seite Anlage 02/36																																																																									
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025																																																																									
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																									

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

Anlage P2 Schnitt 7L

1 LF 1 (BS-T)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 7
Datei: 11_BS 7_LF1.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.10 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 105.75 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.00 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
gamma(G) = 1.20
gamma(G,Ruhe) = 1.10
gamma(Q) = 1.30
gamma(Ep) = 1.30
Anpassungsfaktor Erdwiderstand = 0.80

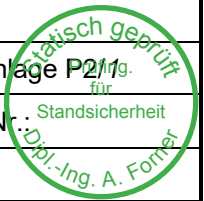
Lasten (einseitig begrenzt)
Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast
[-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-]
1 69.90 2.35 103.68 102.71 100.28 nein

Lasten (zweiseitig begrenzt)
Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast
[-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-]
1 183.71 0.55 0.85 103.68 103.45 102.99 102.97 102.61 nein
2 161.93 0.85 1.15 103.68 103.33 102.61 102.69 102.16 nein
3 140.14 1.15 1.45 103.68 103.20 102.16 102.39 101.69 nein
4 118.36 1.45 1.75 103.68 103.08 101.69 102.09 101.22 nein
5 96.58 1.75 2.05 103.68 102.96 101.22 101.79 100.75 nein
6 74.79 2.05 2.35 103.68 102.83 100.75 101.50 100.28 nein
7 46.00 0.00 0.55 103.68 103.68 103.22 102.99 nein
8 29.00 2.50 5.70 103.68 102.64 100.05 97.85 95.03 nein

Steuerparameter = 0.50

Zusatzdrücke
Nr. e(oben) e(unten) z(oben) z(unten) Typ
[-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-]
1 0.00 13.50 106.09 104.68 Ständig

Schnitt:	Anlage P2 Schnitt 7L	Seite Anlage P2/19.
Kapitel:	1 LF 1 (BS-T)	Archiv Nr. 19.
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div>Nr. Tiefe M,g,k M,q,k H,g,k H,q,k V,g,k V,q,k</div> <div>[-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m]</div> <div>1 104.35 0.00 0.00 -111.00 0.00 0.00 0.00</div> <div>Art des Fußlagers:</div> <div>Profillänge von 10.10 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.45 5.000 5.000</div> <div>105.45 103.68 5.000 5.000</div> <div>103.68 102.52 5.000 5.000</div> <div>102.52 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 790.368 / 1863.098 = 0.424$</div> <div>Bettungslager $B_{h,d} = 790.368 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1863.098 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c,k d(p)/phi d(a)/phi</div> <div>pas/akt [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [-] [-]</div> <div>1 105.45 19.00/0.00 10.00/0.00 30.00/0.00 0.00/0.00 -0.667 0.667</div> <div>2 103.68 17.00/0.00 8.50/0.00 22.50/0.00 0.00/0.00 -0.667 0.667</div> <div>3 102.52 17.00/17.00 8.50/8.50 22.50/22.50 3.00/3.00 -0.667 0.667</div> <div>4 80.00 21.00/21.00 11.50/11.50 32.50/32.50 0.00/0.00 -0.667 0.667</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.45 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>2 103.68 1.000 1.000 0.000 0.00 40.89 0.179</div> <div>3 102.52 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten $([g+q],k)$</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.100 106.090 0.000 0.000 0.00</div> <div>106.090 105.750 0.000 3.255 0.00</div> <div>105.750 105.500 3.255 5.649 0.00</div> <div>105.500 105.450 5.649 6.128 0.00</div> <div>105.450 105.050 6.128 9.957 0.50</div> <div>105.050 105.000 9.957 10.436 4.50</div> <div>105.000 104.680 10.436 13.500 5.00</div> <div>104.680 104.350 0.000 0.000 5.00</div> <div>104.350 104.092 0.000 0.000 5.00</div> <div>104.092 103.680 0.000 0.000 5.00</div> <div>103.680 103.452 0.000 22.333 5.00</div> <div>103.452 103.328 22.333 47.499 5.00</div> <div>103.328 103.223 47.499 80.687 5.00</div> <div>103.223 103.204 80.687 84.840 5.00</div> <div>103.204 103.079 84.840 120.230 5.00</div> <div>103.079 102.988 120.230 150.053 5.00</div> <div>102.988 102.972 150.053 153.771 5.00</div> <div>102.972 102.955 153.771 153.311 5.00</div> <div>102.955 102.831 153.311 153.387 5.00</div> <div>102.831 102.707 153.387 155.701 5.00</div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/2
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																															
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<table><tr><td>102.707</td><td>102.686</td><td>155.701</td><td>156.383</td><td>5.00</td><td>5.00</td></tr><tr><td>102.686</td><td>102.644</td><td>156.383</td><td>151.320</td><td>5.00</td><td>5.00</td></tr><tr><td>102.644</td><td>102.611</td><td>151.320</td><td>147.431</td><td>5.00</td><td>5.00</td></tr><tr><td>102.611</td><td>102.520</td><td>147.431</td><td>149.734</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.389</td><td>107.867</td><td>110.372</td><td>5.00</td><td>5.00</td></tr><tr><td>102.389</td><td>102.163</td><td>110.372</td><td>98.478</td><td>5.00</td><td>5.00</td></tr><tr><td>102.163</td><td>102.091</td><td>98.478</td><td>99.174</td><td>5.00</td><td>5.00</td></tr><tr><td>102.091</td><td>101.794</td><td>99.174</td><td>87.608</td><td>5.00</td><td>5.00</td></tr><tr><td>101.794</td><td>101.693</td><td>87.608</td><td>80.327</td><td>5.00</td><td>5.00</td></tr><tr><td>101.693</td><td>101.497</td><td>80.327</td><td>74.331</td><td>5.00</td><td>5.00</td></tr><tr><td>101.497</td><td>101.223</td><td>74.331</td><td>59.926</td><td>5.00</td><td>5.00</td></tr><tr><td>101.223</td><td>101.066</td><td>59.926</td><td>56.192</td><td>5.00</td><td>5.00</td></tr><tr><td>101.066</td><td>100.962</td><td>56.192</td><td>53.702</td><td>5.00</td><td>5.00</td></tr><tr><td>100.962</td><td>100.753</td><td>53.702</td><td>48.722</td><td>5.00</td><td>5.00</td></tr><tr><td>100.753</td><td>100.282</td><td>48.722</td><td>47.032</td><td>5.00</td><td>5.00</td></tr><tr><td>100.282</td><td>100.094</td><td>47.032</td><td>48.553</td><td>5.00</td><td>5.00</td></tr><tr><td>100.094</td><td>100.047</td><td>48.553</td><td>48.933</td><td>5.00</td><td>5.00</td></tr><tr><td>100.047</td><td>99.050</td><td>48.933</td><td>53.021</td><td>5.00</td><td>5.00</td></tr><tr><td>99.050</td><td>98.303</td><td>53.021</td><td>56.087</td><td>5.00</td><td>5.00</td></tr><tr><td>98.303</td><td>98.054</td><td>56.087</td><td>57.109</td><td>5.00</td><td>5.00</td></tr><tr><td>98.054</td><td>97.854</td><td>57.109</td><td>57.926</td><td>5.00</td><td>5.00</td></tr><tr><td>97.854</td><td>97.052</td><td>57.926</td><td>58.278</td><td>5.00</td><td>5.00</td></tr><tr><td>97.052</td><td>96.099</td><td>58.278</td><td>58.695</td><td>5.00</td><td>5.00</td></tr><tr><td>96.099</td><td>95.999</td><td>58.695</td><td>58.739</td><td>5.00</td><td>5.00</td></tr><tr><td>95.999</td><td>95.031</td><td>58.739</td><td>59.163</td><td>5.00</td><td>5.00</td></tr><tr><td>95.031</td><td>80.000</td><td>59.163</td><td>120.815</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.10 105.75</p> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.45</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>103.68</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.09</td><td>105.75</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>105.50</td><td>0.00</td><td>-14.63</td></tr><tr><td>105.50</td><td>105.45</td><td>-14.63</td><td>-17.56</td></tr><tr><td>105.45</td><td>105.05</td><td>-10.64</td><td>-23.34</td></tr><tr><td>105.05</td><td>105.00</td><td>-23.34</td><td>-24.92</td></tr><tr><td>105.00</td><td>104.68</td><td>-24.92</td><td>-30.00</td></tr><tr><td>104.68</td><td>104.35</td><td>-30.00</td><td>-35.24</td></tr><tr><td>104.35</td><td>104.09</td><td>-35.24</td><td>-39.33</td></tr><tr><td>104.09</td><td>103.68</td><td>-39.33</td><td>-45.87</td></tr><tr><td>103.68</td><td>103.45</td><td>-53.09</td><td>-56.70</td></tr><tr><td>103.45</td><td>103.33</td><td>-56.70</td><td>-58.67</td></tr><tr><td>103.33</td><td>103.22</td><td>-58.67</td><td>-60.34</td></tr><tr><td>103.22</td><td>103.20</td><td>-60.34</td><td>-60.65</td></tr><tr><td>103.20</td><td>103.08</td><td>-60.65</td><td>-62.62</td></tr><tr><td>103.08</td><td>102.99</td><td>-62.62</td><td>-64.06</td></tr><tr><td>102.99</td><td>102.97</td><td>-64.06</td><td>-64.32</td></tr><tr><td>102.97</td><td>102.96</td><td>-64.32</td><td>-64.59</td></tr><tr><td>102.96</td><td>102.83</td><td>-64.59</td><td>-66.56</td></tr><tr><td>102.83</td><td>102.71</td><td>-66.56</td><td>-68.53</td></tr><tr><td>102.71</td><td>102.69</td><td>-68.53</td><td>-68.86</td></tr><tr><td>102.69</td><td>102.64</td><td>-68.86</td><td>-69.52</td></tr><tr><td>102.64</td><td>102.61</td><td>-69.52</td><td>-70.05</td></tr><tr><td>102.61</td><td>102.52</td><td>-70.05</td><td>-71.49</td></tr><tr><td>102.52</td><td>102.39</td><td>-127.25</td><td>-132.83</td></tr></table>								102.707	102.686	155.701	156.383	5.00	5.00	102.686	102.644	156.383	151.320	5.00	5.00	102.644	102.611	151.320	147.431	5.00	5.00	102.611	102.520	147.431	149.734	5.00	5.00	102.520	102.389	107.867	110.372	5.00	5.00	102.389	102.163	110.372	98.478	5.00	5.00	102.163	102.091	98.478	99.174	5.00	5.00	102.091	101.794	99.174	87.608	5.00	5.00	101.794	101.693	87.608	80.327	5.00	5.00	101.693	101.497	80.327	74.331	5.00	5.00	101.497	101.223	74.331	59.926	5.00	5.00	101.223	101.066	59.926	56.192	5.00	5.00	101.066	100.962	56.192	53.702	5.00	5.00	100.962	100.753	53.702	48.722	5.00	5.00	100.753	100.282	48.722	47.032	5.00	5.00	100.282	100.094	47.032	48.553	5.00	5.00	100.094	100.047	48.553	48.933	5.00	5.00	100.047	99.050	48.933	53.021	5.00	5.00	99.050	98.303	53.021	56.087	5.00	5.00	98.303	98.054	56.087	57.109	5.00	5.00	98.054	97.854	57.109	57.926	5.00	5.00	97.854	97.052	57.926	58.278	5.00	5.00	97.052	96.099	58.278	58.695	5.00	5.00	96.099	95.999	58.695	58.739	5.00	5.00	95.999	95.031	58.739	59.163	5.00	5.00	95.031	80.000	59.163	120.815	5.00	5.00	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.45	5.005	5.388	30.000	-20.01	18.10	2	103.68	3.034	3.911	22.500	-15.01	23.23	3	102.52	3.034	3.911	22.500	-15.01	23.23	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.09	105.75	0.00	0.00	105.75	105.50	0.00	-14.63	105.50	105.45	-14.63	-17.56	105.45	105.05	-10.64	-23.34	105.05	105.00	-23.34	-24.92	105.00	104.68	-24.92	-30.00	104.68	104.35	-30.00	-35.24	104.35	104.09	-35.24	-39.33	104.09	103.68	-39.33	-45.87	103.68	103.45	-53.09	-56.70	103.45	103.33	-56.70	-58.67	103.33	103.22	-58.67	-60.34	103.22	103.20	-60.34	-60.65	103.20	103.08	-60.65	-62.62	103.08	102.99	-62.62	-64.06	102.99	102.97	-64.06	-64.32	102.97	102.96	-64.32	-64.59	102.96	102.83	-64.59	-66.56	102.83	102.71	-66.56	-68.53	102.71	102.69	-68.53	-68.86	102.69	102.64	-68.86	-69.52	102.64	102.61	-69.52	-70.05	102.61	102.52	-70.05	-71.49	102.52	102.39	-127.25	-132.83
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.39102.16-132.83-142.41</div><div>102.16102.09-142.41-145.46</div><div>102.09101.79-145.46-158.10</div><div>101.79101.69-158.10-162.40</div><div>101.69101.50-162.40-170.73</div><div>101.50101.22-170.73-182.38</div><div>101.22101.07-182.38-189.05</div><div>101.07100.96-189.05-193.49</div><div>100.96100.75-193.49-202.37</div><div>100.75100.28-202.37-222.36</div><div>100.28100.09-222.36-230.35</div><div>100.09100.05-230.35-232.35</div><div>100.0599.05-232.35-274.71</div><div>99.0598.30-274.71-306.48</div><div>98.3098.05-306.48-317.07</div><div>98.0597.85-317.07-325.54</div><div>97.8597.05-325.54-359.65</div><div>97.0596.10-359.65-400.15</div><div>96.1096.00-400.15-404.42</div><div>96.0095.03-404.42-445.54</div><div>95.0380.00-445.54-1084.40</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>106.100.00.00.0</div><div>106.09-0.20.00.0</div><div>105.75-7.6-0.6-0.1</div><div>105.50-12.00.9-0.2</div><div>105.45-12.61.9-0.1</div><div>105.05-18.09.42.0</div><div>105.00-18.510.72.5</div><div>104.68-21.120.57.4</div><div>104.35-23.934.916.6</div><div>104.35-23.9-98.316.6</div><div>104.09-26.3-87.9-7.3</div><div>103.68-30.6-72.7-40.4</div><div>103.45-33.1-70.8-56.7</div><div>103.33-34.6-71.9-65.6</div><div>103.22-35.9-76.5-73.3</div><div>103.20-36.1-77.7-74.8</div><div>103.08-37.6-88.8-85.1</div><div>102.99-38.8-100.4-93.7</div><div>102.97-39.0-102.8-95.4</div><div>102.96-39.2-105.4-97.1</div><div>102.83-40.9-124.0-111.4</div><div>102.71-42.5-143.0-127.9</div><div>102.69-42.8-146.2-130.9</div><div>102.64-43.4-152.5-137.1</div><div>102.61-43.9-157.5-142.3</div><div>102.52-45.1-170.9-157.3</div><div>102.39-35.3-156.2-178.7</div><div>102.16-17.4-127.1-210.7</div><div>102.09-11.9-117.8-219.5</div><div>101.799.0-82.5-249.2</div><div>101.6915.4-71.2-257.0</div><div>101.5026.9-50.0-268.9</div><div>101.2241.0-22.3-278.7</div><div>101.0748.1-7.2-281.0</div><div>100.9652.42.2-281.3</div><div>100.7560.319.9-279.0</div><div>100.2874.252.2-261.6</div><div>100.0978.561.8-250.8</div><div>100.0579.563.9-247.9</div><div>99.0592.186.0-169.9</div><div>98.3094.380.7-106.6</div><div>98.0594.175.8-87.1</div><div>97.8593.671.0-72.4</div><div>97.0589.745.5-25.1</div><div>96.1081.14.9-0.2</div><div>96.0080.00.00.0</div></div></div></div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/4
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Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																												
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102.99	-34.3	-84.1	-77.1																																																																																																																																																																																																																																																																											
102.97	-34.5	-86.2	-78.5																																																																																																																																																																																																																																																																											
102.96	-34.6	-88.4	-79.9																																																																																																																																																																																																																																																																											
102.83	-36.1	-104.6	-91.9																																																																																																																																																																																																																																																																											
102.71	-37.6	-121.1	-105.9																																																																																																																																																																																																																																																																											
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102.64	-38.3	-129.5	-113.7																																																																																																																																																																																																																																																																											
102.61	-38.7	-133.8	-118.1																																																																																																																																																																																																																																																																											
102.52	-39.8	-145.5	-130.8																																																																																																																																																																																																																																																																											
102.39	-31.4	-133.1	-149.1																																																																																																																																																																																																																																																																											
102.16	-16.2	-108.7	-176.5																																																																																																																																																																																																																																																																											
102.09	-11.5	-100.9	-184.0																																																																																																																																																																																																																																																																											
101.79	6.4	-71.1	-209.5																																																																																																																																																																																																																																																																											
101.69	11.9	-61.5	-216.2																																																																																																																																																																																																																																																																											
101.50	21.7	-43.6	-226.5																																																																																																																																																																																																																																																																											
101.22	33.7	-20.0	-235.2																																																																																																																																																																																																																																																																											
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100.28	62.2	43.6	-221.4																																																																																																																																																																																																																																																																											
100.09	65.9	51.9	-212.4																																																																																																																																																																																																																																																																											
100.05	66.7	53.7	-210.0																																																																																																																																																																																																																																																																											
99.05	77.6	72.8	-144.1																																																																																																																																																																																																																																																																											
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98.05	79.2	64.4	-74.0																																																																																																																																																																																																																																																																											
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96.10	67.4	4.2	-0.2																																																																																																																																																																																																																																																																											
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104.35	-21.1	29.5	14.0																																																																																																																																																																																																																																																																											
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103.68	-27.0	-59.7	-33.1																																																																																																																																																																																																																																																																											
103.45	-29.3	-58.1	-46.5																																																																																																																																																																																																																																																																											
103.33	-30.6	-59.1	-53.7																																																																																																																																																																																																																																																																											
103.22	-31.7	-63.2	-60.1																																																																																																																																																																																																																																																																											
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																												

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.99 -34.3 -84.1 -77.1</div><div>102.97 -34.5 -86.2 -78.5</div><div>102.96 -34.6 -88.4 -79.9</div><div>102.83 -36.1 -104.6 -91.9</div><div>102.71 -37.6 -121.1 -105.9</div><div>102.69 -37.8 -123.9 -108.5</div><div>102.64 -38.3 -129.5 -113.7</div><div>102.61 -38.7 -133.8 -118.1</div><div>102.52 -39.8 -145.5 -130.8</div><div>102.39 -31.4 -133.1 -149.1</div><div>102.16 -16.2 -108.7 -176.5</div><div>102.09 -11.5 -100.9 -184.0</div><div>101.79 6.4 -71.1 -209.5</div><div>101.69 11.9 -61.5 -216.2</div><div>101.50 21.7 -43.6 -226.5</div><div>101.22 33.7 -20.0 -235.2</div><div>101.07 39.8 -7.2 -237.3</div><div>100.96 43.5 0.9 -237.6</div><div>100.75 50.2 16.0 -235.8</div><div>100.28 62.2 43.6 -221.4</div><div>100.09 65.9 51.9 -212.4</div><div>100.05 66.7 53.7 -210.0</div><div>99.05 77.6 72.8 -144.1</div><div>98.30 79.4 68.4 -90.5</div><div>98.05 79.2 64.4 -74.0</div><div>97.85 78.8 60.3 -61.5</div><div>97.05 75.1 38.7 -21.3</div><div>96.10 67.4 4.2 -0.2</div><div>96.00 66.4 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div><div>106.10 0.0 0.0 0.0</div><div>106.09 0.0 0.0 0.0</div><div>105.75 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.45 0.0 0.0 0.0</div><div>105.05 0.0 0.0 0.0</div><div>105.00 0.0 0.0 0.0</div><div>104.68 0.0 0.0 0.0</div><div>104.35 0.0 0.0 0.0</div><div>104.09 0.0 0.0 0.0</div><div>103.68 0.0 0.0 0.0</div><div>103.45 0.0 0.0 0.0</div><div>103.33 0.0 0.0 0.0</div><div>103.22 0.0 0.0 0.0</div><div>103.20 0.0 0.0 0.0</div><div>103.08 0.0 0.0 0.0</div><div>102.99 0.0 0.0 0.0</div><div>102.97 0.0 0.0 0.0</div><div>102.96 0.0 0.0 0.0</div><div>102.83 0.0 0.0 0.0</div><div>102.71 0.0 0.0 0.0</div><div>102.69 0.0 0.0 0.0</div><div>102.64 0.0 0.0 0.0</div><div>102.61 0.0 0.0 0.0</div><div>102.52 0.0 0.0 0.0</div><div>102.39 0.0 0.0 0.0</div><div>102.16 0.0 0.0 0.0</div><div>102.09 0.0 0.0 0.0</div><div>101.79 0.0 0.0 0.0</div><div>101.69 0.0 0.0 0.0</div><div>101.50 0.0 0.0 0.0</div><div>101.22 0.0 0.0 0.0</div><div>101.07 0.0 0.0 0.0</div><div>100.96 0.0 0.0 0.0</div><div>100.75 0.0 0.0 0.0</div><div>100.28 0.0 0.0 0.0</div><div>100.09 0.0 0.0 0.0</div><div>100.05 0.0 0.0 0.0</div></div></div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/6
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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<div><div><div>99.050.00.00.0</div><div>98.300.00.00.0</div><div>98.050.00.00.0</div><div>97.850.00.00.0</div><div>97.050.00.00.0</div><div>96.100.00.00.0</div><div>96.000.00.00.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-10.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-10.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-10.6</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-10.3</td><td>1.85</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-10.2</td><td>1.85</td><td>18.85</td><td>23.77</td></tr><tr><td>105.50</td><td>-10.2</td><td>2.33</td><td>23.78</td><td>23.77</td></tr><tr><td>105.45</td><td>-10.1</td><td>2.33</td><td>23.56</td><td>28.53</td></tr><tr><td>105.45</td><td>-10.1</td><td>1.71</td><td>17.29</td><td>17.29</td></tr><tr><td>105.40</td><td>-10.0</td><td>1.71</td><td>17.14</td><td>19.87</td></tr><tr><td>105.10</td><td>-9.5</td><td>3.73</td><td>35.34</td><td>35.34</td></tr><tr><td>105.05</td><td>-9.4</td><td>3.73</td><td>35.01</td><td>37.92</td></tr><tr><td>105.05</td><td>-9.4</td><td>4.04</td><td>37.92</td><td>37.92</td></tr><tr><td>105.00</td><td>-9.3</td><td>4.04</td><td>37.56</td><td>40.50</td></tr><tr><td>105.00</td><td>-9.3</td><td>4.36</td><td>40.50</td><td>40.50</td></tr><tr><td>104.95</td><td>-9.2</td><td>4.36</td><td>40.08</td><td>41.87</td></tr><tr><td>104.73</td><td>-8.8</td><td>5.00</td><td>44.05</td><td>47.37</td></tr><tr><td>104.68</td><td>-8.7</td><td>5.00</td><td>43.57</td><td>48.75</td></tr><tr><td>104.68</td><td>-8.7</td><td>5.00</td><td>43.57</td><td>48.75</td></tr><tr><td>104.63</td><td>-8.6</td><td>5.00</td><td>43.14</td><td>49.97</td></tr><tr><td>104.40</td><td>-8.2</td><td>5.00</td><td>41.01</td><td>56.04</td></tr><tr><td>104.35</td><td>-8.1</td><td>5.00</td><td>40.58</td><td>57.26</td></tr><tr><td>104.35</td><td>-8.1</td><td>5.00</td><td>40.58</td><td>57.26</td></tr><tr><td>104.30</td><td>-8.0</td><td>5.00</td><td>40.11</td><td>58.59</td></tr><tr><td>104.14</td><td>-7.7</td><td>5.00</td><td>38.71</td><td>62.57</td></tr><tr><td>104.09</td><td>-7.6</td><td>5.00</td><td>38.24</td><td>63.90</td></tr><tr><td>104.09</td><td>-7.6</td><td>5.00</td><td>38.24</td><td>63.90</td></tr><tr><td>104.04</td><td>-7.6</td><td>5.00</td><td>37.78</td><td>65.23</td></tr><tr><td>103.73</td><td>-7.0</td><td>5.00</td><td>34.98</td><td>73.21</td></tr><tr><td>103.68</td><td>-6.9</td><td>5.00</td><td>34.52</td><td>74.54</td></tr><tr><td>103.68</td><td>-6.9</td><td>5.00</td><td>34.52</td><td>86.27</td></tr><tr><td>103.68</td><td>-6.9</td><td>5.00</td><td>34.49</td><td>86.33</td></tr><tr><td>103.50</td><td>-6.6</td><td>5.00</td><td>32.88</td><td>90.98</td></tr><tr><td>103.45</td><td>-6.5</td><td>5.00</td><td>32.47</td><td>92.14</td></tr><tr><td>103.45</td><td>-6.5</td><td>5.00</td><td>32.47</td><td>92.14</td></tr><tr><td>103.39</td><td>-6.4</td><td>5.00</td><td>31.92</td><td>93.74</td></tr><tr><td>103.39</td><td>-6.4</td><td>5.00</td><td>31.92</td><td>93.74</td></tr><tr><td>103.33</td><td>-6.3</td><td>5.00</td><td>31.37</td><td>95.35</td></tr><tr><td>103.33</td><td>-6.3</td><td>5.00</td><td>31.37</td><td>95.35</td></tr><tr><td>103.28</td><td>-6.2</td><td>5.00</td><td>30.90</td><td>96.70</td></tr><tr><td>103.28</td><td>-6.2</td><td>5.00</td><td>30.90</td><td>96.70</td></tr><tr><td>103.22</td><td>-6.1</td><td>5.00</td><td>30.44</td><td>98.06</td></tr><tr><td>103.22</td><td>-6.1</td><td>5.00</td><td>30.44</td><td>98.06</td></tr><tr><td>103.20</td><td>-6.1</td><td>5.00</td><td>30.27</td><td>98.55</td></tr><tr><td>103.20</td><td>-6.1</td><td>5.00</td><td>30.27</td><td>98.55</td></tr><tr><td>103.14</td><td>-5.9</td><td>5.00</td><td>29.72</td><td>100.15</td></tr><tr><td>103.14</td><td>-5.9</td><td>5.00</td><td>29.72</td><td>100.15</td></tr><tr><td>103.08</td><td>-5.8</td><td>5.00</td><td>29.18</td><td>101.75</td></tr><tr><td>103.08</td><td>-5.8</td><td>5.00</td><td>29.18</td><td>101.75</td></tr><tr><td>103.03</td><td>-5.8</td><td>5.00</td><td>28.78</td><td>102.93</td></tr><tr><td>103.03</td><td>-5.8</td><td>5.00</td><td>28.78</td><td>102.93</td></tr><tr><td>102.99</td><td>-5.7</td><td>5.00</td><td>28.39</td><td>104.10</td></tr><tr><td>102.99</td><td>-5.7</td><td>5.00</td><td>28.39</td><td>104.10</td></tr><tr><td>102.97</td><td>-5.6</td><td>5.00</td><td>28.24</td><td>104.52</td></tr><tr><td>102.97</td><td>-5.6</td><td>5.00</td><td>28.24</td><td>104.52</td></tr></table></div></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-11.3	-	-	-	106.09	-11.3	-	-	-	106.09	-11.3	-	-	-	106.04	-11.2	-	-	-	105.80	-10.7	-	-	-	105.75	-10.6	0.00	0.00	0.00	105.75	-10.6	0.00	0.00	0.00	105.70	-10.6	0.00	0.00	4.75	105.55	-10.3	1.85	19.02	19.02	105.50	-10.2	1.85	18.85	23.77	105.50	-10.2	2.33	23.78	23.77	105.45	-10.1	2.33	23.56	28.53	105.45	-10.1	1.71	17.29	17.29	105.40	-10.0	1.71	17.14	19.87	105.10	-9.5	3.73	35.34	35.34	105.05	-9.4	3.73	35.01	37.92	105.05	-9.4	4.04	37.92	37.92	105.00	-9.3	4.04	37.56	40.50	105.00	-9.3	4.36	40.50	40.50	104.95	-9.2	4.36	40.08	41.87	104.73	-8.8	5.00	44.05	47.37	104.68	-8.7	5.00	43.57	48.75	104.68	-8.7	5.00	43.57	48.75	104.63	-8.6	5.00	43.14	49.97	104.40	-8.2	5.00	41.01	56.04	104.35	-8.1	5.00	40.58	57.26	104.35	-8.1	5.00	40.58	57.26	104.30	-8.0	5.00	40.11	58.59	104.14	-7.7	5.00	38.71	62.57	104.09	-7.6	5.00	38.24	63.90	104.09	-7.6	5.00	38.24	63.90	104.04	-7.6	5.00	37.78	65.23	103.73	-7.0	5.00	34.98	73.21	103.68	-6.9	5.00	34.52	74.54	103.68	-6.9	5.00	34.52	86.27	103.68	-6.9	5.00	34.49	86.33	103.50	-6.6	5.00	32.88	90.98	103.45	-6.5	5.00	32.47	92.14	103.45	-6.5	5.00	32.47	92.14	103.39	-6.4	5.00	31.92	93.74	103.39	-6.4	5.00	31.92	93.74	103.33	-6.3	5.00	31.37	95.35	103.33	-6.3	5.00	31.37	95.35	103.28	-6.2	5.00	30.90	96.70	103.28	-6.2	5.00	30.90	96.70	103.22	-6.1	5.00	30.44	98.06	103.22	-6.1	5.00	30.44	98.06	103.20	-6.1	5.00	30.27	98.55	103.20	-6.1	5.00	30.27	98.55	103.14	-5.9	5.00	29.72	100.15	103.14	-5.9	5.00	29.72	100.15	103.08	-5.8	5.00	29.18	101.75	103.08	-5.8	5.00	29.18	101.75	103.03	-5.8	5.00	28.78	102.93	103.03	-5.8	5.00	28.78	102.93	102.99	-5.7	5.00	28.39	104.10	102.99	-5.7	5.00	28.39	104.10	102.97	-5.6	5.00	28.24	104.52	102.97	-5.6	5.00	28.24	104.52
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																				
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																				
<table><tr><td>102.96</td><td>-5.6</td><td>5.00</td><td>28.10</td><td>104.96</td></tr><tr><td>102.96</td><td>-5.6</td><td>5.00</td><td>28.10</td><td>104.96</td></tr><tr><td>102.89</td><td>-5.5</td><td>5.00</td><td>27.56</td><td>106.56</td></tr><tr><td>102.89</td><td>-5.5</td><td>5.00</td><td>27.56</td><td>106.56</td></tr><tr><td>102.83</td><td>-5.4</td><td>5.00</td><td>27.03</td><td>108.16</td></tr><tr><td>102.83</td><td>-5.4</td><td>5.00</td><td>27.03</td><td>108.16</td></tr><tr><td>102.77</td><td>-5.3</td><td>5.00</td><td>26.50</td><td>109.77</td></tr><tr><td>102.77</td><td>-5.3</td><td>5.00</td><td>26.50</td><td>109.77</td></tr><tr><td>102.71</td><td>-5.2</td><td>5.00</td><td>25.97</td><td>111.37</td></tr><tr><td>102.71</td><td>-5.2</td><td>5.00</td><td>25.97</td><td>111.37</td></tr><tr><td>102.69</td><td>-5.2</td><td>5.00</td><td>25.79</td><td>111.90</td></tr><tr><td>102.69</td><td>-5.2</td><td>5.00</td><td>25.79</td><td>111.90</td></tr><tr><td>102.64</td><td>-5.1</td><td>5.00</td><td>25.44</td><td>112.97</td></tr><tr><td>102.64</td><td>-5.1</td><td>5.00</td><td>25.44</td><td>112.97</td></tr><tr><td>102.61</td><td>-5.0</td><td>5.00</td><td>25.16</td><td>113.83</td></tr><tr><td>102.61</td><td>-5.0</td><td>5.00</td><td>25.16</td><td>113.83</td></tr><tr><td>102.57</td><td>-5.0</td><td>5.00</td><td>24.78</td><td>115.00</td></tr><tr><td>102.57</td><td>-5.0</td><td>5.00</td><td>24.78</td><td>115.00</td></tr><tr><td>102.52</td><td>-4.9</td><td>5.00</td><td>24.41</td><td>116.18</td></tr><tr><td>102.52</td><td>-4.9</td><td>42.36</td><td>206.78</td><td>206.78</td></tr><tr><td>102.48</td><td>-4.8</td><td>42.36</td><td>203.72</td><td>209.80</td></tr><tr><td>102.43</td><td>-4.7</td><td>44.93</td><td>212.83</td><td>212.82</td></tr><tr><td>102.39</td><td>-4.7</td><td>44.93</td><td>209.62</td><td>215.85</td></tr><tr><td>102.39</td><td>-4.7</td><td>46.26</td><td>215.85</td><td>215.85</td></tr><tr><td>102.34</td><td>-4.6</td><td>46.26</td><td>212.48</td><td>218.96</td></tr><tr><td>102.21</td><td>-4.4</td><td>50.00</td><td>218.86</td><td>228.30</td></tr><tr><td>102.16</td><td>-4.3</td><td>50.00</td><td>215.32</td><td>231.42</td></tr><tr><td>102.16</td><td>-4.3</td><td>50.00</td><td>215.32</td><td>231.42</td></tr><tr><td>102.09</td><td>-4.2</td><td>50.00</td><td>209.75</td><td>236.38</td></tr><tr><td>102.09</td><td>-4.2</td><td>50.00</td><td>209.75</td><td>236.38</td></tr><tr><td>102.04</td><td>-4.1</td><td>50.00</td><td>205.96</td><td>239.80</td></tr><tr><td>101.84</td><td>-3.8</td><td>50.00</td><td>191.18</td><td>253.49</td></tr><tr><td>101.79</td><td>-3.8</td><td>50.00</td><td>187.59</td><td>256.91</td></tr><tr><td>101.79</td><td>-3.8</td><td>50.00</td><td>187.59</td><td>256.91</td></tr><tr><td>101.74</td><td>-3.7</td><td>50.00</td><td>183.97</td><td>260.40</td></tr><tr><td>101.74</td><td>-3.7</td><td>50.00</td><td>183.97</td><td>260.40</td></tr><tr><td>101.69</td><td>-3.6</td><td>50.00</td><td>180.39</td><td>263.89</td></tr><tr><td>101.69</td><td>-3.6</td><td>50.00</td><td>180.39</td><td>263.89</td></tr><tr><td>101.64</td><td>-3.5</td><td>50.00</td><td>176.97</td><td>267.28</td></tr><tr><td>101.55</td><td>-3.4</td><td>50.00</td><td>170.27</td><td>274.05</td></tr><tr><td>101.50</td><td>-3.3</td><td>50.00</td><td>166.99</td><td>277.44</td></tr><tr><td>101.50</td><td>-3.3</td><td>50.00</td><td>166.99</td><td>277.44</td></tr><tr><td>101.44</td><td>-3.3</td><td>50.00</td><td>163.37</td><td>281.22</td></tr><tr><td>101.28</td><td>-3.1</td><td>50.00</td><td>152.87</td><td>292.59</td></tr><tr><td>101.22</td><td>-3.0</td><td>50.00</td><td>149.49</td><td>296.37</td></tr><tr><td>101.22</td><td>-3.0</td><td>50.00</td><td>149.49</td><td>296.37</td></tr><tr><td>101.17</td><td>-2.9</td><td>50.00</td><td>146.33</td><td>299.98</td></tr><tr><td>101.12</td><td>-2.9</td><td>50.00</td><td>143.21</td><td>303.59</td></tr><tr><td>101.07</td><td>-2.8</td><td>50.00</td><td>140.16</td><td>307.20</td></tr><tr><td>101.07</td><td>-2.8</td><td>50.00</td><td>140.16</td><td>307.20</td></tr><tr><td>101.01</td><td>-2.7</td><td>50.00</td><td>137.16</td><td>310.81</td></tr><tr><td>101.01</td><td>-2.7</td><td>50.00</td><td>137.16</td><td>310.81</td></tr><tr><td>100.96</td><td>-2.7</td><td>50.00</td><td>134.21</td><td>314.42</td></tr><tr><td>100.96</td><td>-2.7</td><td>50.00</td><td>134.21</td><td>314.42</td></tr><tr><td>100.91</td><td>-2.6</td><td>50.00</td><td>131.32</td><td>318.03</td></tr><tr><td>100.80</td><td>-2.5</td><td>50.00</td><td>125.70</td><td>325.24</td></tr><tr><td>100.75</td><td>-2.5</td><td>50.00</td><td>122.98</td><td>328.85</td></tr><tr><td>100.75</td><td>-2.5</td><td>50.00</td><td>122.98</td><td>328.85</td></tr><tr><td>100.70</td><td>-2.4</td><td>50.00</td><td>120.31</td><td>332.46</td></tr><tr><td>100.33</td><td>-2.1</td><td>50.00</td><td>103.11</td><td>357.72</td></tr><tr><td>100.28</td><td>-2.0</td><td>50.00</td><td>100.87</td><td>361.33</td></tr><tr><td>100.28</td><td>-2.0</td><td>50.00</td><td>100.87</td><td>361.33</td></tr><tr><td>100.24</td><td>-2.0</td><td>50.00</td><td>98.89</td><td>364.58</td></tr><tr><td>100.14</td><td>-1.9</td><td>50.00</td><td>95.06</td><td>371.07</td></tr><tr><td>100.09</td><td>-1.9</td><td>50.00</td><td>93.21</td><td>374.32</td></tr><tr><td>100.09</td><td>-1.9</td><td>50.00</td><td>93.21</td><td>374.32</td></tr><tr><td>100.05</td><td>-1.8</td><td>50.00</td><td>91.39</td><td>377.57</td></tr><tr><td>100.05</td><td>-1.8</td><td>50.00</td><td>91.39</td><td>377.57</td></tr><tr><td>100.00</td><td>-1.8</td><td>50.00</td><td>89.51</td><td>381.01</td></tr><tr><td>99.10</td><td>-1.3</td><td>50.00</td><td>62.52</td><td>442.96</td></tr><tr><td>99.05</td><td>-1.2</td><td>50.00</td><td>61.35</td><td>446.41</td></tr></table>							102.96	-5.6	5.00	28.10	104.96	102.96	-5.6	5.00	28.10	104.96	102.89	-5.5	5.00	27.56	106.56	102.89	-5.5	5.00	27.56	106.56	102.83	-5.4	5.00	27.03	108.16	102.83	-5.4	5.00	27.03	108.16	102.77	-5.3	5.00	26.50	109.77	102.77	-5.3	5.00	26.50	109.77	102.71	-5.2	5.00	25.97	111.37	102.71	-5.2	5.00	25.97	111.37	102.69	-5.2	5.00	25.79	111.90	102.69	-5.2	5.00	25.79	111.90	102.64	-5.1	5.00	25.44	112.97	102.64	-5.1	5.00	25.44	112.97	102.61	-5.0	5.00	25.16	113.83	102.61	-5.0	5.00	25.16	113.83	102.57	-5.0	5.00	24.78	115.00	102.57	-5.0	5.00	24.78	115.00	102.52	-4.9	5.00	24.41	116.18	102.52	-4.9	42.36	206.78	206.78	102.48	-4.8	42.36	203.72	209.80	102.43	-4.7	44.93	212.83	212.82	102.39	-4.7	44.93	209.62	215.85	102.39	-4.7	46.26	215.85	215.85	102.34	-4.6	46.26	212.48	218.96	102.21	-4.4	50.00	218.86	228.30	102.16	-4.3	50.00	215.32	231.42	102.16	-4.3	50.00	215.32	231.42	102.09	-4.2	50.00	209.75	236.38	102.09	-4.2	50.00	209.75	236.38	102.04	-4.1	50.00	205.96	239.80	101.84	-3.8	50.00	191.18	253.49	101.79	-3.8	50.00	187.59	256.91	101.79	-3.8	50.00	187.59	256.91	101.74	-3.7	50.00	183.97	260.40	101.74	-3.7	50.00	183.97	260.40	101.69	-3.6	50.00	180.39	263.89	101.69	-3.6	50.00	180.39	263.89	101.64	-3.5	50.00	176.97	267.28	101.55	-3.4	50.00	170.27	274.05	101.50	-3.3	50.00	166.99	277.44	101.50	-3.3	50.00	166.99	277.44	101.44	-3.3	50.00	163.37	281.22	101.28	-3.1	50.00	152.87	292.59	101.22	-3.0	50.00	149.49	296.37	101.22	-3.0	50.00	149.49	296.37	101.17	-2.9	50.00	146.33	299.98	101.12	-2.9	50.00	143.21	303.59	101.07	-2.8	50.00	140.16	307.20	101.07	-2.8	50.00	140.16	307.20	101.01	-2.7	50.00	137.16	310.81	101.01	-2.7	50.00	137.16	310.81	100.96	-2.7	50.00	134.21	314.42	100.96	-2.7	50.00	134.21	314.42	100.91	-2.6	50.00	131.32	318.03	100.80	-2.5	50.00	125.70	325.24	100.75	-2.5	50.00	122.98	328.85	100.75	-2.5	50.00	122.98	328.85	100.70	-2.4	50.00	120.31	332.46	100.33	-2.1	50.00	103.11	357.72	100.28	-2.0	50.00	100.87	361.33	100.28	-2.0	50.00	100.87	361.33	100.24	-2.0	50.00	98.89	364.58	100.14	-1.9	50.00	95.06	371.07	100.09	-1.9	50.00	93.21	374.32	100.09	-1.9	50.00	93.21	374.32	100.05	-1.8	50.00	91.39	377.57	100.05	-1.8	50.00	91.39	377.57	100.00	-1.8	50.00	89.51	381.01	99.10	-1.3	50.00	62.52	442.96	99.05	-1.2	50.00	61.35	446.41
102.96	-5.6	5.00	28.10	104.96																																																																																																																																																																																																																																																																																																																																																																					
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102.71	-5.2	5.00	25.97	111.37																																																																																																																																																																																																																																																																																																																																																																					
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102.64	-5.1	5.00	25.44	112.97																																																																																																																																																																																																																																																																																																																																																																					
102.64	-5.1	5.00	25.44	112.97																																																																																																																																																																																																																																																																																																																																																																					
102.61	-5.0	5.00	25.16	113.83																																																																																																																																																																																																																																																																																																																																																																					
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102.57	-5.0	5.00	24.78	115.00																																																																																																																																																																																																																																																																																																																																																																					
102.52	-4.9	5.00	24.41	116.18																																																																																																																																																																																																																																																																																																																																																																					
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102.48	-4.8	42.36	203.72	209.80																																																																																																																																																																																																																																																																																																																																																																					
102.43	-4.7	44.93	212.83	212.82																																																																																																																																																																																																																																																																																																																																																																					
102.39	-4.7	44.93	209.62	215.85																																																																																																																																																																																																																																																																																																																																																																					
102.39	-4.7	46.26	215.85	215.85																																																																																																																																																																																																																																																																																																																																																																					
102.34	-4.6	46.26	212.48	218.96																																																																																																																																																																																																																																																																																																																																																																					
102.21	-4.4	50.00	218.86	228.30																																																																																																																																																																																																																																																																																																																																																																					
102.16	-4.3	50.00	215.32	231.42																																																																																																																																																																																																																																																																																																																																																																					
102.16	-4.3	50.00	215.32	231.42																																																																																																																																																																																																																																																																																																																																																																					
102.09	-4.2	50.00	209.75	236.38																																																																																																																																																																																																																																																																																																																																																																					
102.09	-4.2	50.00	209.75	236.38																																																																																																																																																																																																																																																																																																																																																																					
102.04	-4.1	50.00	205.96	239.80																																																																																																																																																																																																																																																																																																																																																																					
101.84	-3.8	50.00	191.18	253.49																																																																																																																																																																																																																																																																																																																																																																					
101.79	-3.8	50.00	187.59	256.91																																																																																																																																																																																																																																																																																																																																																																					
101.79	-3.8	50.00	187.59	256.91																																																																																																																																																																																																																																																																																																																																																																					
101.74	-3.7	50.00	183.97	260.40																																																																																																																																																																																																																																																																																																																																																																					
101.74	-3.7	50.00	183.97	260.40																																																																																																																																																																																																																																																																																																																																																																					
101.69	-3.6	50.00	180.39	263.89																																																																																																																																																																																																																																																																																																																																																																					
101.69	-3.6	50.00	180.39	263.89																																																																																																																																																																																																																																																																																																																																																																					
101.64	-3.5	50.00	176.97	267.28																																																																																																																																																																																																																																																																																																																																																																					
101.55	-3.4	50.00	170.27	274.05																																																																																																																																																																																																																																																																																																																																																																					
101.50	-3.3	50.00	166.99	277.44																																																																																																																																																																																																																																																																																																																																																																					
101.50	-3.3	50.00	166.99	277.44																																																																																																																																																																																																																																																																																																																																																																					
101.44	-3.3	50.00	163.37	281.22																																																																																																																																																																																																																																																																																																																																																																					
101.28	-3.1	50.00	152.87	292.59																																																																																																																																																																																																																																																																																																																																																																					
101.22	-3.0	50.00	149.49	296.37																																																																																																																																																																																																																																																																																																																																																																					
101.22	-3.0	50.00	149.49	296.37																																																																																																																																																																																																																																																																																																																																																																					
101.17	-2.9	50.00	146.33	299.98																																																																																																																																																																																																																																																																																																																																																																					
101.12	-2.9	50.00	143.21	303.59																																																																																																																																																																																																																																																																																																																																																																					
101.07	-2.8	50.00	140.16	307.20																																																																																																																																																																																																																																																																																																																																																																					
101.07	-2.8	50.00	140.16	307.20																																																																																																																																																																																																																																																																																																																																																																					
101.01	-2.7	50.00	137.16	310.81																																																																																																																																																																																																																																																																																																																																																																					
101.01	-2.7	50.00	137.16	310.81																																																																																																																																																																																																																																																																																																																																																																					
100.96	-2.7	50.00	134.21	314.42																																																																																																																																																																																																																																																																																																																																																																					
100.96	-2.7	50.00	134.21	314.42																																																																																																																																																																																																																																																																																																																																																																					
100.91	-2.6	50.00	131.32	318.03																																																																																																																																																																																																																																																																																																																																																																					
100.80	-2.5	50.00	125.70	325.24																																																																																																																																																																																																																																																																																																																																																																					
100.75	-2.5	50.00	122.98	328.85																																																																																																																																																																																																																																																																																																																																																																					
100.75	-2.5	50.00	122.98	328.85																																																																																																																																																																																																																																																																																																																																																																					
100.70	-2.4	50.00	120.31	332.46																																																																																																																																																																																																																																																																																																																																																																					
100.33	-2.1	50.00	103.11	357.72																																																																																																																																																																																																																																																																																																																																																																					
100.28	-2.0	50.00	100.87	361.33																																																																																																																																																																																																																																																																																																																																																																					
100.28	-2.0	50.00	100.87	361.33																																																																																																																																																																																																																																																																																																																																																																					
100.24	-2.0	50.00	98.89	364.58																																																																																																																																																																																																																																																																																																																																																																					
100.14	-1.9	50.00	95.06	371.07																																																																																																																																																																																																																																																																																																																																																																					
100.09	-1.9	50.00	93.21	374.32																																																																																																																																																																																																																																																																																																																																																																					
100.09	-1.9	50.00	93.21	374.32																																																																																																																																																																																																																																																																																																																																																																					
100.05	-1.8	50.00	91.39	377.57																																																																																																																																																																																																																																																																																																																																																																					
100.05	-1.8	50.00	91.39	377.57																																																																																																																																																																																																																																																																																																																																																																					
100.00	-1.8	50.00	89.51	381.01																																																																																																																																																																																																																																																																																																																																																																					
99.10	-1.3	50.00	62.52	442.96																																																																																																																																																																																																																																																																																																																																																																					
99.05	-1.2	50.00	61.35	446.41																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage P2 Schnitt 7L			Seite Anlage P2/8																																																																																																																																																																																																																																																																																																																																																																				
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statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

99.05	-1.2	50.00	61.35	446.41
99.00	-1.2	50.00	60.22	449.85
98.35	-1.0	50.00	47.90	494.59
98.30	-0.9	50.00	47.11	498.03
98.30	-0.9	50.00	47.11	498.03
98.25	-0.9	50.00	46.35	501.47
98.10	-0.9	50.00	44.15	511.80
98.05	-0.9	50.00	43.45	515.24
98.05	-0.9	50.00	43.45	515.24
98.00	-0.9	50.00	42.76	518.68
97.90	-0.8	50.00	41.44	525.57
97.85	-0.8	50.00	40.80	529.01
97.85	-0.8	50.00	40.80	529.01
97.80	-0.8	50.00	40.17	532.47
97.10	-0.6	50.00	32.36	580.97
97.05	-0.6	50.00	31.86	584.43
97.05	-0.6	50.00	31.86	584.43
97.00	-0.6	50.00	31.36	587.90
96.15	-0.5	50.00	23.24	646.78
96.10	-0.5	50.00	22.77	650.25
96.10	-0.5	50.00	22.77	650.25
96.05	-0.4	50.00	22.30	653.71
96.05	-0.4	50.00	22.30	653.71
96.00	-0.4	50.00	21.83	657.18

Verdrehung (Theoretischer Fußpunkt) [°]
 $\phi_{i,[g+q],k} = -0.01072162$
Theoretischer Fußpunkt = 95.999 m

Einbindetiefe $t_g = 9.75$ m
Profillänge = 10.10 m

Nachweis Summe V
Nachweis des mobilisierten Erdwiderstands
Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$
 $G_{v,k} = 191.12$ kN/m
 $G'_{v,k} = 0.00$ kN/m
 $P_{v,k} = 0.00$ kN/m
 $E_{av,k} = 94.70$ kN/m ($E_{ah,k} = 523.17$ kN/m)
 $B_{v,k} = 257.51$
Summe $V_{v,k} = 28.31$ kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit
(Erfahrungswerte nach EA Pfähle)
Verfahren 2: EAU Bild E 4-3 (rechts)
Bohrpfahlwand $D = 0.88$ m
Verhältniswert (min, max) = 0.00
Spitzendruck $q_{c,m} = 7.50$ MN/m²
(gemittelt von 96.88 bis 93.36 m) $\Rightarrow q_{b,k} = 1.60$ MN/m²
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$ kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung
105.75	105.45	0.00	S1: Auffüllungen
105.45	103.68	0.00	S2: Auelehm (über GS)
103.68	102.52	0.00	S2: Auelehm (unter GS)
102.52	96.00	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.00 m = 1.000 m²/m $\Rightarrow R_{s1,d}$
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 358.60 / 1.40 = 256.14$ kN/m
 $R_{d,d} = R_{b,d} + R_{s1,d} = 1121.19$ kN/m

Einwirkungen
 $V_{d,d} = G_{d,d} - G'_{d,k} + E_{av,d} + P_{v,d} = 229.35 - 0.00 + 108.91 + 0.00 = 338.25$ kN/m
 $\Rightarrow \mu = V_{d,d} / R_{d,d} = 338.25 / 1121.19 = 0.30$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt:	Anlage P2	Schnitt 7L	Seite Anlage P2/9
Kapitel:	1	LF 1 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 2 (BS-T)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 12_BS 7_LF2.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 69.90 2.35 103.68 102.71 100.28 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 183.71 0.55 0.85 103.68 103.45 102.99 102.97 102.61 nein 2 161.93 0.85 1.15 103.68 103.33 102.61 102.69 102.16 nein 3 140.14 1.15 1.45 103.68 103.20 102.16 102.39 101.69 nein 4 118.36 1.45 1.75 103.68 103.08 101.69 102.09 101.22 nein 5 96.58 1.75 2.05 103.68 102.96 101.22 101.79 100.75 nein 6 74.79 2.05 2.35 103.68 102.83 100.75 101.50 100.28 nein 7 46.00 0.00 0.55 103.68 103.68 103.68 103.22 102.99 nein 8 29.00 2.50 5.70 103.68 102.64 100.05 97.85 95.03 nein</div> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.50 106.09 104.68 Ständig</div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 2110
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																															
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																															
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <div><table><tr><td>Nr.</td><td>Tiefe</td><td>M,g,k</td><td>M,q,k</td><td>H,g,k</td><td>H,q,k</td><td>V,g,k</td><td>V,q,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>104.35</td><td>0.00</td><td>0.00</td><td>-111.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.c</div> <div>Art des Fußlagers:</div> <div>Profillänge von 10.10 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <div><table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table></div> <div>Ausnutzungsgrad $\mu_e = 564.061 / 814.866 = 0.692$</div> <div>Bettungslager $B_{h,d} = 564.061$ kN/m</div> <div>Erddwiderstand $E_{ph,d} = 814.866$ kN/m</div> <div>Anker und Steifen</div> <div>$N_{,d}' =$ Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N,d</td><td>N(g+q+w),k</td><td>N(g+w),k</td><td>Nw,k</td><td>EA</td><td>EI</td><td>N,d'</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>105.00</td><td>0.00</td><td>1.00</td><td>-224.77</td><td>-194.91</td><td>-194.91</td><td>-100.11</td><td>6.900E+4</td><td>2.100E+7</td><td>-248.51 Steife</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_{,d} [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N,d</td><td>Q,d</td><td>M,d</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-1.00</td><td>105.00</td><td>-10.7</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-11.0</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-11.0</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>105.00</td><td>-11.3</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>105.00</td><td>-11.7</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>105.00</td><td>-12.0</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>105.00</td><td>-12.3</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>105.00</td><td>-12.7</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>105.00</td><td>-13.0</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>105.00</td><td>-13.3</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>105.00</td><td>-13.7</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>105.00</td><td>-14.0</td><td>0.0</td><td>-229.15</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 7\Linkes Ufer\11_BS 7_LF1.vrb</div> <div>eingelesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>105.00</td><td>-0.0093</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c,k</td><td>d(p)/phi</td><td>d(a)/phi</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.45</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.68</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.52</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table></div>			Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	104.35	0.00	0.00	-111.00	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000	Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	105.00	0.00	1.00	-224.77	-194.91	-194.91	-100.11	6.900E+4	2.100E+7	-248.51 Steife	x	y	w _{x,d}	w _{y,d}	N,d	Q,d	M,d	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	105.00	-10.7	0.0	-229.15	0.00	0.00	-0.90	105.00	-11.0	0.0	-229.15	0.00	0.00	-0.90	105.00	-11.0	0.0	-229.15	0.00	0.00	-0.80	105.00	-11.3	0.0	-229.15	0.00	0.00	-0.70	105.00	-11.7	0.0	-229.15	0.00	0.00	-0.60	105.00	-12.0	0.0	-229.15	0.00	0.00	-0.50	105.00	-12.3	0.0	-229.15	0.00	0.00	-0.40	105.00	-12.7	0.0	-229.15	0.00	0.00	-0.30	105.00	-13.0	0.0	-229.15	0.00	0.00	-0.20	105.00	-13.3	0.0	-229.15	0.00	0.00	-0.10	105.00	-13.7	0.0	-229.15	0.00	0.00	0.00	105.00	-14.0	0.0	-229.15	0.00	0.00	[-]	[m]	[m]	1	105.00	-0.0093	Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.45	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.68	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.52	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667	<div>Schnitt: Anlage P2 Schnitt 7L</div> <div>Kapitel: 2 LF 2 (BS-T)</div> <div>Vorgang: Genehmigungsstatik</div>	<div>Seite Anlage P2/11</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2					Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																	
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[-]</td><td></td></tr><tr><td>1</td><td>105.45</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.68</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div><div>Aktive Erddruckkoordinaten ([g+q],k)</div><div>mit Zusatzdrücke</div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.100</td><td>106.090</td><td>40.276</td><td>40.276</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.500</td><td>40.276</td><td>40.276</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>40.276</td><td>40.276</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.050</td><td>40.276</td><td>40.276</td><td>0.50</td><td>4.50</td></tr><tr><td>105.050</td><td>105.000</td><td>40.276</td><td>40.276</td><td>4.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.680</td><td>40.276</td><td>40.276</td><td>5.00</td><td>5.00</td></tr><tr><td>104.680</td><td>104.350</td><td>40.276</td><td>40.276</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>104.047</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>104.047</td><td>103.680</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.680</td><td>103.452</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.452</td><td>103.328</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.328</td><td>103.223</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.223</td><td>103.204</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.204</td><td>103.079</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>103.079</td><td>102.988</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.988</td><td>102.972</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.972</td><td>102.955</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.955</td><td>102.831</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.831</td><td>102.707</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.707</td><td>102.686</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.686</td><td>102.644</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.644</td><td>102.611</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.611</td><td>102.550</td><td>26.851</td><td>26.851</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.520</td><td>148.975</td><td>149.734</td><td>5.00</td><td>5.00</td></tr><tr><td>102.520</td><td>102.389</td><td>107.867</td><td>110.372</td><td>5.00</td><td>5.00</td></tr><tr><td>102.389</td><td>102.163</td><td>110.372</td><td>98.478</td><td>5.00</td><td>5.00</td></tr><tr><td>102.163</td><td>102.091</td><td>98.478</td><td>99.174</td><td>5.00</td><td>5.00</td></tr><tr><td>102.091</td><td>101.844</td><td>99.174</td><td>89.536</td><td>5.00</td><td>5.00</td></tr><tr><td>101.844</td><td>101.794</td><td>89.536</td><td>87.608</td><td>5.00</td><td>5.00</td></tr><tr><td>101.794</td><td>101.693</td><td>87.608</td><td>80.327</td><td>5.00</td><td>5.00</td></tr><tr><td>101.693</td><td>101.497</td><td>80.327</td><td>74.331</td><td>5.00</td><td>5.00</td></tr><tr><td>101.497</td><td>101.223</td><td>74.331</td><td>59.926</td><td>5.00</td><td>5.00</td></tr><tr><td>101.223</td><td>101.066</td><td>59.926</td><td>56.192</td><td>5.00</td><td>5.00</td></tr><tr><td>101.066</td><td>100.753</td><td>56.192</td><td>48.722</td><td>5.00</td><td>5.00</td></tr><tr><td>100.753</td><td>100.282</td><td>48.722</td><td>47.032</td><td>5.00</td><td>5.00</td></tr><tr><td>100.282</td><td>100.094</td><td>47.032</td><td>48.553</td><td>5.00</td><td>5.00</td></tr><tr><td>100.094</td><td>100.047</td><td>48.553</td><td>48.933</td><td>5.00</td><td>5.00</td></tr><tr><td>100.047</td><td>99.748</td><td>48.933</td><td>50.159</td><td>5.00</td><td>5.00</td></tr><tr><td>99.748</td><td>99.050</td><td>50.159</td><td>53.021</td><td>5.00</td><td>5.00</td></tr><tr><td>99.050</td><td>98.054</td><td>53.021</td><td>57.109</td><td>5.00</td><td>5.00</td></tr><tr><td>98.054</td><td>97.854</td><td>57.109</td><td>57.926</td><td>5.00</td><td>5.00</td></tr><tr><td>97.854</td><td>97.052</td><td>57.926</td><td>58.278</td><td>5.00</td><td>5.00</td></tr><tr><td>97.052</td><td>96.099</td><td>58.278</td><td>58.695</td><td>5.00</td><td>5.00</td></tr><tr><td>96.099</td><td>95.999</td><td>58.695</td><td>58.739</td><td>5.00</td><td>5.00</td></tr><tr><td>95.999</td><td>95.031</td><td>58.739</td><td>59.163</td><td>5.00</td><td>5.00</td></tr><tr><td>95.031</td><td>80.000</td><td>59.163</td><td>120.815</td><td>5.00</td><td>5.00</td></tr></table></div>									Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[-]		1	105.45	1.000	1.000	0.000	0.00	40.89	0.179	2	103.68	1.000	1.000	0.000	0.00	40.89	0.179	3	102.52	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	40.276	40.276	0.00	0.00	106.090	105.500	40.276	40.276	0.00	0.00	105.500	105.450	40.276	40.276	0.00	0.50	105.450	105.050	40.276	40.276	0.50	4.50	105.050	105.000	40.276	40.276	4.50	5.00	105.000	104.680	40.276	40.276	5.00	5.00	104.680	104.350	40.276	40.276	5.00	5.00	104.350	104.047	26.851	26.851	5.00	5.00	104.047	103.680	26.851	26.851	5.00	5.00	103.680	103.452	26.851	26.851	5.00	5.00	103.452	103.328	26.851	26.851	5.00	5.00	103.328	103.223	26.851	26.851	5.00	5.00	103.223	103.204	26.851	26.851	5.00	5.00	103.204	103.079	26.851	26.851	5.00	5.00	103.079	102.988	26.851	26.851	5.00	5.00	102.988	102.972	26.851	26.851	5.00	5.00	102.972	102.955	26.851	26.851	5.00	5.00	102.955	102.831	26.851	26.851	5.00	5.00	102.831	102.707	26.851	26.851	5.00	5.00	102.707	102.686	26.851	26.851	5.00	5.00	102.686	102.644	26.851	26.851	5.00	5.00	102.644	102.611	26.851	26.851	5.00	5.00	102.611	102.550	26.851	26.851	5.00	5.00	102.550	102.520	148.975	149.734	5.00	5.00	102.520	102.389	107.867	110.372	5.00	5.00	102.389	102.163	110.372	98.478	5.00	5.00	102.163	102.091	98.478	99.174	5.00	5.00	102.091	101.844	99.174	89.536	5.00	5.00	101.844	101.794	89.536	87.608	5.00	5.00	101.794	101.693	87.608	80.327	5.00	5.00	101.693	101.497	80.327	74.331	5.00	5.00	101.497	101.223	74.331	59.926	5.00	5.00	101.223	101.066	59.926	56.192	5.00	5.00	101.066	100.753	56.192	48.722	5.00	5.00	100.753	100.282	48.722	47.032	5.00	5.00	100.282	100.094	47.032	48.553	5.00	5.00	100.094	100.047	48.553	48.933	5.00	5.00	100.047	99.748	48.933	50.159	5.00	5.00	99.748	99.050	50.159	53.021	5.00	5.00	99.050	98.054	53.021	57.109	5.00	5.00	98.054	97.854	57.109	57.926	5.00	5.00	97.854	97.052	57.926	58.278	5.00	5.00	97.052	96.099	58.278	58.695	5.00	5.00	96.099	95.999	58.695	58.739	5.00	5.00	95.999	95.031	58.739	59.163	5.00	5.00	95.031	80.000	59.163	120.815	5.00	5.00
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																																	
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96.099	95.999	58.695	58.739	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
95.999	95.031	58.739	59.163	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
95.031	80.000	59.163	120.815	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage P2 Schnitt 7L					Seite Anlage P2/12																																																																																																																																																																																																																																																																																																																																																	
Kapitel:		2 LF 2 (BS-T)					Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																	
Vorgang:		Genehmigungsstatik					Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.10 102.55</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 3 102.52 3.034 3.911 22.500 -15.01 23.23 4 80.00 6.006 6.054 32.500 -21.68 16.35</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 von bis oben unten [mNHN] [mNHN] [kN/m²] [kN/m²] 102.61 102.55 0.00 0.00 102.55 102.52 -7.22 -7.70 102.52 102.39 -0.94 -6.52 102.39 102.16 -6.52 -16.10 102.16 102.09 -16.10 -19.16 102.09 101.84 -19.16 -29.69 101.84 101.79 -29.69 -31.79 101.79 101.69 -31.79 -36.09 101.69 101.50 -36.09 -44.43 101.50 101.22 -44.43 -56.08 101.22 101.07 -56.08 -62.74 101.07 100.75 -62.74 -76.06 100.75 100.28 -76.06 -96.05 100.28 100.09 -96.05 -104.05 100.09 100.05 -104.05 -106.04 100.05 99.75 -106.04 -118.75 99.75 99.05 -118.75 -148.41 99.05 98.05 -148.41 -190.77 98.05 97.85 -190.77 -199.24 97.85 97.05 -199.24 -233.35 97.05 96.10 -233.35 -273.85 96.10 96.00 -273.85 -278.11 96.00 95.03 -278.11 -319.24 95.03 80.00 -319.24 -958.09</div> <div>Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.10 0.0 0.0 0.0 106.09 -0.2 -0.5 0.0 105.50 -13.1 -27.8 -8.3 105.45 -14.1 -30.1 -9.8 105.05 -22.8 -49.8 -25.7 105.00 -23.9 -52.4 -28.3 -229.2 105.00 -23.9 176.7 -28.3 104.68 -30.9 160.0 25.6 104.35 -38.1 142.7 75.5 104.35 -38.1 9.5 75.5 104.05 -44.7 -1.7 76.7 103.68 -52.7 -15.2 73.6 103.45 -59.5 -23.6 69.2 103.33 -63.2 -28.2 66.0 103.22 -66.4 -32.1 62.8 103.20 -67.0 -32.8 62.2 103.08 -70.7 -37.4 57.8 102.99 -73.4 -40.7 54.3 102.97 -73.9 -41.3 53.6 102.96 -74.4 -41.9 52.9 102.83 -78.2 -46.5 47.4 102.71 -81.9 -51.1 41.3 102.69 -82.5 -51.9 40.3 102.64 -83.8 -53.4 38.1 102.61 -84.8 -54.6 36.3</div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2113
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.55 -86.6 -56.9 32.9</div><div>102.52 -88.5 -62.2 31.1</div><div>102.39 -91.1 -78.8 21.8</div><div>102.16 -94.3 -102.9 1.2</div><div>102.09 -95.0 -109.3 -6.4</div><div>101.84 -96.1 -126.8 -35.8</div><div>101.79 -96.0 -129.4 -42.1</div><div>101.69 -95.8 -133.6 -55.5</div><div>101.50 -94.4 -137.9 -82.2</div><div>101.22 -90.4 -135.6 -119.9</div><div>101.07 -87.0 -130.0 -140.7</div><div>100.75 -78.0 -110.9 -178.7</div><div>100.28 -58.7 -65.2 -220.8</div><div>100.09 -49.1 -42.0 -231.0</div><div>100.05 -46.5 -35.8 -232.8</div><div>99.75 -30.4 2.3 -237.6</div><div>99.05 -3.2 63.7 -212.5</div><div>98.05 14.7 94.4 -128.6</div><div>97.85 15.7 93.6 -109.9</div><div>97.05 12.7 71.4 -41.7</div><div>96.10 -3.6 8.8 -0.4</div><div>96.00 -5.2 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div></div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div><div></div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div><div></div></div><div><div>106.09</div><div>-0.2</div><div>-0.4</div><div>0.0</div><div></div><div></div></div><div><div>105.50</div><div>-11.4</div><div>-24.2</div><div>-7.2</div><div></div><div></div></div><div><div>105.45</div><div>-12.3</div><div>-26.2</div><div>-8.5</div><div></div><div></div></div><div><div>105.05</div><div>-19.9</div><div>-43.3</div><div>-22.4</div><div></div><div></div></div><div><div>105.00</div><div>-20.8</div><div>-45.6</div><div>-24.6</div><div>-194.9</div><div></div></div><div><div>105.00</div><div>-20.8</div><div>149.4</div><div>-24.6</div><div></div><div></div></div><div><div>104.68</div><div>-26.9</div><div>134.9</div><div>20.9</div><div></div><div></div></div><div><div>104.35</div><div>-33.1</div><div>119.9</div><div>62.9</div><div></div><div></div></div><div><div>104.35</div><div>-33.1</div><div>8.9</div><div>62.9</div><div></div><div></div></div><div><div>104.05</div><div>-38.8</div><div>-0.7</div><div>64.2</div><div></div><div></div></div><div><div>103.68</div><div>-45.8</div><div>-12.4</div><div>61.8</div><div></div><div></div></div><div><div>103.45</div><div>-51.7</div><div>-19.7</div><div>58.1</div><div></div><div></div></div><div><div>103.33</div><div>-55.0</div><div>-23.6</div><div>55.4</div><div></div><div></div></div><div><div>103.22</div><div>-57.7</div><div>-27.0</div><div>52.8</div><div></div><div></div></div><div><div>103.20</div><div>-58.2</div><div>-27.6</div><div>52.2</div><div></div><div></div></div><div><div>103.08</div><div>-61.5</div><div>-31.5</div><div>48.6</div><div></div><div></div></div><div><div>102.99</div><div>-63.9</div><div>-34.4</div><div>45.6</div><div></div><div></div></div><div><div>102.97</div><div>-64.3</div><div>-35.0</div><div>45.0</div><div></div><div></div></div><div><div>102.96</div><div>-64.7</div><div>-35.5</div><div>44.4</div><div></div><div></div></div><div><div>102.83</div><div>-68.0</div><div>-39.5</div><div>39.7</div><div></div><div></div></div><div><div>102.71</div><div>-71.2</div><div>-43.4</div><div>34.6</div><div></div><div></div></div><div><div>102.69</div><div>-71.8</div><div>-44.1</div><div>33.7</div><div></div><div></div></div><div><div>102.64</div><div>-72.8</div><div>-45.4</div><div>31.8</div><div></div><div></div></div><div><div>102.61</div><div>-73.7</div><div>-46.5</div><div>30.3</div><div></div><div></div></div><div><div>102.55</div><div>-75.3</div><div>-48.4</div><div>27.4</div><div></div><div></div></div><div><div>102.52</div><div>-77.0</div><div>-53.0</div><div>25.9</div><div></div><div></div></div><div><div>102.39</div><div>-79.3</div><div>-67.4</div><div>18.0</div><div></div><div></div></div><div><div>102.16</div><div>-82.0</div><div>-88.3</div><div>0.3</div><div></div><div></div></div><div><div>102.09</div><div>-82.7</div><div>-93.9</div><div>-6.2</div><div></div><div></div></div><div><div>101.84</div><div>-83.6</div><div>-109.2</div><div>-31.5</div><div></div><div></div></div><div><div>101.79</div><div>-83.6</div><div>-111.4</div><div>-37.0</div><div></div><div></div></div><div><div>101.69</div><div>-83.4</div><div>-115.1</div><div>-48.5</div><div></div><div></div></div><div><div>101.50</div><div>-82.2</div><div>-118.8</div><div>-71.5</div><div></div><div></div></div><div><div>101.22</div><div>-78.8</div><div>-116.9</div><div>-104.0</div><div></div><div></div></div><div><div>101.07</div><div>-75.9</div><div>-112.1</div><div>-121.9</div><div></div><div></div></div><div><div>100.75</div><div>-68.1</div><div>-95.6</div><div>-154.7</div><div></div><div></div></div><div><div>100.28</div><div>-51.4</div><div>-56.2</div><div>-191.0</div><div></div><div></div></div><div><div>100.09</div><div>-43.1</div><div>-36.1</div><div>-199.8</div><div></div><div></div></div><div><div>100.05</div><div>-40.8</div><div>-30.8</div><div>-201.3</div><div></div><div></div></div><div><div>99.75</div><div>-26.9</div><div>2.1</div><div>-205.5</div><div></div><div></div></div><div><div>99.05</div><div>-3.4</div><div>55.1</div><div>-183.7</div><div></div><div></div></div><div><div>98.05</div><div>12.1</div><div>81.6</div><div>-111.2</div><div></div><div></div></div><div><div>97.85</div><div>13.0</div><div>80.9</div><div>-94.9</div><div></div><div></div></div><div><div>97.05</div><div>10.3</div><div>61.7</div><div>-36.0</div><div></div><div></div></div></div></div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																					
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																					
<div><div><div><div>96.10-4.07.6-0.4</div><div>96.00-5.40.00.0</div></div><div><div>Schnittgrößen (g+w,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>-0.4</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-11.4</td><td>-24.2</td><td>-7.2</td><td></td></tr><tr><td>105.45</td><td>-12.3</td><td>-26.2</td><td>-8.5</td><td></td></tr><tr><td>105.05</td><td>-19.9</td><td>-43.3</td><td>-22.4</td><td></td></tr><tr><td>105.00</td><td>-20.8</td><td>-45.6</td><td>-24.6</td><td>-194.9</td></tr><tr><td>105.00</td><td>-20.8</td><td>149.4</td><td>-24.6</td><td></td></tr><tr><td>104.68</td><td>-26.9</td><td>134.9</td><td>20.9</td><td></td></tr><tr><td>104.35</td><td>-33.1</td><td>119.9</td><td>62.9</td><td></td></tr><tr><td>104.35</td><td>-33.1</td><td>8.9</td><td>62.9</td><td></td></tr><tr><td>104.05</td><td>-38.8</td><td>-0.7</td><td>64.2</td><td></td></tr><tr><td>103.68</td><td>-45.8</td><td>-12.4</td><td>61.8</td><td></td></tr><tr><td>103.45</td><td>-51.7</td><td>-19.7</td><td>58.1</td><td></td></tr><tr><td>103.33</td><td>-55.0</td><td>-23.6</td><td>55.4</td><td></td></tr><tr><td>103.22</td><td>-57.7</td><td>-27.0</td><td>52.8</td><td></td></tr><tr><td>103.20</td><td>-58.2</td><td>-27.6</td><td>52.2</td><td></td></tr><tr><td>103.08</td><td>-61.5</td><td>-31.5</td><td>48.6</td><td></td></tr><tr><td>102.99</td><td>-63.9</td><td>-34.4</td><td>45.6</td><td></td></tr><tr><td>102.97</td><td>-64.3</td><td>-35.0</td><td>45.0</td><td></td></tr><tr><td>102.96</td><td>-64.7</td><td>-35.5</td><td>44.4</td><td></td></tr><tr><td>102.83</td><td>-68.0</td><td>-39.5</td><td>39.7</td><td></td></tr><tr><td>102.71</td><td>-71.2</td><td>-43.4</td><td>34.6</td><td></td></tr><tr><td>102.69</td><td>-71.8</td><td>-44.1</td><td>33.7</td><td></td></tr><tr><td>102.64</td><td>-72.8</td><td>-45.4</td><td>31.8</td><td></td></tr><tr><td>102.61</td><td>-73.7</td><td>-46.5</td><td>30.3</td><td></td></tr><tr><td>102.55</td><td>-75.3</td><td>-48.4</td><td>27.4</td><td></td></tr><tr><td>102.52</td><td>-77.0</td><td>-53.0</td><td>25.9</td><td></td></tr><tr><td>102.39</td><td>-79.3</td><td>-67.4</td><td>18.0</td><td></td></tr><tr><td>102.16</td><td>-82.0</td><td>-88.3</td><td>0.3</td><td></td></tr><tr><td>102.09</td><td>-82.7</td><td>-93.9</td><td>-6.2</td><td></td></tr><tr><td>101.84</td><td>-83.6</td><td>-109.2</td><td>-31.5</td><td></td></tr><tr><td>101.79</td><td>-83.6</td><td>-111.4</td><td>-37.0</td><td></td></tr><tr><td>101.69</td><td>-83.4</td><td>-115.1</td><td>-48.5</td><td></td></tr><tr><td>101.50</td><td>-82.2</td><td>-118.8</td><td>-71.5</td><td></td></tr><tr><td>101.22</td><td>-78.8</td><td>-116.9</td><td>-104.0</td><td></td></tr><tr><td>101.07</td><td>-75.9</td><td>-112.1</td><td>-121.9</td><td></td></tr><tr><td>100.75</td><td>-68.1</td><td>-95.6</td><td>-154.7</td><td></td></tr><tr><td>100.28</td><td>-51.4</td><td>-56.2</td><td>-191.0</td><td></td></tr><tr><td>100.09</td><td>-43.1</td><td>-36.1</td><td>-199.8</td><td></td></tr><tr><td>100.05</td><td>-40.8</td><td>-30.8</td><td>-201.3</td><td></td></tr><tr><td>99.75</td><td>-26.9</td><td>2.1</td><td>-205.5</td><td></td></tr><tr><td>99.05</td><td>-3.4</td><td>55.1</td><td>-183.7</td><td></td></tr><tr><td>98.05</td><td>12.1</td><td>81.6</td><td>-111.2</td><td></td></tr><tr><td>97.85</td><td>13.0</td><td>80.9</td><td>-94.9</td><td></td></tr><tr><td>97.05</td><td>10.3</td><td>61.7</td><td>-36.0</td><td></td></tr><tr><td>96.10</td><td>-4.0</td><td>7.6</td><td>-0.4</td><td></td></tr><tr><td>96.00</td><td>-5.4</td><td>0.0</td><td>0.0</td><td></td></tr></table></div><div><div><div>Schnittgrößen (q,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-87.6</td></tr><tr><td>104.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table></div></div></div></div>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	-0.2	-0.4	0.0		105.50	-11.4	-24.2	-7.2		105.45	-12.3	-26.2	-8.5		105.05	-19.9	-43.3	-22.4		105.00	-20.8	-45.6	-24.6	-194.9	105.00	-20.8	149.4	-24.6		104.68	-26.9	134.9	20.9		104.35	-33.1	119.9	62.9		104.35	-33.1	8.9	62.9		104.05	-38.8	-0.7	64.2		103.68	-45.8	-12.4	61.8		103.45	-51.7	-19.7	58.1		103.33	-55.0	-23.6	55.4		103.22	-57.7	-27.0	52.8		103.20	-58.2	-27.6	52.2		103.08	-61.5	-31.5	48.6		102.99	-63.9	-34.4	45.6		102.97	-64.3	-35.0	45.0		102.96	-64.7	-35.5	44.4		102.83	-68.0	-39.5	39.7		102.71	-71.2	-43.4	34.6		102.69	-71.8	-44.1	33.7		102.64	-72.8	-45.4	31.8		102.61	-73.7	-46.5	30.3		102.55	-75.3	-48.4	27.4		102.52	-77.0	-53.0	25.9		102.39	-79.3	-67.4	18.0		102.16	-82.0	-88.3	0.3		102.09	-82.7	-93.9	-6.2		101.84	-83.6	-109.2	-31.5		101.79	-83.6	-111.4	-37.0		101.69	-83.4	-115.1	-48.5		101.50	-82.2	-118.8	-71.5		101.22	-78.8	-116.9	-104.0		101.07	-75.9	-112.1	-121.9		100.75	-68.1	-95.6	-154.7		100.28	-51.4	-56.2	-191.0		100.09	-43.1	-36.1	-199.8		100.05	-40.8	-30.8	-201.3		99.75	-26.9	2.1	-205.5		99.05	-3.4	55.1	-183.7		98.05	12.1	81.6	-111.2		97.85	13.0	80.9	-94.9		97.05	10.3	61.7	-36.0		96.10	-4.0	7.6	-0.4		96.00	-5.4	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.45	0.0	0.0	0.0		105.05	0.0	0.0	0.0		105.00	0.0	0.0	0.0	-87.6	104.68	0.0	0.0	0.0		104.35	0.0	0.0	0.0		104.05	0.0	0.0	0.0		103.68	0.0	0.0	0.0		103.45	0.0	0.0	0.0		103.33	0.0	0.0	0.0		103.22	0.0	0.0	0.0		103.20	0.0	0.0	0.0	
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.99</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.73</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr></table>						103.08	0.0	0.0	0.0	102.99	0.0	0.0	0.0	102.97	0.0	0.0	0.0	102.96	0.0	0.0	0.0	102.83	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.64	0.0	0.0	0.0	102.61	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.39	0.0	0.0	0.0	102.16	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.84	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.69	0.0	0.0	0.0	101.50	0.0	0.0	0.0	101.22	0.0	0.0	0.0	101.07	0.0	0.0	0.0	100.75	0.0	0.0	0.0	100.28	0.0	0.0	0.0	100.09	0.0	0.0	0.0	100.05	0.0	0.0	0.0	99.75	0.0	0.0	0.0	99.05	0.0	0.0	0.0	98.05	0.0	0.0	0.0	97.85	0.0	0.0	0.0	97.05	0.0	0.0	0.0	96.10	0.0	0.0	0.0	96.00	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-13.9	-	-	-	106.09	-13.9	-	-	-	106.09	-13.9	-	-	-	106.04	-13.8	-	-	-	105.55	-13.0	-	-	-	105.50	-12.9	-	-	-	105.50	-12.9	-	-	-	105.45	-12.9	-	-	-	105.45	-12.9	-	-	-	105.40	-12.8	-	-	-	105.10	-12.3	-	-	-	105.05	-12.2	-	-	-	105.05	-12.2	-	-	-	105.00	-12.1	-	-	-	105.00	-12.1	-	-	-	104.95	-12.0	-	-	-	104.73	-11.7	-	-	-	104.68	-11.6	-	-	-	104.68	-11.6	-	-	-	104.64	-11.5	-	-	-	104.40	-11.1	-	-	-	104.35	-11.0	-	-	-	104.35	-11.0	-	-	-	104.30	-11.0	-	-	-	104.10	-10.6	-	-	-	104.05	-10.5	-	-	-	104.05	-10.5	-	-	-	103.99	-10.4	-	-	-	103.73	-10.0	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.50	-9.6	-	-	-	103.45	-9.5	-	-	-	103.45	-9.5	-	-	-
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102.48	-7.7	0.20	1.52	4.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.43	-7.6	0.99	7.58	7.58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.6	0.99	7.50	10.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.6	1.40	10.60	10.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.34	-7.5	1.40	10.48	13.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.21	-7.2	3.19	23.06	23.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-7.1	3.19	22.79	26.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-7.1	3.66	26.17	26.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-7.0	3.66	25.68	31.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-7.0	4.44	31.13	31.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.04	-6.9	4.44	30.72	34.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.89	-6.6	6.75	44.82	44.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-6.6	6.75	44.20	48.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-6.6	7.36	48.24	48.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.79	-6.5	7.36	47.57	51.66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.74	-6.4	8.00	50.92	55.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-6.4	8.66	55.16	55.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.69	-6.3	8.66	54.35	58.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.64	-6.2	9.35	57.81	62.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.50	-5.9	11.46	67.79	72.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.44	-5.8	12.20	70.98	75.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.28	-5.5	15.81	87.34	87.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-5.4	15.81	85.80	91.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-5.4	16.80	91.13	91.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.17	-5.3	16.80	89.58	94.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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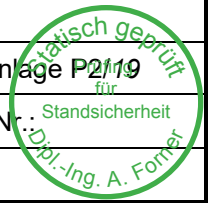


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																												
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																												
<table><tr><td>101.12</td><td>-5.2</td><td>18.76</td><td>98.35</td><td>98.34</td></tr><tr><td>101.07</td><td>-5.2</td><td>18.76</td><td>96.63</td><td>101.95</td></tr><tr><td>101.07</td><td>-5.2</td><td>19.80</td><td>101.96</td><td>101.95</td></tr><tr><td>101.01</td><td>-5.1</td><td>19.80</td><td>100.16</td><td>105.56</td></tr><tr><td>100.80</td><td>-4.7</td><td>25.52</td><td>120.00</td><td>120.00</td></tr><tr><td>100.75</td><td>-4.6</td><td>25.52</td><td>117.77</td><td>123.61</td></tr><tr><td>100.75</td><td>-4.6</td><td>26.78</td><td>123.61</td><td>123.61</td></tr><tr><td>100.70</td><td>-4.5</td><td>26.78</td><td>121.29</td><td>127.21</td></tr><tr><td>100.33</td><td>-3.9</td><td>38.67</td><td>152.48</td><td>152.47</td></tr><tr><td>100.28</td><td>-3.9</td><td>38.67</td><td>149.38</td><td>156.08</td></tr><tr><td>100.28</td><td>-3.9</td><td>40.41</td><td>156.09</td><td>156.08</td></tr><tr><td>100.24</td><td>-3.8</td><td>40.41</td><td>153.20</td><td>159.33</td></tr><tr><td>100.14</td><td>-3.7</td><td>45.43</td><td>165.83</td><td>165.83</td></tr><tr><td>100.09</td><td>-3.6</td><td>45.43</td><td>162.68</td><td>169.08</td></tr><tr><td>100.09</td><td>-3.6</td><td>47.21</td><td>169.08</td><td>169.08</td></tr><tr><td>100.05</td><td>-3.5</td><td>47.21</td><td>165.84</td><td>172.32</td></tr><tr><td>100.05</td><td>-3.5</td><td>49.06</td><td>172.33</td><td>172.32</td></tr><tr><td>100.00</td><td>-3.4</td><td>49.06</td><td>168.81</td><td>175.76</td></tr><tr><td>99.80</td><td>-3.2</td><td>50.00</td><td>158.10</td><td>189.53</td></tr><tr><td>99.75</td><td>-3.1</td><td>50.00</td><td>154.73</td><td>192.97</td></tr><tr><td>99.75</td><td>-3.1</td><td>50.00</td><td>154.73</td><td>192.97</td></tr><tr><td>99.70</td><td>-3.0</td><td>50.00</td><td>151.40</td><td>196.42</td></tr><tr><td>99.10</td><td>-2.3</td><td>50.00</td><td>114.73</td><td>237.72</td></tr><tr><td>99.05</td><td>-2.2</td><td>50.00</td><td>111.94</td><td>241.16</td></tr><tr><td>99.05</td><td>-2.2</td><td>50.00</td><td>111.94</td><td>241.16</td></tr><tr><td>99.00</td><td>-2.2</td><td>50.00</td><td>109.18</td><td>244.60</td></tr><tr><td>98.10</td><td>-1.3</td><td>50.00</td><td>65.51</td><td>306.55</td></tr><tr><td>98.05</td><td>-1.3</td><td>50.00</td><td>63.36</td><td>310.00</td></tr><tr><td>98.05</td><td>-1.3</td><td>50.00</td><td>63.36</td><td>310.00</td></tr><tr><td>98.00</td><td>-1.2</td><td>50.00</td><td>61.23</td><td>313.44</td></tr><tr><td>97.90</td><td>-1.1</td><td>50.00</td><td>57.04</td><td>320.32</td></tr><tr><td>97.85</td><td>-1.1</td><td>50.00</td><td>54.98</td><td>323.76</td></tr><tr><td>97.85</td><td>-1.1</td><td>50.00</td><td>54.98</td><td>323.76</td></tr><tr><td>97.80</td><td>-1.1</td><td>50.00</td><td>52.92</td><td>327.23</td></tr><tr><td>97.10</td><td>-0.5</td><td>50.00</td><td>25.80</td><td>375.72</td></tr><tr><td>97.05</td><td>-0.5</td><td>50.00</td><td>23.95</td><td>379.19</td></tr><tr><td>97.05</td><td>-0.5</td><td>50.00</td><td>23.95</td><td>379.19</td></tr><tr><td>97.00</td><td>-0.4</td><td>50.00</td><td>22.11</td><td>382.65</td></tr><tr><td>96.15</td><td>0.2</td><td>50.00</td><td>-8.57</td><td>441.54</td></tr><tr><td>96.10</td><td>0.2</td><td>50.00</td><td>-10.35</td><td>445.00</td></tr><tr><td>96.10</td><td>0.2</td><td>50.00</td><td>-10.35</td><td>445.00</td></tr><tr><td>96.05</td><td>0.2</td><td>50.00</td><td>-12.14</td><td>448.47</td></tr><tr><td>96.05</td><td>0.2</td><td>50.00</td><td>-12.14</td><td>448.47</td></tr><tr><td>96.00</td><td>0.3</td><td>50.00</td><td>-13.93</td><td>451.93</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04088867 Theoretischer Fußpunkt = 95.999 m</p> <p>Einbindetiefe tg = 6.55 m Profillänge = 10.10 m</p>			101.12	-5.2	18.76	98.35	98.34	101.07	-5.2	18.76	96.63	101.95	101.07	-5.2	19.80	101.96	101.95	101.01	-5.1	19.80	100.16	105.56	100.80	-4.7	25.52	120.00	120.00	100.75	-4.6	25.52	117.77	123.61	100.75	-4.6	26.78	123.61	123.61	100.70	-4.5	26.78	121.29	127.21	100.33	-3.9	38.67	152.48	152.47	100.28	-3.9	38.67	149.38	156.08	100.28	-3.9	40.41	156.09	156.08	100.24	-3.8	40.41	153.20	159.33	100.14	-3.7	45.43	165.83	165.83	100.09	-3.6	45.43	162.68	169.08	100.09	-3.6	47.21	169.08	169.08	100.05	-3.5	47.21	165.84	172.32	100.05	-3.5	49.06	172.33	172.32	100.00	-3.4	49.06	168.81	175.76	99.80	-3.2	50.00	158.10	189.53	99.75	-3.1	50.00	154.73	192.97	99.75	-3.1	50.00	154.73	192.97	99.70	-3.0	50.00	151.40	196.42	99.10	-2.3	50.00	114.73	237.72	99.05	-2.2	50.00	111.94	241.16	99.05	-2.2	50.00	111.94	241.16	99.00	-2.2	50.00	109.18	244.60	98.10	-1.3	50.00	65.51	306.55	98.05	-1.3	50.00	63.36	310.00	98.05	-1.3	50.00	63.36	310.00	98.00	-1.2	50.00	61.23	313.44	97.90	-1.1	50.00	57.04	320.32	97.85	-1.1	50.00	54.98	323.76	97.85	-1.1	50.00	54.98	323.76	97.80	-1.1	50.00	52.92	327.23	97.10	-0.5	50.00	25.80	375.72	97.05	-0.5	50.00	23.95	379.19	97.05	-0.5	50.00	23.95	379.19	97.00	-0.4	50.00	22.11	382.65	96.15	0.2	50.00	-8.57	441.54	96.10	0.2	50.00	-10.35	445.00	96.10	0.2	50.00	-10.35	445.00	96.05	0.2	50.00	-12.14	448.47	96.05	0.2	50.00	-12.14	448.47	96.00	0.3	50.00	-13.93	451.93
101.12	-5.2	18.76	98.35	98.34																																																																																																																																																																																																																										
101.07	-5.2	18.76	96.63	101.95																																																																																																																																																																																																																										
101.07	-5.2	19.80	101.96	101.95																																																																																																																																																																																																																										
101.01	-5.1	19.80	100.16	105.56																																																																																																																																																																																																																										
100.80	-4.7	25.52	120.00	120.00																																																																																																																																																																																																																										
100.75	-4.6	25.52	117.77	123.61																																																																																																																																																																																																																										
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100.70	-4.5	26.78	121.29	127.21																																																																																																																																																																																																																										
100.33	-3.9	38.67	152.48	152.47																																																																																																																																																																																																																										
100.28	-3.9	38.67	149.38	156.08																																																																																																																																																																																																																										
100.28	-3.9	40.41	156.09	156.08																																																																																																																																																																																																																										
100.24	-3.8	40.41	153.20	159.33																																																																																																																																																																																																																										
100.14	-3.7	45.43	165.83	165.83																																																																																																																																																																																																																										
100.09	-3.6	45.43	162.68	169.08																																																																																																																																																																																																																										
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100.00	-3.4	49.06	168.81	175.76																																																																																																																																																																																																																										
99.80	-3.2	50.00	158.10	189.53																																																																																																																																																																																																																										
99.75	-3.1	50.00	154.73	192.97																																																																																																																																																																																																																										
99.75	-3.1	50.00	154.73	192.97																																																																																																																																																																																																																										
99.70	-3.0	50.00	151.40	196.42																																																																																																																																																																																																																										
99.10	-2.3	50.00	114.73	237.72																																																																																																																																																																																																																										
99.05	-2.2	50.00	111.94	241.16																																																																																																																																																																																																																										
99.05	-2.2	50.00	111.94	241.16																																																																																																																																																																																																																										
99.00	-2.2	50.00	109.18	244.60																																																																																																																																																																																																																										
98.10	-1.3	50.00	65.51	306.55																																																																																																																																																																																																																										
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98.05	-1.3	50.00	63.36	310.00																																																																																																																																																																																																																										
98.00	-1.2	50.00	61.23	313.44																																																																																																																																																																																																																										
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97.85	-1.1	50.00	54.98	323.76																																																																																																																																																																																																																										
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97.05	-0.5	50.00	23.95	379.19																																																																																																																																																																																																																										
97.00	-0.4	50.00	22.11	382.65																																																																																																																																																																																																																										
96.15	0.2	50.00	-8.57	441.54																																																																																																																																																																																																																										
96.10	0.2	50.00	-10.35	445.00																																																																																																																																																																																																																										
96.10	0.2	50.00	-10.35	445.00																																																																																																																																																																																																																										
96.05	0.2	50.00	-12.14	448.47																																																																																																																																																																																																																										
96.05	0.2	50.00	-12.14	448.47																																																																																																																																																																																																																										
96.00	0.3	50.00	-13.93	451.93																																																																																																																																																																																																																										
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/18																																																																																																																																																																																																																												
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2118																																																																																																																																																																																																																												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																												



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: $P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}$</div> <div>$G_k = 191.12 \text{ kN/m}$</div> <div>$G'_k = 0.00 \text{ kN/m}$</div> <div>$P_{v,k} = 0.00 \text{ kN/m}$</div> <div>$E_{av,k} = 94.70 \text{ kN/m}$ ($E_{ah,k} = 523.17 \text{ kN/m}$)</div> <div>$B_{v,k} = 193.94$</div> <div>Summe $V_k = 91.88 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand $D = 0.88 \text{ m}$</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div> <div>(gemittelt von 96.88 bis 93.36 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div> <div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.52</td><td>96.00</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 96.00 m = 1.000 m²/m $\implies R_{s1,d}$</div> <div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 358.60 / 1.40 = 256.14 \text{ kN/m}$</div> <div>$R_d = R_{b,d} + R_{s1,d} = 1121.19 \text{ kN/m}$</div> <div>Einwirkungen</div> <div>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 229.35 - 0.00 + 108.91 + 0.00 = 338.25 \text{ kN/m}$</div> <div>$\implies \mu = V_d / R_d = 338.25 / 1121.19 = 0.30$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.52	0.00	S2: Auelehm (unter GS)	102.52	96.00	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm (unter GS)											
102.52	96.00	55.00	s3: Flussskies, -sand											
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/19												
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 2119												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forster



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

3 LF 3 (BS-T)

GGU-RETAIN / Version 12.00 / 01.02.2024
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)
EMG TBA 3.2 - Schnitt 7
Datei: 13_BS 7_LF3.vrb
Datum: 20.06.2024

Indices:
d = Bemessungswert
k = charakteristisch
g = Ständig, einschließlich Wasserdruck
q = Veränderlich
g+q = Ständig + Veränderlich, einschließlich Wasserdruck
w = Wasserdruck

Wandkopf = 106.10 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m
Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 102.55 mNHN
Bohrpfahldurchmesser = 0.88 m
Bohrpfahlabstand = 1.50 m
Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN
Grundwasserstand (Luftseite) = 105.50 mNHN
Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten
BS: DIN EN 1997-1: BS-T
 $\gamma(G) = 1.20$
 $\gamma(G, Ruhe) = 1.10$
 $\gamma(Q) = 1.30$
 $\gamma(Ep) = 1.30$
Anpassungsfaktor Erdwiderstand = 0.80

Lasten (einseitig begrenzt)
Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast
[-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-]
1 69.90 2.35 103.68 102.71 100.28 nein

Lasten (zweiseitig begrenzt)
Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast
[-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-]
1 183.71 0.55 0.85 103.68 103.45 102.99 102.97 102.61 nein
2 161.93 0.85 1.15 103.68 103.33 102.61 102.69 102.16 nein
3 140.14 1.15 1.45 103.68 103.20 102.16 102.39 101.69 nein
4 118.36 1.45 1.75 103.68 103.08 101.69 102.09 101.22 nein
5 96.58 1.75 2.05 103.68 102.96 101.22 101.79 100.75 nein
6 74.79 2.05 2.35 103.68 102.83 100.75 101.50 100.28 nein
7 46.00 0.00 0.55 103.68 103.68 103.68 103.22 102.99 nein
8 29.00 2.50 5.70 103.68 102.64 100.05 97.85 95.03 nein

Steuerparameter = 0.50

Zusatzdrücke
Nr. e(oben) e(unten) z(oben) z(unten) Typ
[-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-]
1 0.00 13.50 106.09 104.68 Ständig
2 0.00 29.50 105.50 102.55 Wasserdruck

Schnitt:	Anlage P2 Schnitt 7L	Seite Anlage P2/20
Kapitel:	3 LF 3 (BS-T)	Archiv Nr. 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																					
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																					
<div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <table><tr><td>Nr.</td><td>Tiefe</td><td>M,g,k</td><td>M,q,k</td><td>H,g,k</td><td>H,q,k</td><td>V,g,k</td><td>V,q,k</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[kN·m/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>105.50</td><td>-12.50</td><td>0.00</td><td>0.00</td><td>0.00</td><td>19.50</td><td>0.00</td></tr><tr><td>2</td><td>104.35</td><td>0.00</td><td>0.00</td><td>-111.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table> <div>Art des Fußlagers:</div> <div>Profillänge von 10.10 m fest und Fuß gebettet</div> <div>Bettungsmodule</div> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <div>Ausnutzungsgrad $\mu_e = 510.355 / 775.747 = 0.658$</div> <div>Bettungslager $B_{h,d} = 510.355$ kN/m</div> <div>Erdwiderstand $E_{ph,d} = 775.747$ kN/m</div> <div>Anker und Steifen</div> <div>$N_{,d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N,d</td><td>N(g+q+w),k</td><td>N(g+w),k</td><td>N_{w,k}</td><td>EA</td><td>EI</td><td>N_{,d'}</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[°]</td><td>[m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m²/m]</td><td>[kN/m]</td></tr><tr><td>1</td><td>103.72</td><td>0.00</td><td>8.30</td><td>-275.04</td><td>-237.37</td><td>-237.37</td><td>-173.79</td><td>3.900E+7</td><td>2.100E+7</td><td>-302.64 Steife</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M_{,d} [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <table><tr><td>x</td><td>y</td><td>w_{x,d}</td><td>w_{y,d}</td><td>N_{,d}</td><td>Q_{,d}</td><td>M_{,d}</td></tr><tr><td>[m]</td><td>[m]</td><td>[mm]</td><td>[mm]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>-8.30</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-11.5</td><td>0.0</td><td>-281.66</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 7\Linkes Ufer\12_BS 7_LF2.vrb</div> <div>eingelesen.</div> <div>Anker/Steife</div> <table><tr><td>Tiefe</td><td>Vorverformung</td></tr><tr><td>[-]</td><td>[m]</td></tr><tr><td>1</td><td>103.72 -0.0100</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>gam,k</td><td>gam',k</td><td>phi,k</td><td>c,k</td><td>d(p)/phi</td><td>d(a)/phi</td></tr><tr><td>pas/akt</td><td>[mNHN]</td><td>[kN/m³]</td><td>[kN/m³]</td><td>[°]</td><td>[kN/m²]</td><td>[-]</td><td>[-]</td></tr><tr><td>1</td><td>105.45</td><td>19.00/0.00</td><td>10.00/0.00</td><td>30.00/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>2</td><td>103.68</td><td>17.00/0.00</td><td>8.50/0.00</td><td>22.50/0.00</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>3</td><td>102.52</td><td>17.00/17.00</td><td>8.50/8.50</td><td>22.50/22.50</td><td>3.00/3.00</td><td>-0.667</td><td>0.667</td></tr><tr><td>4</td><td>80.00</td><td>21.00/21.00</td><td>11.50/11.50</td><td>32.50/32.50</td><td>0.00/0.00</td><td>-0.667</td><td>0.667</td></tr></table>			Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	105.50	-12.50	0.00	0.00	0.00	19.50	0.00	2	104.35	0.00	0.00	-111.00	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000	Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	N _{w,k}	EA	EI	N _{,d'}	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-275.04	-237.37	-237.37	-173.79	3.900E+7	2.100E+7	-302.64 Steife	x	y	w _{x,d}	w _{y,d}	N _{,d}	Q _{,d}	M _{,d}	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-11.5	0.0	-281.66	0.00	0.00	-7.47	103.72	-11.5	0.0	-281.66	0.00	0.00	-7.47	103.72	-11.5	0.0	-281.66	0.00	0.00	-6.64	103.72	-11.5	0.0	-281.66	0.00	0.00	-5.81	103.72	-11.5	0.0	-281.66	0.00	0.00	-4.98	103.72	-11.5	0.0	-281.66	0.00	0.00	-4.15	103.72	-11.5	0.0	-281.66	0.00	0.00	-3.32	103.72	-11.5	0.0	-281.66	0.00	0.00	-2.49	103.72	-11.5	0.0	-281.66	0.00	0.00	-1.66	103.72	-11.5	0.0	-281.66	0.00	0.00	-0.83	103.72	-11.5	0.0	-281.66	0.00	0.00	0.00	103.72	-11.5	0.0	-281.66	0.00	0.00	Tiefe	Vorverformung	[-]	[m]	1	103.72 -0.0100	Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi	pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]	1	105.45	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667	2	103.68	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667	3	102.52	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667	4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667
Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k																																																																																																																																																																																																																																
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-2.49	103.72	-11.5	0.0	-281.66	0.00	0.00																																																																																																																																																																																																																																	
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-0.83	103.72	-11.5	0.0	-281.66	0.00	0.00																																																																																																																																																																																																																																	
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1	105.45	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																
2	103.68	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																
3	102.52	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667																																																																																																																																																																																																																																
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667																																																																																																																																																																																																																																
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																						

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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.45</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.68</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div><div>Aktive Erddruckkoordinaten ([g+q],k)</div><div>mit Zusatzdrücke</div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.100</td><td>106.090</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.500</td><td>0.000</td><td>5.649</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>5.649</td><td>6.128</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.047</td><td>6.128</td><td>9.981</td><td>0.50</td><td>4.53</td></tr><tr><td>105.047</td><td>104.680</td><td>9.981</td><td>13.500</td><td>4.53</td><td>8.20</td></tr><tr><td>104.680</td><td>104.350</td><td>0.000</td><td>0.000</td><td>8.20</td><td>11.50</td></tr><tr><td>104.350</td><td>104.052</td><td>0.000</td><td>0.000</td><td>11.50</td><td>14.48</td></tr><tr><td>104.052</td><td>103.720</td><td>0.000</td><td>0.000</td><td>14.48</td><td>17.80</td></tr><tr><td>103.720</td><td>103.680</td><td>0.000</td><td>0.000</td><td>17.80</td><td>18.20</td></tr><tr><td>103.680</td><td>103.452</td><td>0.000</td><td>22.333</td><td>18.20</td><td>20.48</td></tr><tr><td>103.452</td><td>103.328</td><td>22.333</td><td>47.499</td><td>20.48</td><td>21.72</td></tr><tr><td>103.328</td><td>103.223</td><td>47.499</td><td>80.687</td><td>21.72</td><td>22.77</td></tr><tr><td>103.223</td><td>103.204</td><td>80.687</td><td>84.840</td><td>22.77</td><td>22.96</td></tr><tr><td>103.204</td><td>103.079</td><td>84.840</td><td>120.230</td><td>22.96</td><td>24.21</td></tr><tr><td>103.079</td><td>102.988</td><td>120.230</td><td>150.053</td><td>24.21</td><td>25.12</td></tr><tr><td>102.988</td><td>102.972</td><td>150.053</td><td>153.771</td><td>25.12</td><td>25.28</td></tr><tr><td>102.972</td><td>102.955</td><td>153.771</td><td>153.311</td><td>25.28</td><td>25.45</td></tr><tr><td>102.955</td><td>102.831</td><td>153.311</td><td>153.387</td><td>25.45</td><td>26.69</td></tr><tr><td>102.831</td><td>102.707</td><td>153.387</td><td>155.701</td><td>26.69</td><td>27.93</td></tr><tr><td>102.707</td><td>102.686</td><td>155.701</td><td>156.383</td><td>27.93</td><td>28.14</td></tr><tr><td>102.686</td><td>102.644</td><td>156.383</td><td>151.320</td><td>28.14</td><td>28.56</td></tr><tr><td>102.644</td><td>102.611</td><td>151.320</td><td>147.431</td><td>28.56</td><td>28.89</td></tr><tr><td>102.611</td><td>102.550</td><td>147.431</td><td>148.975</td><td>28.89</td><td>29.50</td></tr><tr><td>102.550</td><td>102.520</td><td>148.975</td><td>149.734</td><td>0.00</td><td>0.00</td></tr><tr><td>102.520</td><td>102.389</td><td>107.867</td><td>110.372</td><td>0.00</td><td>0.00</td></tr><tr><td>102.389</td><td>102.163</td><td>110.372</td><td>98.478</td><td>0.00</td><td>0.00</td></tr><tr><td>102.163</td><td>102.091</td><td>98.478</td><td>99.174</td><td>0.00</td><td>0.00</td></tr><tr><td>102.091</td><td>101.844</td><td>99.174</td><td>89.536</td><td>0.00</td><td>0.00</td></tr><tr><td>101.844</td><td>101.794</td><td>89.536</td><td>87.608</td><td>0.00</td><td>0.00</td></tr><tr><td>101.794</td><td>101.693</td><td>87.608</td><td>80.327</td><td>0.00</td><td>0.00</td></tr><tr><td>101.693</td><td>101.497</td><td>80.327</td><td>74.331</td><td>0.00</td><td>0.00</td></tr><tr><td>101.497</td><td>101.223</td><td>74.331</td><td>59.926</td><td>0.00</td><td>0.00</td></tr><tr><td>101.223</td><td>101.066</td><td>59.926</td><td>56.192</td><td>0.00</td><td>0.00</td></tr><tr><td>101.066</td><td>100.753</td><td>56.192</td><td>48.722</td><td>0.00</td><td>0.00</td></tr><tr><td>100.753</td><td>100.282</td><td>48.722</td><td>47.032</td><td>0.00</td><td>0.00</td></tr><tr><td>100.282</td><td>100.094</td><td>47.032</td><td>48.553</td><td>0.00</td><td>0.00</td></tr><tr><td>100.094</td><td>100.047</td><td>48.553</td><td>48.933</td><td>0.00</td><td>0.00</td></tr><tr><td>100.047</td><td>99.997</td><td>48.933</td><td>49.137</td><td>0.00</td><td>0.00</td></tr><tr><td>99.997</td><td>99.050</td><td>49.137</td><td>53.021</td><td>0.00</td><td>0.00</td></tr><tr><td>99.050</td><td>98.054</td><td>53.021</td><td>57.109</td><td>0.00</td><td>0.00</td></tr><tr><td>98.054</td><td>97.854</td><td>57.109</td><td>57.926</td><td>0.00</td><td>0.00</td></tr><tr><td>97.854</td><td>97.052</td><td>57.926</td><td>58.278</td><td>0.00</td><td>0.00</td></tr><tr><td>97.052</td><td>96.099</td><td>58.278</td><td>58.695</td><td>0.00</td><td>0.00</td></tr><tr><td>96.099</td><td>95.999</td><td>58.695</td><td>58.739</td><td>0.00</td><td>0.00</td></tr><tr><td>95.999</td><td>95.031</td><td>58.739</td><td>59.163</td><td>0.00</td><td>0.00</td></tr><tr><td>95.031</td><td>80.000</td><td>59.163</td><td>120.815</td><td>0.00</td><td>0.00</td></tr></table></div> <div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	1.000	1.000	0.000	0.00	40.89	0.179	2	103.68	1.000	1.000	0.000	0.00	40.89	0.179	3	102.52	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	0.000	0.000	0.00	0.00	106.090	105.500	0.000	5.649	0.00	0.00	105.500	105.450	5.649	6.128	0.00	0.50	105.450	105.047	6.128	9.981	0.50	4.53	105.047	104.680	9.981	13.500	4.53	8.20	104.680	104.350	0.000	0.000	8.20	11.50	104.350	104.052	0.000	0.000	11.50	14.48	104.052	103.720	0.000	0.000	14.48	17.80	103.720	103.680	0.000	0.000	17.80	18.20	103.680	103.452	0.000	22.333	18.20	20.48	103.452	103.328	22.333	47.499	20.48	21.72	103.328	103.223	47.499	80.687	21.72	22.77	103.223	103.204	80.687	84.840	22.77	22.96	103.204	103.079	84.840	120.230	22.96	24.21	103.079	102.988	120.230	150.053	24.21	25.12	102.988	102.972	150.053	153.771	25.12	25.28	102.972	102.955	153.771	153.311	25.28	25.45	102.955	102.831	153.311	153.387	25.45	26.69	102.831	102.707	153.387	155.701	26.69	27.93	102.707	102.686	155.701	156.383	27.93	28.14	102.686	102.644	156.383	151.320	28.14	28.56	102.644	102.611	151.320	147.431	28.56	28.89	102.611	102.550	147.431	148.975	28.89	29.50	102.550	102.520	148.975	149.734	0.00	0.00	102.520	102.389	107.867	110.372	0.00	0.00	102.389	102.163	110.372	98.478	0.00	0.00	102.163	102.091	98.478	99.174	0.00	0.00	102.091	101.844	99.174	89.536	0.00	0.00	101.844	101.794	89.536	87.608	0.00	0.00	101.794	101.693	87.608	80.327	0.00	0.00	101.693	101.497	80.327	74.331	0.00	0.00	101.497	101.223	74.331	59.926	0.00	0.00	101.223	101.066	59.926	56.192	0.00	0.00	101.066	100.753	56.192	48.722	0.00	0.00	100.753	100.282	48.722	47.032	0.00	0.00	100.282	100.094	47.032	48.553	0.00	0.00	100.094	100.047	48.553	48.933	0.00	0.00	100.047	99.997	48.933	49.137	0.00	0.00	99.997	99.050	49.137	53.021	0.00	0.00	99.050	98.054	53.021	57.109	0.00	0.00	98.054	97.854	57.109	57.926	0.00	0.00	97.854	97.052	57.926	58.278	0.00	0.00	97.052	96.099	58.278	58.695	0.00	0.00	96.099	95.999	58.695	58.739	0.00	0.00	95.999	95.031	58.739	59.163	0.00	0.00	95.031	80.000	59.163	120.815	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	<div>Seite Anlage P2/22</div> <div>Archiv Nr. 2004-0025</div> <div>Vorgang: Genehmigungsgstatik</div> <div>Projekt-Nr.: 2004-0025</div>
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102.707	102.686	155.701	156.383	27.93	28.14																																																																																																																																																																																																																																																																																																																																																										
102.686	102.644	156.383	151.320	28.14	28.56																																																																																																																																																																																																																																																																																																																																																										
102.644	102.611	151.320	147.431	28.56	28.89																																																																																																																																																																																																																																																																																																																																																										
102.611	102.550	147.431	148.975	28.89	29.50																																																																																																																																																																																																																																																																																																																																																										
102.550	102.520	148.975	149.734	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
102.520	102.389	107.867	110.372	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
102.389	102.163	110.372	98.478	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
102.163	102.091	98.478	99.174	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
102.091	101.844	99.174	89.536	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.844	101.794	89.536	87.608	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.794	101.693	87.608	80.327	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.693	101.497	80.327	74.331	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.497	101.223	74.331	59.926	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.223	101.066	59.926	56.192	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
101.066	100.753	56.192	48.722	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
100.753	100.282	48.722	47.032	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
100.282	100.094	47.032	48.553	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
100.094	100.047	48.553	48.933	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
100.047	99.997	48.933	49.137	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
99.997	99.050	49.137	53.021	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
99.050	98.054	53.021	57.109	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
98.054	97.854	57.109	57.926	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
97.854	97.052	57.926	58.278	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
97.052	96.099	58.278	58.695	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
96.099	95.999	58.695	58.739	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
95.999	95.031	58.739	59.163	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
95.031	80.000	59.163	120.815	0.00	0.00																																																																																																																																																																																																																																																																																																																																																										
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																																																												
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																												
0.00	0.00	106.10	102.55																																																																																																																																																																																																																																																																																																																																																												

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																				
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																						
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																				
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>3</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>102.61</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-7.22</td><td>-7.70</td></tr><tr><td>102.52</td><td>102.39</td><td>-0.94</td><td>-6.52</td></tr><tr><td>102.39</td><td>102.16</td><td>-6.52</td><td>-16.10</td></tr><tr><td>102.16</td><td>102.09</td><td>-16.10</td><td>-19.16</td></tr><tr><td>102.09</td><td>101.84</td><td>-19.16</td><td>-29.69</td></tr><tr><td>101.84</td><td>101.79</td><td>-29.69</td><td>-31.79</td></tr><tr><td>101.79</td><td>101.69</td><td>-31.79</td><td>-36.09</td></tr><tr><td>101.69</td><td>101.50</td><td>-36.09</td><td>-44.43</td></tr><tr><td>101.50</td><td>101.22</td><td>-44.43</td><td>-56.08</td></tr><tr><td>101.22</td><td>101.07</td><td>-56.08</td><td>-62.74</td></tr><tr><td>101.07</td><td>100.75</td><td>-62.74</td><td>-76.06</td></tr><tr><td>100.75</td><td>100.28</td><td>-76.06</td><td>-96.05</td></tr><tr><td>100.28</td><td>100.09</td><td>-96.05</td><td>-104.05</td></tr><tr><td>100.09</td><td>100.05</td><td>-104.05</td><td>-106.04</td></tr><tr><td>100.05</td><td>100.00</td><td>-106.04</td><td>-108.16</td></tr><tr><td>100.00</td><td>99.05</td><td>-108.16</td><td>-148.41</td></tr><tr><td>99.05</td><td>98.05</td><td>-148.41</td><td>-190.77</td></tr><tr><td>98.05</td><td>97.85</td><td>-190.77</td><td>-199.24</td></tr><tr><td>97.85</td><td>97.05</td><td>-199.24</td><td>-233.35</td></tr><tr><td>97.05</td><td>96.10</td><td>-233.35</td><td>-273.85</td></tr><tr><td>96.10</td><td>96.00</td><td>-273.85</td><td>-278.11</td></tr><tr><td>96.00</td><td>95.03</td><td>-278.11</td><td>-319.24</td></tr><tr><td>95.03</td><td>80.00</td><td>-319.24</td><td>-958.09</td></tr></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-13.1</td><td>-1.9</td><td>-0.4</td><td></td></tr><tr><td>105.50</td><td>-36.5</td><td>-1.9</td><td>-15.4</td><td></td></tr><tr><td>105.45</td><td>-37.5</td><td>-2.3</td><td>-15.5</td><td></td></tr><tr><td>105.05</td><td>-46.3</td><td>-7.2</td><td>-17.3</td><td></td></tr><tr><td>104.68</td><td>-54.3</td><td>-15.0</td><td>-21.2</td><td></td></tr><tr><td>104.35</td><td>-61.5</td><td>-18.9</td><td>-26.8</td><td></td></tr><tr><td>104.35</td><td>-61.5</td><td>-152.1</td><td>-26.8</td><td></td></tr><tr><td>104.05</td><td>-68.0</td><td>-156.7</td><td>-72.7</td><td></td></tr><tr><td>103.72</td><td>-75.2</td><td>-163.2</td><td>-125.8</td><td>-281.7</td></tr><tr><td>103.72</td><td>-75.2</td><td>118.5</td><td>-125.8</td><td></td></tr><tr><td>103.68</td><td>-76.1</td><td>117.6</td><td>-121.1</td><td></td></tr><tr><td>103.45</td><td>-82.5</td><td>106.7</td><td>-95.6</td><td></td></tr><tr><td>103.33</td><td>-86.6</td><td>98.5</td><td>-82.8</td><td></td></tr><tr><td>103.22</td><td>-91.0</td><td>88.0</td><td>-72.9</td><td></td></tr><tr><td>103.20</td><td>-91.9</td><td>85.6</td><td>-71.3</td><td></td></tr><tr><td>103.08</td><td>-98.5</td><td>67.5</td><td>-61.7</td><td></td></tr><tr><td>102.99</td><td>-104.3</td><td>50.6</td><td>-56.3</td><td></td></tr><tr><td>102.97</td><td>-105.4</td><td>47.3</td><td>-55.5</td><td></td></tr><tr><td>102.96</td><td>-106.6</td><td>43.8</td><td>-54.7</td><td></td></tr><tr><td>102.83</td><td>-115.1</td><td>18.0</td><td>-50.9</td><td></td></tr><tr><td>102.71</td><td>-123.8</td><td>-8.2</td><td>-50.3</td><td></td></tr><tr><td>102.69</td><td>-125.2</td><td>-12.6</td><td>-50.5</td><td></td></tr><tr><td>102.64</td><td>-128.1</td><td>-21.3</td><td>-51.2</td><td></td></tr><tr><td>102.61</td><td>-130.3</td><td>-28.2</td><td>-52.0</td><td></td></tr><tr><td>102.55</td><td>-134.5</td><td>-40.8</td><td>-54.1</td><td></td></tr><tr><td>102.52</td><td>-136.3</td><td>-45.9</td><td>-55.4</td><td></td></tr><tr><td>102.39</td><td>-138.9</td><td>-61.7</td><td>-62.5</td><td></td></tr><tr><td>102.16</td><td>-142.1</td><td>-84.5</td><td>-79.1</td><td></td></tr></table>			Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	102.52	3.034	3.911	22.500	-15.01	23.23	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.61	102.55	0.00	0.00	102.55	102.52	-7.22	-7.70	102.52	102.39	-0.94	-6.52	102.39	102.16	-6.52	-16.10	102.16	102.09	-16.10	-19.16	102.09	101.84	-19.16	-29.69	101.84	101.79	-29.69	-31.79	101.79	101.69	-31.79	-36.09	101.69	101.50	-36.09	-44.43	101.50	101.22	-44.43	-56.08	101.22	101.07	-56.08	-62.74	101.07	100.75	-62.74	-76.06	100.75	100.28	-76.06	-96.05	100.28	100.09	-96.05	-104.05	100.09	100.05	-104.05	-106.04	100.05	100.00	-106.04	-108.16	100.00	99.05	-108.16	-148.41	99.05	98.05	-148.41	-190.77	98.05	97.85	-190.77	-199.24	97.85	97.05	-199.24	-233.35	97.05	96.10	-233.35	-273.85	96.10	96.00	-273.85	-278.11	96.00	95.03	-278.11	-319.24	95.03	80.00	-319.24	-958.09	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	-0.2	0.0	0.0		105.50	-13.1	-1.9	-0.4		105.50	-36.5	-1.9	-15.4		105.45	-37.5	-2.3	-15.5		105.05	-46.3	-7.2	-17.3		104.68	-54.3	-15.0	-21.2		104.35	-61.5	-18.9	-26.8		104.35	-61.5	-152.1	-26.8		104.05	-68.0	-156.7	-72.7		103.72	-75.2	-163.2	-125.8	-281.7	103.72	-75.2	118.5	-125.8		103.68	-76.1	117.6	-121.1		103.45	-82.5	106.7	-95.6		103.33	-86.6	98.5	-82.8		103.22	-91.0	88.0	-72.9		103.20	-91.9	85.6	-71.3		103.08	-98.5	67.5	-61.7		102.99	-104.3	50.6	-56.3		102.97	-105.4	47.3	-55.5		102.96	-106.6	43.8	-54.7		102.83	-115.1	18.0	-50.9		102.71	-123.8	-8.2	-50.3		102.69	-125.2	-12.6	-50.5		102.64	-128.1	-21.3	-51.2		102.61	-130.3	-28.2	-52.0		102.55	-134.5	-40.8	-54.1		102.52	-136.3	-45.9	-55.4		102.39	-138.9	-61.7	-62.5		102.16	-142.1	-84.5	-79.1	
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																																
3	102.52	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																
4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																			
102.61	102.55	0.00	0.00																																																																																																																																																																																																																																																																																																			
102.55	102.52	-7.22	-7.70																																																																																																																																																																																																																																																																																																			
102.52	102.39	-0.94	-6.52																																																																																																																																																																																																																																																																																																			
102.39	102.16	-6.52	-16.10																																																																																																																																																																																																																																																																																																			
102.16	102.09	-16.10	-19.16																																																																																																																																																																																																																																																																																																			
102.09	101.84	-19.16	-29.69																																																																																																																																																																																																																																																																																																			
101.84	101.79	-29.69	-31.79																																																																																																																																																																																																																																																																																																			
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101.69	101.50	-36.09	-44.43																																																																																																																																																																																																																																																																																																			
101.50	101.22	-44.43	-56.08																																																																																																																																																																																																																																																																																																			
101.22	101.07	-56.08	-62.74																																																																																																																																																																																																																																																																																																			
101.07	100.75	-62.74	-76.06																																																																																																																																																																																																																																																																																																			
100.75	100.28	-76.06	-96.05																																																																																																																																																																																																																																																																																																			
100.28	100.09	-96.05	-104.05																																																																																																																																																																																																																																																																																																			
100.09	100.05	-104.05	-106.04																																																																																																																																																																																																																																																																																																			
100.05	100.00	-106.04	-108.16																																																																																																																																																																																																																																																																																																			
100.00	99.05	-108.16	-148.41																																																																																																																																																																																																																																																																																																			
99.05	98.05	-148.41	-190.77																																																																																																																																																																																																																																																																																																			
98.05	97.85	-190.77	-199.24																																																																																																																																																																																																																																																																																																			
97.85	97.05	-199.24	-233.35																																																																																																																																																																																																																																																																																																			
97.05	96.10	-233.35	-273.85																																																																																																																																																																																																																																																																																																			
96.10	96.00	-273.85	-278.11																																																																																																																																																																																																																																																																																																			
96.00	95.03	-278.11	-319.24																																																																																																																																																																																																																																																																																																			
95.03	80.00	-319.24	-958.09																																																																																																																																																																																																																																																																																																			
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																		
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																		
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106.09	-0.2	0.0	0.0																																																																																																																																																																																																																																																																																																			
105.50	-13.1	-1.9	-0.4																																																																																																																																																																																																																																																																																																			
105.50	-36.5	-1.9	-15.4																																																																																																																																																																																																																																																																																																			
105.45	-37.5	-2.3	-15.5																																																																																																																																																																																																																																																																																																			
105.05	-46.3	-7.2	-17.3																																																																																																																																																																																																																																																																																																			
104.68	-54.3	-15.0	-21.2																																																																																																																																																																																																																																																																																																			
104.35	-61.5	-18.9	-26.8																																																																																																																																																																																																																																																																																																			
104.35	-61.5	-152.1	-26.8																																																																																																																																																																																																																																																																																																			
104.05	-68.0	-156.7	-72.7																																																																																																																																																																																																																																																																																																			
103.72	-75.2	-163.2	-125.8	-281.7																																																																																																																																																																																																																																																																																																		
103.72	-75.2	118.5	-125.8																																																																																																																																																																																																																																																																																																			
103.68	-76.1	117.6	-121.1																																																																																																																																																																																																																																																																																																			
103.45	-82.5	106.7	-95.6																																																																																																																																																																																																																																																																																																			
103.33	-86.6	98.5	-82.8																																																																																																																																																																																																																																																																																																			
103.22	-91.0	88.0	-72.9																																																																																																																																																																																																																																																																																																			
103.20	-91.9	85.6	-71.3																																																																																																																																																																																																																																																																																																			
103.08	-98.5	67.5	-61.7																																																																																																																																																																																																																																																																																																			
102.99	-104.3	50.6	-56.3																																																																																																																																																																																																																																																																																																			
102.97	-105.4	47.3	-55.5																																																																																																																																																																																																																																																																																																			
102.96	-106.6	43.8	-54.7																																																																																																																																																																																																																																																																																																			
102.83	-115.1	18.0	-50.9																																																																																																																																																																																																																																																																																																			
102.71	-123.8	-8.2	-50.3																																																																																																																																																																																																																																																																																																			
102.69	-125.2	-12.6	-50.5																																																																																																																																																																																																																																																																																																			
102.64	-128.1	-21.3	-51.2																																																																																																																																																																																																																																																																																																			
102.61	-130.3	-28.2	-52.0																																																																																																																																																																																																																																																																																																			
102.55	-134.5	-40.8	-54.1																																																																																																																																																																																																																																																																																																			
102.52	-136.3	-45.9	-55.4																																																																																																																																																																																																																																																																																																			
102.39	-138.9	-61.7	-62.5																																																																																																																																																																																																																																																																																																			
102.16	-142.1	-84.5	-79.1																																																																																																																																																																																																																																																																																																			
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div><div>102.09</div><div>-142.8</div><div>-90.5</div><div>-85.4</div></div><div><div>101.84</div><div>-143.9</div><div>-106.6</div><div>-110.0</div></div><div><div>101.79</div><div>-143.9</div><div>-109.0</div><div>-115.3</div></div><div><div>101.69</div><div>-143.7</div><div>-112.6</div><div>-126.5</div></div><div><div>101.50</div><div>-142.3</div><div>-115.8</div><div>-149.0</div></div><div><div>101.22</div><div>-138.3</div><div>-112.1</div><div>-180.5</div></div><div><div>101.07</div><div>-135.0</div><div>-105.6</div><div>-197.5</div></div><div><div>100.75</div><div>-126.0</div><div>-85.0</div><div>-227.7</div></div><div><div>100.28</div><div>-106.8</div><div>-37.2</div><div>-257.1</div></div><div><div>100.09</div><div>-97.2</div><div>-13.2</div><div>-261.9</div></div><div><div>100.05</div><div>-94.8</div><div>-7.3</div><div>-262.4</div></div><div><div>100.00</div><div>-92.4</div><div>-1.2</div><div>-262.6</div></div><div><div>99.05</div><div>-59.3</div><div>77.6</div><div>-221.2</div></div><div><div>98.05</div><div>-47.5</div><div>98.3</div><div>-128.9</div></div><div><div>97.85</div><div>-47.4</div><div>96.2</div><div>-109.5</div></div><div><div>97.05</div><div>-53.7</div><div>70.7</div><div>-40.8</div></div><div><div>96.10</div><div>-71.0</div><div>8.5</div><div>-0.4</div></div><div><div>96.00</div><div>-72.5</div><div>0.0</div><div>0.0</div></div></div></div> <div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.09</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-11.4</div><div>-1.7</div><div>-0.3</div><div></div></div><div><div>105.50</div><div>-30.9</div><div>-1.7</div><div>-12.8</div><div></div></div><div><div>105.45</div><div>-31.8</div><div>-2.0</div><div>-12.9</div><div></div></div><div><div>105.05</div><div>-39.4</div><div>-6.2</div><div>-14.5</div><div></div></div><div><div>104.68</div><div>-46.4</div><div>-12.9</div><div>-17.9</div><div></div></div><div><div>104.35</div><div>-52.6</div><div>-16.1</div><div>-22.6</div><div></div></div><div><div>104.35</div><div>-52.6</div><div>-127.1</div><div>-22.6</div><div></div></div><div><div>104.05</div><div>-58.2</div><div>-131.0</div><div>-61.0</div><div></div></div><div><div>103.72</div><div>-64.5</div><div>-136.4</div><div>-105.4</div><div>-237.4</div></div><div><div>103.72</div><div>-64.5</div><div>101.0</div><div>-105.4</div><div></div></div><div><div>103.68</div><div>-65.3</div><div>100.3</div><div>-101.4</div><div></div></div><div><div>103.45</div><div>-70.9</div><div>90.9</div><div>-79.6</div><div></div></div><div><div>103.33</div><div>-74.4</div><div>84.0</div><div>-68.7</div><div></div></div><div><div>103.22</div><div>-78.2</div><div>74.9</div><div>-60.3</div><div></div></div><div><div>103.20</div><div>-79.0</div><div>72.9</div><div>-58.9</div><div></div></div><div><div>103.08</div><div>-84.8</div><div>57.2</div><div>-50.8</div><div></div></div><div><div>102.99</div><div>-89.8</div><div>42.7</div><div>-46.2</div><div></div></div><div><div>102.97</div><div>-90.8</div><div>39.8</div><div>-45.5</div><div></div></div><div><div>102.96</div><div>-91.8</div><div>36.7</div><div>-44.9</div><div></div></div><div><div>102.83</div><div>-99.3</div><div>14.4</div><div>-41.7</div><div></div></div><div><div>102.71</div><div>-106.8</div><div>-8.2</div><div>-41.3</div><div></div></div><div><div>102.69</div><div>-108.0</div><div>-12.0</div><div>-41.5</div><div></div></div><div><div>102.64</div><div>-110.5</div><div>-19.5</div><div>-42.2</div><div></div></div><div><div>102.61</div><div>-112.5</div><div>-25.5</div><div>-42.9</div><div></div></div><div><div>102.55</div><div>-116.1</div><div>-36.3</div><div>-44.8</div><div></div></div><div><div>102.52</div><div>-117.8</div><div>-40.8</div><div>-46.0</div><div></div></div><div><div>102.39</div><div>-120.0</div><div>-54.5</div><div>-52.2</div><div></div></div><div><div>102.16</div><div>-122.8</div><div>-74.3</div><div>-66.9</div><div></div></div><div><div>102.09</div><div>-123.4</div><div>-79.5</div><div>-72.4</div><div></div></div><div><div>101.84</div><div>-124.4</div><div>-93.6</div><div>-94.0</div><div></div></div><div><div>101.79</div><div>-124.4</div><div>-95.6</div><div>-98.6</div><div></div></div><div><div>101.69</div><div>-124.2</div><div>-98.7</div><div>-108.5</div><div></div></div><div><div>101.50</div><div>-122.9</div><div>-101.5</div><div>-128.2</div><div></div></div><div><div>101.22</div><div>-119.5</div><div>-98.2</div><div>-155.7</div><div></div></div><div><div>101.07</div><div>-116.6</div><div>-92.6</div><div>-170.7</div><div></div></div><div><div>100.75</div><div>-108.9</div><div>-74.6</div><div>-197.2</div><div></div></div><div><div>100.28</div><div>-92.2</div><div>-32.9</div><div>-223.0</div><div></div></div><div><div>100.09</div><div>-83.9</div><div>-12.0</div><div>-227.3</div><div></div></div><div><div>100.05</div><div>-81.9</div><div>-6.8</div><div>-227.7</div><div></div></div><div><div>100.00</div><div>-79.7</div><div>-1.5</div><div>-227.9</div><div></div></div><div><div>99.05</div><div>-51.1</div><div>67.3</div><div>-192.3</div><div></div></div><div><div>98.05</div><div>-40.9</div><div>85.5</div><div>-112.1</div><div></div></div><div><div>97.85</div><div>-40.8</div><div>83.7</div><div>-95.3</div><div></div></div><div><div>97.05</div><div>-46.3</div><div>61.5</div><div>-35.5</div><div></div></div><div><div>96.10</div><div>-61.4</div><div>7.4</div><div>-0.4</div><div></div></div><div><div>96.00</div><div>-62.7</div><div>0.0</div><div>0.0</div><div></div></div></div></div>					
Schnitt:		Anlage P2 Schnitt 7L		Seite Anlage P2/24	
Kapitel:		3 LF 3 (BS-T)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																				
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<div>Schnittgrößen (g+w,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-11.4</td><td>-1.7</td><td>-0.3</td><td></td></tr><tr><td>105.50</td><td>-30.9</td><td>-1.7</td><td>-12.8</td><td></td></tr><tr><td>105.45</td><td>-31.8</td><td>-2.0</td><td>-12.9</td><td></td></tr><tr><td>105.05</td><td>-39.4</td><td>-6.2</td><td>-14.5</td><td></td></tr><tr><td>104.68</td><td>-46.4</td><td>-12.9</td><td>-17.9</td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-16.1</td><td>-22.6</td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-127.1</td><td>-22.6</td><td></td></tr><tr><td>104.05</td><td>-58.2</td><td>-131.0</td><td>-61.0</td><td></td></tr><tr><td>103.72</td><td>-64.5</td><td>-136.4</td><td>-105.4</td><td>-237.4</td></tr><tr><td>103.72</td><td>-64.5</td><td>101.0</td><td>-105.4</td><td></td></tr><tr><td>103.68</td><td>-65.3</td><td>100.3</td><td>-101.4</td><td></td></tr><tr><td>103.45</td><td>-70.9</td><td>90.9</td><td>-79.6</td><td></td></tr><tr><td>103.33</td><td>-74.4</td><td>84.0</td><td>-68.7</td><td></td></tr><tr><td>103.22</td><td>-78.2</td><td>74.9</td><td>-60.3</td><td></td></tr><tr><td>103.20</td><td>-79.0</td><td>72.9</td><td>-58.9</td><td></td></tr><tr><td>103.08</td><td>-84.8</td><td>57.2</td><td>-50.8</td><td></td></tr><tr><td>102.99</td><td>-89.8</td><td>42.7</td><td>-46.2</td><td></td></tr><tr><td>102.97</td><td>-90.8</td><td>39.8</td><td>-45.5</td><td></td></tr><tr><td>102.96</td><td>-91.8</td><td>36.7</td><td>-44.9</td><td></td></tr><tr><td>102.83</td><td>-99.3</td><td>14.4</td><td>-41.7</td><td></td></tr><tr><td>102.71</td><td>-106.8</td><td>-8.2</td><td>-41.3</td><td></td></tr><tr><td>102.69</td><td>-108.0</td><td>-12.0</td><td>-41.5</td><td></td></tr><tr><td>102.64</td><td>-110.5</td><td>-19.5</td><td>-42.2</td><td></td></tr><tr><td>102.61</td><td>-112.5</td><td>-25.5</td><td>-42.9</td><td></td></tr><tr><td>102.55</td><td>-116.1</td><td>-36.3</td><td>-44.8</td><td></td></tr><tr><td>102.52</td><td>-117.8</td><td>-40.8</td><td>-46.0</td><td></td></tr><tr><td>102.39</td><td>-120.0</td><td>-54.5</td><td>-52.2</td><td></td></tr><tr><td>102.16</td><td>-122.8</td><td>-74.3</td><td>-66.9</td><td></td></tr><tr><td>102.09</td><td>-123.4</td><td>-79.5</td><td>-72.4</td><td></td></tr><tr><td>101.84</td><td>-124.4</td><td>-93.6</td><td>-94.0</td><td></td></tr><tr><td>101.79</td><td>-124.4</td><td>-95.6</td><td>-98.6</td><td></td></tr><tr><td>101.69</td><td>-124.2</td><td>-98.7</td><td>-108.5</td><td></td></tr><tr><td>101.50</td><td>-122.9</td><td>-101.5</td><td>-128.2</td><td></td></tr><tr><td>101.22</td><td>-119.5</td><td>-98.2</td><td>-155.7</td><td></td></tr><tr><td>101.07</td><td>-116.6</td><td>-92.6</td><td>-170.7</td><td></td></tr><tr><td>100.75</td><td>-108.9</td><td>-74.6</td><td>-197.2</td><td></td></tr><tr><td>100.28</td><td>-92.2</td><td>-32.9</td><td>-223.0</td><td></td></tr><tr><td>100.09</td><td>-83.9</td><td>-12.0</td><td>-227.3</td><td></td></tr><tr><td>100.05</td><td>-81.9</td><td>-6.8</td><td>-227.7</td><td></td></tr><tr><td>100.00</td><td>-79.7</td><td>-1.5</td><td>-227.9</td><td></td></tr><tr><td>99.05</td><td>-51.1</td><td>67.3</td><td>-192.3</td><td></td></tr><tr><td>98.05</td><td>-40.9</td><td>85.5</td><td>-112.1</td><td></td></tr><tr><td>97.85</td><td>-40.8</td><td>83.7</td><td>-95.3</td><td></td></tr><tr><td>97.05</td><td>-46.3</td><td>61.5</td><td>-35.5</td><td></td></tr><tr><td>96.10</td><td>-61.4</td><td>7.4</td><td>-0.4</td><td></td></tr><tr><td>96.00</td><td>-62.7</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> <div>Schnittgrößen (q,k)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-132.5</td></tr><tr><td>103.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	-0.2	0.0	0.0		105.50	-11.4	-1.7	-0.3		105.50	-30.9	-1.7	-12.8		105.45	-31.8	-2.0	-12.9		105.05	-39.4	-6.2	-14.5		104.68	-46.4	-12.9	-17.9		104.35	-52.6	-16.1	-22.6		104.35	-52.6	-127.1	-22.6		104.05	-58.2	-131.0	-61.0		103.72	-64.5	-136.4	-105.4	-237.4	103.72	-64.5	101.0	-105.4		103.68	-65.3	100.3	-101.4		103.45	-70.9	90.9	-79.6		103.33	-74.4	84.0	-68.7		103.22	-78.2	74.9	-60.3		103.20	-79.0	72.9	-58.9		103.08	-84.8	57.2	-50.8		102.99	-89.8	42.7	-46.2		102.97	-90.8	39.8	-45.5		102.96	-91.8	36.7	-44.9		102.83	-99.3	14.4	-41.7		102.71	-106.8	-8.2	-41.3		102.69	-108.0	-12.0	-41.5		102.64	-110.5	-19.5	-42.2		102.61	-112.5	-25.5	-42.9		102.55	-116.1	-36.3	-44.8		102.52	-117.8	-40.8	-46.0		102.39	-120.0	-54.5	-52.2		102.16	-122.8	-74.3	-66.9		102.09	-123.4	-79.5	-72.4		101.84	-124.4	-93.6	-94.0		101.79	-124.4	-95.6	-98.6		101.69	-124.2	-98.7	-108.5		101.50	-122.9	-101.5	-128.2		101.22	-119.5	-98.2	-155.7		101.07	-116.6	-92.6	-170.7		100.75	-108.9	-74.6	-197.2		100.28	-92.2	-32.9	-223.0		100.09	-83.9	-12.0	-227.3		100.05	-81.9	-6.8	-227.7		100.00	-79.7	-1.5	-227.9		99.05	-51.1	67.3	-192.3		98.05	-40.9	85.5	-112.1		97.85	-40.8	83.7	-95.3		97.05	-46.3	61.5	-35.5		96.10	-61.4	7.4	-0.4		96.00	-62.7	0.0	0.0		Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.45	0.0	0.0	0.0		105.05	0.0	0.0	0.0		104.68	0.0	0.0	0.0		104.35	0.0	0.0	0.0		104.05	0.0	0.0	0.0		103.72	0.0	0.0	0.0	-132.5	103.68	0.0	0.0	0.0		103.45	0.0	0.0	0.0		103.33	0.0	0.0	0.0		103.22	0.0	0.0	0.0		103.20	0.0	0.0	0.0		103.08	0.0	0.0	0.0		102.99	0.0	0.0	0.0	
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<table><tr><td>102.97</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.96</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.83</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.71</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.64</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.61</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.52</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.39</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.84</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.79</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.22</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.07</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.28</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.85</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.99</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr></table>						102.97	0.0	0.0	0.0	102.96	0.0	0.0	0.0	102.83	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.64	0.0	0.0	0.0	102.61	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.39	0.0	0.0	0.0	102.16	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.84	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.69	0.0	0.0	0.0	101.50	0.0	0.0	0.0	101.22	0.0	0.0	0.0	101.07	0.0	0.0	0.0	100.75	0.0	0.0	0.0	100.28	0.0	0.0	0.0	100.09	0.0	0.0	0.0	100.05	0.0	0.0	0.0	100.00	0.0	0.0	0.0	99.05	0.0	0.0	0.0	98.05	0.0	0.0	0.0	97.85	0.0	0.0	0.0	97.05	0.0	0.0	0.0	96.10	0.0	0.0	0.0	96.00	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-15.3	-	-	-	106.09	-15.3	-	-	-	106.09	-15.3	-	-	-	106.04	-15.1	-	-	-	105.55	-14.0	-	-	-	105.50	-13.9	-	-	-	105.50	-13.9	-	-	-	105.45	-13.8	-	-	-	105.45	-13.8	-	-	-	105.40	-13.7	-	-	-	105.10	-13.0	-	-	-	105.05	-12.9	-	-	-	105.05	-12.9	-	-	-	104.99	-12.8	-	-	-	104.73	-12.2	-	-	-	104.68	-12.1	-	-	-	104.68	-12.1	-	-	-	104.64	-12.0	-	-	-	104.40	-11.5	-	-	-	104.35	-11.4	-	-	-	104.35	-11.4	-	-	-	104.30	-11.3	-	-	-	104.10	-10.8	-	-	-	104.05	-10.7	-	-	-	104.05	-10.7	-	-	-	104.00	-10.6	-	-	-	103.77	-10.1	-	-	-	103.72	-10.0	-	-	-	103.72	-10.0	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.50	-9.5	-	-	-	103.45	-9.4	-	-	-	103.45	-9.4	-	-	-	103.39	-9.3	-	-	-	103.39	-9.3	-	-	-
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102.55	-7.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.55	-7.6	0.00	0.00	11.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.52	-7.5	0.00	0.00	12.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.52	-7.5	0.20	1.53	1.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.48	-7.5	0.20	1.51	4.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.43	-7.4	1.03	7.58	7.58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.3	1.03	7.49	10.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.3	1.46	10.60	10.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.34	-7.2	1.46	10.47	13.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.21	-6.9	3.33	23.06	23.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-6.8	3.33	22.76	26.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-6.8	3.83	26.17	26.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-6.7	3.83	25.63	31.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-6.7	4.66	31.13	31.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.04	-6.6	4.66	30.68	34.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.89	-6.3	7.12	44.82	44.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-6.2	7.12	44.13	48.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-6.2	7.78	48.24	48.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.79	-6.1	7.78	47.50	51.66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.79	-6.1	8.46	51.66	51.66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-6.0	8.46	50.84	55.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-6.0	9.18	55.16	55.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.69	-5.9	9.18	54.27	58.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.69	-5.9	9.92	58.65	58.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.64	-5.8	9.92	57.72	62.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.55	-5.6	12.21	68.81	68.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.50	-5.5	12.21	67.69	72.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.50	-5.5	13.03	72.19	72.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.44	-5.4	13.03	70.86	75.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.28	-5.1	17.00	87.34	87.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-5.0	17.00	85.66	91.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-5.0	18.09	91.13	91.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.17	-4.9	18.09	89.43	94.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.12	-4.9	20.27	98.35	98.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.07	-4.8	20.27	96.48	101.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage P2 Schnitt 7L			Seite Anlage P2/27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>101.07 -4.8 21.42 101.96 101.95</div> <div>101.01 -4.7 21.42 100.00 105.56</div> <div>100.80 -4.3 27.84 120.00 120.00</div> <div>100.75 -4.2 27.84 117.57 123.61</div> <div>100.75 -4.2 29.27 123.61 123.61</div> <div>100.70 -4.1 29.27 121.08 127.21</div> <div>100.33 -3.6 42.83 152.48 152.47</div> <div>100.28 -3.5 42.83 149.12 156.08</div> <div>100.28 -3.5 44.83 156.09 156.08</div> <div>100.24 -3.4 44.83 152.96 159.33</div> <div>100.14 -3.3 50.00 163.76 165.83</div> <div>100.09 -3.2 50.00 160.40 169.08</div> <div>100.09 -3.2 50.00 160.40 169.08</div> <div>100.05 -3.1 50.00 157.09 172.32</div> <div>100.05 -3.1 50.00 157.09 172.32</div> <div>100.00 -3.1 50.00 153.62 175.76</div> <div>100.00 -3.1 50.00 153.62 175.76</div> <div>99.95 -3.0 50.00 150.20 179.21</div> <div>99.10 -2.0 50.00 99.26 237.72</div> <div>99.05 -1.9 50.00 96.66 241.16</div> <div>99.05 -1.9 50.00 96.66 241.16</div> <div>99.00 -1.9 50.00 94.10 244.60</div> <div>98.10 -1.1 50.00 54.09 306.55</div> <div>98.05 -1.0 50.00 52.15 310.00</div> <div>98.05 -1.0 50.00 52.15 310.00</div> <div>98.00 -1.0 50.00 50.23 313.44</div> <div>97.90 -0.9 50.00 46.46 320.32</div> <div>97.85 -0.9 50.00 44.61 323.76</div> <div>97.85 -0.9 50.00 44.61 323.76</div> <div>97.80 -0.9 50.00 42.76 327.23</div> <div>97.10 -0.4 50.00 18.60 375.72</div> <div>97.05 -0.3 50.00 16.96 379.19</div> <div>97.05 -0.3 50.00 16.96 379.19</div> <div>97.00 -0.3 50.00 15.32 382.65</div> <div>96.15 0.2 50.00 -11.79 441.54</div> <div>96.10 0.3 50.00 -13.37 445.00</div> <div>96.10 0.3 50.00 -13.37 445.00</div> <div>96.05 0.3 50.00 -14.95 448.47</div> <div>96.05 0.3 50.00 -14.95 448.47</div> <div>96.00 0.3 50.00 -16.53 451.93</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.03611205</div> <div>Theoretischer Fußpunkt = 95.999 m</div> <div>Einbindetiefe tg = 6.55 m</div> <div>Profillänge = 10.10 m</div>		
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/28
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_{,k} = 191.12 \text{ kN/m}$</p> <p>$G'_{,k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 19.50 \text{ kN/m}$</p> <p>$E_{av,k} = 94.70 \text{ kN/m}$ ($E_{ah,k} = 523.17 \text{ kN/m}$)</p> <p>$B_{v,k} = 176.75$</p> <p>Summe $V_{,k} = 128.58 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 96.88 bis 93.36 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.52</td><td>96.00</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 96.00 m = 1.000 m²/m $\implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 358.60 / 1.40 = 256.14 \text{ kN/m}$</p> <p>$R_{,d} = R_{b,d} + R_{s1,d} = 1121.19 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 229.35 - 0.00 + 108.91 + 23.40 = 361.65 \text{ kN/m}$</p> <p>$\implies \mu = V_{,d} / R_{,d} = 361.65 / 1121.19 = 0.32$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.52	0.00	S2: Auelehm (unter GS)	102.52	96.00	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm (unter GS)											
102.52	96.00	55.00	s3: Flussskies, -sand											
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/29												
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 2004-0025												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 4 (BS-P)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 7 Datei: 14_BS 7_LF4.vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) y(unten) Verkehrslast [-] [kN/m²] [m] [mNHN] [mNHN] [mNHN] [-] 1 69.90 2.35 103.68 102.71 100.28 nein</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 183.71 0.55 0.85 103.68 103.45 102.99 102.97 102.61 nein 2 161.93 0.85 1.15 103.68 103.33 102.61 102.69 102.16 nein 3 140.14 1.15 1.45 103.68 103.20 102.16 102.39 101.69 nein 4 118.36 1.45 1.75 103.68 103.08 101.69 102.09 101.22 nein 5 96.58 1.75 2.05 103.68 102.96 101.22 101.79 100.75 nein 6 74.79 2.05 2.35 103.68 102.83 100.75 101.50 100.28 nein 7 46.00 0.00 0.55 103.68 103.68 103.68 103.22 102.99 nein 8 29.00 2.50 5.70 103.68 102.64 100.05 97.85 95.03 nein</div> <div>Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 13.50 106.09 104.68 Ständig 2 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt:	Anlage P2 Schnitt 7L	Seite Anlage P2/30
Kapitel:	4 LF 4 (BS-P)	Archiv Nr. 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.50	-12.50	0.00	0.00	0.00	19.50	0.00
2	104.35	0.00	0.00	-111.00	0.00	0.00	0.00

Art des Fußlagers:
Profillänge von 10.10 m fest und Fuß gebettet

Bettungsmodule
von bis ks(oben) ks(unten)
[mNHN] [mNHN] [MN/m³] [MN/m³]
102.55 80.00 50.000 50.000

Ausnutzungsgrad $\mu_e = 593.029 / 788.511 = 0.752$
Bettungslager $B_{h,d} = 593.029 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 788.511 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-277.40	-215.14	-215.14	-174.49	3.900E+7	2.100E+7	-274.31 Steife

Zusätzlich für Steifen
Steife I
Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-12.7	0.0	-287.39	0.00	0.00
-7.47	103.72	-12.7	0.0	-287.39	0.00	0.00
-7.47	103.72	-12.7	0.0	-287.39	0.00	0.00
-6.64	103.72	-12.7	0.0	-287.39	0.00	0.00
-5.81	103.72	-12.7	0.0	-287.39	0.00	0.00
-4.98	103.72	-12.7	0.0	-287.39	0.00	0.00
-4.15	103.72	-12.7	0.0	-287.39	0.00	0.00
-3.32	103.72	-12.7	0.0	-287.39	0.00	0.00
-2.49	103.72	-12.7	0.0	-287.39	0.00	0.00
-1.66	103.72	-12.7	0.0	-287.39	0.00	0.00
-0.83	103.72	-12.8	0.0	-287.39	0.00	0.00
0.00	103.72	-12.8	0.0	-287.39	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 7\Linkes Ufer\12_BS 7_LF2.vrb
eingelesen.


Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0100

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.45	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.68	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.52	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt:	Anlage P2	Schnitt 7L	Seite Anlage P2/01
Kapitel:	4	LF 4 (BS-P)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																							
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																							
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div><table><tr><th>Schicht</th><th>UK</th><th>kagh</th><th>kach</th><th>phi,k</th><th>delta</th><th>theta</th><th>kagh(40°)</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.45</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>2</td><td>103.68</td><td>1.000</td><td>1.000</td><td>0.000</td><td>0.00</td><td>40.89</td><td>0.179</td></tr><tr><td>3</td><td>102.52</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.100</td><td>106.090</td><td>0.000</td><td>0.000</td><td>0.00</td><td>0.00</td></tr><tr><td>106.090</td><td>105.500</td><td>0.000</td><td>5.649</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>5.649</td><td>6.128</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.047</td><td>6.128</td><td>9.981</td><td>0.50</td><td>4.53</td></tr><tr><td>105.047</td><td>104.680</td><td>9.981</td><td>13.500</td><td>4.53</td><td>8.20</td></tr><tr><td>104.680</td><td>104.350</td><td>0.000</td><td>0.000</td><td>8.20</td><td>11.50</td></tr><tr><td>104.350</td><td>104.052</td><td>0.000</td><td>0.000</td><td>11.50</td><td>14.48</td></tr><tr><td>104.052</td><td>103.720</td><td>0.000</td><td>0.000</td><td>14.48</td><td>17.80</td></tr><tr><td>103.720</td><td>103.680</td><td>0.000</td><td>0.000</td><td>17.80</td><td>18.20</td></tr><tr><td>103.680</td><td>103.452</td><td>0.000</td><td>22.333</td><td>18.20</td><td>20.48</td></tr><tr><td>103.452</td><td>103.328</td><td>22.333</td><td>47.499</td><td>20.48</td><td>21.72</td></tr><tr><td>103.328</td><td>103.223</td><td>47.499</td><td>80.687</td><td>21.72</td><td>22.77</td></tr><tr><td>103.223</td><td>103.204</td><td>80.687</td><td>84.840</td><td>22.77</td><td>22.96</td></tr><tr><td>103.204</td><td>103.079</td><td>84.840</td><td>120.230</td><td>22.96</td><td>24.21</td></tr><tr><td>103.079</td><td>102.988</td><td>120.230</td><td>150.053</td><td>24.21</td><td>25.12</td></tr><tr><td>102.988</td><td>102.972</td><td>150.053</td><td>153.771</td><td>25.12</td><td>25.28</td></tr><tr><td>102.972</td><td>102.955</td><td>153.771</td><td>153.311</td><td>25.28</td><td>25.45</td></tr><tr><td>102.955</td><td>102.831</td><td>153.311</td><td>153.387</td><td>25.45</td><td>26.69</td></tr><tr><td>102.831</td><td>102.707</td><td>153.387</td><td>155.701</td><td>26.69</td><td>27.93</td></tr><tr><td>102.707</td><td>102.686</td><td>155.701</td><td>156.383</td><td>27.93</td><td>28.14</td></tr><tr><td>102.686</td><td>102.644</td><td>156.383</td><td>151.320</td><td>28.14</td><td>28.56</td></tr><tr><td>102.644</td><td>102.611</td><td>151.320</td><td>147.431</td><td>28.56</td><td>28.89</td></tr><tr><td>102.611</td><td>102.550</td><td>147.431</td><td>148.975</td><td>28.89</td><td>29.50</td></tr><tr><td>102.550</td><td>102.520</td><td>148.975</td><td>149.734</td><td>0.00</td><td>0.00</td></tr><tr><td>102.520</td><td>102.389</td><td>107.867</td><td>110.372</td><td>0.00</td><td>0.00</td></tr><tr><td>102.389</td><td>102.163</td><td>110.372</td><td>98.478</td><td>0.00</td><td>0.00</td></tr><tr><td>102.163</td><td>102.091</td><td>98.478</td><td>99.174</td><td>0.00</td><td>0.00</td></tr><tr><td>102.091</td><td>101.794</td><td>99.174</td><td>87.608</td><td>0.00</td><td>0.00</td></tr><tr><td>101.794</td><td>101.693</td><td>87.608</td><td>80.327</td><td>0.00</td><td>0.00</td></tr><tr><td>101.693</td><td>101.497</td><td>80.327</td><td>74.331</td><td>0.00</td><td>0.00</td></tr><tr><td>101.497</td><td>101.223</td><td>74.331</td><td>59.926</td><td>0.00</td><td>0.00</td></tr><tr><td>101.223</td><td>101.066</td><td>59.926</td><td>56.192</td><td>0.00</td><td>0.00</td></tr><tr><td>101.066</td><td>100.753</td><td>56.192</td><td>48.722</td><td>0.00</td><td>0.00</td></tr><tr><td>100.753</td><td>100.282</td><td>48.722</td><td>47.032</td><td>0.00</td><td>0.00</td></tr><tr><td>100.282</td><td>100.188</td><td>47.032</td><td>47.792</td><td>0.00</td><td>0.00</td></tr><tr><td>100.188</td><td>100.094</td><td>47.792</td><td>48.553</td><td>0.00</td><td>0.00</td></tr><tr><td>100.094</td><td>100.047</td><td>48.553</td><td>48.933</td><td>0.00</td><td>0.00</td></tr><tr><td>100.047</td><td>99.050</td><td>48.933</td><td>53.021</td><td>0.00</td><td>0.00</td></tr><tr><td>99.050</td><td>98.054</td><td>53.021</td><td>57.109</td><td>0.00</td><td>0.00</td></tr><tr><td>98.054</td><td>97.854</td><td>57.109</td><td>57.926</td><td>0.00</td><td>0.00</td></tr><tr><td>97.854</td><td>97.052</td><td>57.926</td><td>58.278</td><td>0.00</td><td>0.00</td></tr><tr><td>97.052</td><td>96.099</td><td>58.278</td><td>58.695</td><td>0.00</td><td>0.00</td></tr><tr><td>96.099</td><td>95.999</td><td>58.695</td><td>58.739</td><td>0.00</td><td>0.00</td></tr><tr><td>95.999</td><td>95.031</td><td>58.739</td><td>59.163</td><td>0.00</td><td>0.00</td></tr><tr><td>95.031</td><td>80.000</td><td>59.163</td><td>120.815</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.45	1.000	1.000	0.000	0.00	40.89	0.179	2	103.68	1.000	1.000	0.000	0.00	40.89	0.179	3	102.52	0.501	0.555	22.500	7.50	53.61	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.090	0.000	0.000	0.00	0.00	106.090	105.500	0.000	5.649	0.00	0.00	105.500	105.450	5.649	6.128	0.00	0.50	105.450	105.047	6.128	9.981	0.50	4.53	105.047	104.680	9.981	13.500	4.53	8.20	104.680	104.350	0.000	0.000	8.20	11.50	104.350	104.052	0.000	0.000	11.50	14.48	104.052	103.720	0.000	0.000	14.48	17.80	103.720	103.680	0.000	0.000	17.80	18.20	103.680	103.452	0.000	22.333	18.20	20.48	103.452	103.328	22.333	47.499	20.48	21.72	103.328	103.223	47.499	80.687	21.72	22.77	103.223	103.204	80.687	84.840	22.77	22.96	103.204	103.079	84.840	120.230	22.96	24.21	103.079	102.988	120.230	150.053	24.21	25.12	102.988	102.972	150.053	153.771	25.12	25.28	102.972	102.955	153.771	153.311	25.28	25.45	102.955	102.831	153.311	153.387	25.45	26.69	102.831	102.707	153.387	155.701	26.69	27.93	102.707	102.686	155.701	156.383	27.93	28.14	102.686	102.644	156.383	151.320	28.14	28.56	102.644	102.611	151.320	147.431	28.56	28.89	102.611	102.550	147.431	148.975	28.89	29.50	102.550	102.520	148.975	149.734	0.00	0.00	102.520	102.389	107.867	110.372	0.00	0.00	102.389	102.163	110.372	98.478	0.00	0.00	102.163	102.091	98.478	99.174	0.00	0.00	102.091	101.794	99.174	87.608	0.00	0.00	101.794	101.693	87.608	80.327	0.00	0.00	101.693	101.497	80.327	74.331	0.00	0.00	101.497	101.223	74.331	59.926	0.00	0.00	101.223	101.066	59.926	56.192	0.00	0.00	101.066	100.753	56.192	48.722	0.00	0.00	100.753	100.282	48.722	47.032	0.00	0.00	100.282	100.188	47.032	47.792	0.00	0.00	100.188	100.094	47.792	48.553	0.00	0.00	100.094	100.047	48.553	48.933	0.00	0.00	100.047	99.050	48.933	53.021	0.00	0.00	99.050	98.054	53.021	57.109	0.00	0.00	98.054	97.854	57.109	57.926	0.00	0.00	97.854	97.052	57.926	58.278	0.00	0.00	97.052	96.099	58.278	58.695	0.00	0.00	96.099	95.999	58.695	58.739	0.00	0.00	95.999	95.031	58.739	59.163	0.00	0.00	95.031	80.000	59.163	120.815	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																																		
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105.047	104.680	9.981	13.500	4.53	8.20																																																																																																																																																																																																																																																																																																																																																				
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104.052	103.720	0.000	0.000	14.48	17.80																																																																																																																																																																																																																																																																																																																																																				
103.720	103.680	0.000	0.000	17.80	18.20																																																																																																																																																																																																																																																																																																																																																				
103.680	103.452	0.000	22.333	18.20	20.48																																																																																																																																																																																																																																																																																																																																																				
103.452	103.328	22.333	47.499	20.48	21.72																																																																																																																																																																																																																																																																																																																																																				
103.328	103.223	47.499	80.687	21.72	22.77																																																																																																																																																																																																																																																																																																																																																				
103.223	103.204	80.687	84.840	22.77	22.96																																																																																																																																																																																																																																																																																																																																																				
103.204	103.079	84.840	120.230	22.96	24.21																																																																																																																																																																																																																																																																																																																																																				
103.079	102.988	120.230	150.053	24.21	25.12																																																																																																																																																																																																																																																																																																																																																				
102.988	102.972	150.053	153.771	25.12	25.28																																																																																																																																																																																																																																																																																																																																																				
102.972	102.955	153.771	153.311	25.28	25.45																																																																																																																																																																																																																																																																																																																																																				
102.955	102.831	153.311	153.387	25.45	26.69																																																																																																																																																																																																																																																																																																																																																				
102.831	102.707	153.387	155.701	26.69	27.93																																																																																																																																																																																																																																																																																																																																																				
102.707	102.686	155.701	156.383	27.93	28.14																																																																																																																																																																																																																																																																																																																																																				
102.686	102.644	156.383	151.320	28.14	28.56																																																																																																																																																																																																																																																																																																																																																				
102.644	102.611	151.320	147.431	28.56	28.89																																																																																																																																																																																																																																																																																																																																																				
102.611	102.550	147.431	148.975	28.89	29.50																																																																																																																																																																																																																																																																																																																																																				
102.550	102.520	148.975	149.734	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
102.520	102.389	107.867	110.372	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
102.389	102.163	110.372	98.478	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
102.163	102.091	98.478	99.174	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
102.091	101.794	99.174	87.608	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
101.794	101.693	87.608	80.327	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
101.693	101.497	80.327	74.331	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
101.497	101.223	74.331	59.926	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
101.223	101.066	59.926	56.192	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
101.066	100.753	56.192	48.722	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
100.753	100.282	48.722	47.032	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
100.282	100.188	47.032	47.792	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
100.188	100.094	47.792	48.553	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
100.094	100.047	48.553	48.933	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
100.047	99.050	48.933	53.021	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
99.050	98.054	53.021	57.109	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
98.054	97.854	57.109	57.926	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
97.854	97.052	57.926	58.278	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
97.052	96.099	58.278	58.695	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
96.099	95.999	58.695	58.739	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
95.999	95.031	58.739	59.163	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
95.031	80.000	59.163	120.815	0.00	0.00																																																																																																																																																																																																																																																																																																																																																				
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																																																						
[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																						
0.00	0.00	106.10	102.55																																																																																																																																																																																																																																																																																																																																																						
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/32																																																																																																																																																																																																																																																																																																																																																							
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																								

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																										
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																												
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																										
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>3</td><td>102.52</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>102.61</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.52</td><td>-12.42</td><td>-12.87</td></tr><tr><td>102.52</td><td>102.39</td><td>-12.20</td><td>-17.38</td></tr><tr><td>102.39</td><td>102.16</td><td>-17.38</td><td>-26.28</td></tr><tr><td>102.16</td><td>102.09</td><td>-26.28</td><td>-29.11</td></tr><tr><td>102.09</td><td>101.79</td><td>-29.11</td><td>-40.85</td></tr><tr><td>101.79</td><td>101.69</td><td>-40.85</td><td>-44.84</td></tr><tr><td>101.69</td><td>101.50</td><td>-44.84</td><td>-52.58</td></tr><tr><td>101.50</td><td>101.22</td><td>-52.58</td><td>-63.40</td></tr><tr><td>101.22</td><td>101.07</td><td>-63.40</td><td>-69.58</td></tr><tr><td>101.07</td><td>100.75</td><td>-69.58</td><td>-81.96</td></tr><tr><td>100.75</td><td>100.28</td><td>-81.96</td><td>-100.52</td></tr><tr><td>100.28</td><td>100.19</td><td>-100.52</td><td>-104.23</td></tr><tr><td>100.19</td><td>100.09</td><td>-104.23</td><td>-107.94</td></tr><tr><td>100.09</td><td>100.05</td><td>-107.94</td><td>-109.80</td></tr><tr><td>100.05</td><td>99.05</td><td>-109.80</td><td>-149.13</td></tr><tr><td>99.05</td><td>98.05</td><td>-149.13</td><td>-188.47</td></tr><tr><td>98.05</td><td>97.85</td><td>-188.47</td><td>-196.33</td></tr><tr><td>97.85</td><td>97.05</td><td>-196.33</td><td>-228.00</td></tr><tr><td>97.05</td><td>96.10</td><td>-228.00</td><td>-265.61</td></tr><tr><td>96.10</td><td>96.00</td><td>-265.61</td><td>-269.57</td></tr><tr><td>96.00</td><td>95.03</td><td>-269.57</td><td>-307.76</td></tr><tr><td>95.03</td><td>80.00</td><td>-307.76</td><td>-900.98</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-14.5</td><td>-2.1</td><td>-0.4</td><td></td></tr><tr><td>105.50</td><td>-40.8</td><td>-2.1</td><td>-17.3</td><td></td></tr><tr><td>105.45</td><td>-42.0</td><td>-2.5</td><td>-17.4</td><td></td></tr><tr><td>105.05</td><td>-51.7</td><td>-8.0</td><td>-19.4</td><td></td></tr><tr><td>104.68</td><td>-60.6</td><td>-16.7</td><td>-23.8</td><td></td></tr><tr><td>104.35</td><td>-68.5</td><td>-21.1</td><td>-30.0</td><td></td></tr><tr><td>104.35</td><td>-68.5</td><td>-170.9</td><td>-30.0</td><td></td></tr><tr><td>104.05</td><td>-75.7</td><td>-176.1</td><td>-81.6</td><td></td></tr><tr><td>103.72</td><td>-83.7</td><td>-183.4</td><td>-141.3</td><td>-287.4</td></tr><tr><td>103.72</td><td>-83.7</td><td>104.0</td><td>-141.3</td><td></td></tr><tr><td>103.68</td><td>-84.7</td><td>103.1</td><td>-137.2</td><td></td></tr><tr><td>103.45</td><td>-91.9</td><td>90.8</td><td>-115.1</td><td></td></tr><tr><td>103.33</td><td>-96.4</td><td>81.7</td><td>-104.3</td><td></td></tr><tr><td>103.22</td><td>-101.2</td><td>70.0</td><td>-96.3</td><td></td></tr><tr><td>103.20</td><td>-102.2</td><td>67.4</td><td>-95.0</td><td></td></tr><tr><td>103.08</td><td>-109.6</td><td>47.2</td><td>-87.8</td><td></td></tr><tr><td>102.99</td><td>-116.0</td><td>28.4</td><td>-84.3</td><td></td></tr><tr><td>102.97</td><td>-117.2</td><td>24.7</td><td>-83.9</td><td></td></tr><tr><td>102.96</td><td>-118.5</td><td>20.8</td><td>-83.5</td><td></td></tr><tr><td>102.83</td><td>-128.0</td><td>-7.8</td><td>-82.7</td><td></td></tr><tr><td>102.71</td><td>-137.6</td><td>-36.9</td><td>-85.5</td><td></td></tr><tr><td>102.69</td><td>-139.2</td><td>-41.8</td><td>-86.3</td><td></td></tr><tr><td>102.64</td><td>-142.4</td><td>-51.5</td><td>-88.2</td><td></td></tr><tr><td>102.61</td><td>-144.9</td><td>-59.2</td><td>-90.1</td><td></td></tr><tr><td>102.55</td><td>-149.4</td><td>-73.1</td><td>-94.1</td><td></td></tr><tr><td>102.52</td><td>-151.4</td><td>-78.8</td><td>-96.4</td><td></td></tr><tr><td>102.39</td><td>-153.0</td><td>-93.0</td><td>-107.7</td><td></td></tr><tr><td>102.16</td><td>-154.3</td><td>-112.6</td><td>-131.0</td><td></td></tr><tr><td>102.09</td><td>-154.3</td><td>-117.5</td><td>-139.3</td><td></td></tr><tr><td>101.79</td><td>-152.6</td><td>-130.6</td><td>-176.4</td><td></td></tr></tbody></table>			Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	3	102.52	3.034	3.911	22.500	-15.01	23.23	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.61	102.55	0.00	0.00	102.55	102.52	-12.42	-12.87	102.52	102.39	-12.20	-17.38	102.39	102.16	-17.38	-26.28	102.16	102.09	-26.28	-29.11	102.09	101.79	-29.11	-40.85	101.79	101.69	-40.85	-44.84	101.69	101.50	-44.84	-52.58	101.50	101.22	-52.58	-63.40	101.22	101.07	-63.40	-69.58	101.07	100.75	-69.58	-81.96	100.75	100.28	-81.96	-100.52	100.28	100.19	-100.52	-104.23	100.19	100.09	-104.23	-107.94	100.09	100.05	-107.94	-109.80	100.05	99.05	-109.80	-149.13	99.05	98.05	-149.13	-188.47	98.05	97.85	-188.47	-196.33	97.85	97.05	-196.33	-228.00	97.05	96.10	-228.00	-265.61	96.10	96.00	-265.61	-269.57	96.00	95.03	-269.57	-307.76	95.03	80.00	-307.76	-900.98	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	-0.2	0.0	0.0		105.50	-14.5	-2.1	-0.4		105.50	-40.8	-2.1	-17.3		105.45	-42.0	-2.5	-17.4		105.05	-51.7	-8.0	-19.4		104.68	-60.6	-16.7	-23.8		104.35	-68.5	-21.1	-30.0		104.35	-68.5	-170.9	-30.0		104.05	-75.7	-176.1	-81.6		103.72	-83.7	-183.4	-141.3	-287.4	103.72	-83.7	104.0	-141.3		103.68	-84.7	103.1	-137.2		103.45	-91.9	90.8	-115.1		103.33	-96.4	81.7	-104.3		103.22	-101.2	70.0	-96.3		103.20	-102.2	67.4	-95.0		103.08	-109.6	47.2	-87.8		102.99	-116.0	28.4	-84.3		102.97	-117.2	24.7	-83.9		102.96	-118.5	20.8	-83.5		102.83	-128.0	-7.8	-82.7		102.71	-137.6	-36.9	-85.5		102.69	-139.2	-41.8	-86.3		102.64	-142.4	-51.5	-88.2		102.61	-144.9	-59.2	-90.1		102.55	-149.4	-73.1	-94.1		102.52	-151.4	-78.8	-96.4		102.39	-153.0	-93.0	-107.7		102.16	-154.3	-112.6	-131.0		102.09	-154.3	-117.5	-139.3		101.79	-152.6	-130.6	-176.4	
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																						
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3	102.52	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																						
4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																						
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101.07	100.75	-69.58	-81.96																																																																																																																																																																																																																																																																																																									
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98.05	97.85	-188.47	-196.33																																																																																																																																																																																																																																																																																																									
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97.05	96.10	-228.00	-265.61																																																																																																																																																																																																																																																																																																									
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96.00	95.03	-269.57	-307.76																																																																																																																																																																																																																																																																																																									
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105.05	-51.7	-8.0	-19.4																																																																																																																																																																																																																																																																																																									
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103.72	-83.7	-183.4	-141.3	-287.4																																																																																																																																																																																																																																																																																																								
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103.68	-84.7	103.1	-137.2																																																																																																																																																																																																																																																																																																									
103.45	-91.9	90.8	-115.1																																																																																																																																																																																																																																																																																																									
103.33	-96.4	81.7	-104.3																																																																																																																																																																																																																																																																																																									
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102.99	-116.0	28.4	-84.3																																																																																																																																																																																																																																																																																																									
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102.83	-128.0	-7.8	-82.7																																																																																																																																																																																																																																																																																																									
102.71	-137.6	-36.9	-85.5																																																																																																																																																																																																																																																																																																									
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102.64	-142.4	-51.5	-88.2																																																																																																																																																																																																																																																																																																									
102.61	-144.9	-59.2	-90.1																																																																																																																																																																																																																																																																																																									
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



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([g+q+w],k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-11.4</td><td>-1.7</td><td>-0.3</td><td></td></tr><tr><td>105.50</td><td>-30.9</td><td>-1.7</td><td>-12.8</td><td></td></tr><tr><td>105.45</td><td>-31.8</td><td>-2.0</td><td>-12.9</td><td></td></tr><tr><td>105.05</td><td>-39.4</td><td>-6.2</td><td>-14.5</td><td></td></tr><tr><td>104.68</td><td>-46.4</td><td>-12.9</td><td>-17.9</td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-16.1</td><td>-22.6</td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-127.1</td><td>-22.6</td><td></td></tr><tr><td>104.05</td><td>-58.2</td><td>-131.0</td><td>-61.0</td><td></td></tr><tr><td>103.72</td><td>-64.5</td><td>-136.4</td><td>-105.4</td><td>-215.1</td></tr><tr><td>103.72</td><td>-64.5</td><td>78.8</td><td>-105.4</td><td></td></tr><tr><td>103.68</td><td>-65.3</td><td>78.1</td><td>-102.3</td><td></td></tr><tr><td>103.45</td><td>-70.9</td><td>68.7</td><td>-85.6</td><td></td></tr><tr><td>103.33</td><td>-74.4</td><td>61.7</td><td>-77.4</td><td></td></tr><tr><td>103.22</td><td>-78.2</td><td>52.7</td><td>-71.4</td><td></td></tr><tr><td>103.20</td><td>-79.0</td><td>50.6</td><td>-70.4</td><td></td></tr><tr><td>103.08</td><td>-84.8</td><td>35.0</td><td>-65.0</td><td></td></tr><tr><td>102.99</td><td>-89.8</td><td>20.4</td><td>-62.5</td><td></td></tr><tr><td>102.97</td><td>-90.8</td><td>17.5</td><td>-62.2</td><td></td></tr><tr><td>102.96</td><td>-91.8</td><td>14.5</td><td>-61.9</td><td></td></tr><tr><td>102.83</td><td>-99.3</td><td>-7.8</td><td>-61.5</td><td></td></tr><tr><td>102.71</td><td>-106.8</td><td>-30.4</td><td>-63.8</td><td></td></tr><tr><td>102.69</td><td>-108.0</td><td>-34.2</td><td>-64.5</td><td></td></tr><tr><td>102.64</td><td>-110.5</td><td>-41.7</td><td>-66.1</td><td></td></tr><tr><td>102.61</td><td>-112.5</td><td>-47.7</td><td>-67.6</td><td></td></tr><tr><td>102.55</td><td>-116.1</td><td>-58.5</td><td>-70.8</td><td></td></tr><tr><td>102.52</td><td>-117.7</td><td>-63.0</td><td>-72.6</td><td></td></tr><tr><td>102.39</td><td>-119.0</td><td>-74.1</td><td>-81.7</td><td></td></tr><tr><td>102.16</td><td>-120.0</td><td>-89.5</td><td>-100.2</td><td></td></tr><tr><td>102.09</td><td>-120.0</td><td>-93.3</td><td>-106.8</td><td></td></tr><tr><td>101.79</td><td>-118.7</td><td>-103.5</td><td>-136.3</td><td></td></tr><tr><td>101.69</td><td>-117.7</td><td>-104.7</td><td>-146.8</td><td></td></tr><tr><td>101.50</td><td>-114.9</td><td>-103.6</td><td>-167.3</td><td></td></tr><tr><td>101.22</td><td>-109.4</td><td>-95.0</td><td>-194.7</td><td></td></tr><tr><td>101.07</td><td>-105.3</td><td>-86.3</td><td>-208.9</td><td></td></tr><tr><td>100.75</td><td>-95.1</td><td>-62.2</td><td>-232.4</td><td></td></tr><tr><td>100.28</td><td>-74.9</td><td>-11.6</td><td>-250.3</td><td></td></tr><tr><td>100.19</td><td>-70.7</td><td>-1.1</td><td>-250.9</td><td></td></tr><tr><td>100.09</td><td>-66.8</td><td>8.7</td><td>-250.6</td><td></td></tr><tr><td>100.05</td><td>-64.9</td><td>13.3</td><td>-250.0</td><td></td></tr><tr><td>99.05</td><td>-38.1</td><td>77.5</td><td>-199.6</td><td></td></tr><tr><td>98.05</td><td>-30.7</td><td>88.8</td><td>-113.0</td><td></td></tr><tr><td>97.85</td><td>-31.0</td><td>86.0</td><td>-95.6</td><td></td></tr><tr><td>97.05</td><td>-37.4</td><td>61.4</td><td>-35.1</td><td></td></tr><tr><td>96.10</td><td>-52.9</td><td>7.2</td><td>-0.4</td><td></td></tr><tr><td>96.00</td><td>-54.2</td><td>0.0</td><td>0.0</td><td></td></tr></table></div></div>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.09	-0.2	0.0	0.0		105.50	-11.4	-1.7	-0.3		105.50	-30.9	-1.7	-12.8		105.45	-31.8	-2.0	-12.9		105.05	-39.4	-6.2	-14.5		104.68	-46.4	-12.9	-17.9		104.35	-52.6	-16.1	-22.6		104.35	-52.6	-127.1	-22.6		104.05	-58.2	-131.0	-61.0		103.72	-64.5	-136.4	-105.4	-215.1	103.72	-64.5	78.8	-105.4		103.68	-65.3	78.1	-102.3		103.45	-70.9	68.7	-85.6		103.33	-74.4	61.7	-77.4		103.22	-78.2	52.7	-71.4		103.20	-79.0	50.6	-70.4		103.08	-84.8	35.0	-65.0		102.99	-89.8	20.4	-62.5		102.97	-90.8	17.5	-62.2		102.96	-91.8	14.5	-61.9		102.83	-99.3	-7.8	-61.5		102.71	-106.8	-30.4	-63.8		102.69	-108.0	-34.2	-64.5		102.64	-110.5	-41.7	-66.1		102.61	-112.5	-47.7	-67.6		102.55	-116.1	-58.5	-70.8		102.52	-117.7	-63.0	-72.6		102.39	-119.0	-74.1	-81.7		102.16	-120.0	-89.5	-100.2		102.09	-120.0	-93.3	-106.8		101.79	-118.7	-103.5	-136.3		101.69	-117.7	-104.7	-146.8		101.50	-114.9	-103.6	-167.3		101.22	-109.4	-95.0	-194.7		101.07	-105.3	-86.3	-208.9		100.75	-95.1	-62.2	-232.4		100.28	-74.9	-11.6	-250.3		100.19	-70.7	-1.1	-250.9		100.09	-66.8	8.7	-250.6		100.05	-64.9	13.3	-250.0		99.05	-38.1	77.5	-199.6		98.05	-30.7	88.8	-113.0		97.85	-31.0	86.0	-95.6		97.05	-37.4	61.4	-35.1		96.10	-52.9	7.2	-0.4		96.00	-54.2	0.0	0.0	
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(g+w,k)</div><table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th><th></th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th></th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-11.4</td><td>-1.7</td><td>-0.3</td><td></td><td></td></tr><tr><td>105.50</td><td>-30.9</td><td>-1.7</td><td>-12.8</td><td></td><td></td></tr><tr><td>105.45</td><td>-31.8</td><td>-2.0</td><td>-12.9</td><td></td><td></td></tr><tr><td>105.05</td><td>-39.4</td><td>-6.2</td><td>-14.5</td><td></td><td></td></tr><tr><td>104.68</td><td>-46.4</td><td>-12.9</td><td>-17.9</td><td></td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-16.1</td><td>-22.6</td><td></td><td></td></tr><tr><td>104.35</td><td>-52.6</td><td>-127.1</td><td>-22.6</td><td></td><td></td></tr><tr><td>104.05</td><td>-58.2</td><td>-131.0</td><td>-61.0</td><td></td><td></td></tr><tr><td>103.72</td><td>-64.5</td><td>-136.4</td><td>-105.4</td><td>-215.1</td><td></td></tr><tr><td>103.72</td><td>-64.5</td><td>78.8</td><td>-105.4</td><td></td><td></td></tr><tr><td>103.68</td><td>-65.3</td><td>78.1</td><td>-102.3</td><td></td><td></td></tr><tr><td>103.45</td><td>-70.9</td><td>68.7</td><td>-85.6</td><td></td><td></td></tr><tr><td>103.33</td><td>-74.4</td><td>61.7</td><td>-77.4</td><td></td><td></td></tr><tr><td>103.22</td><td>-78.2</td><td>52.7</td><td>-71.4</td><td></td><td></td></tr><tr><td>103.20</td><td>-79.0</td><td>50.6</td><td>-70.4</td><td></td><td></td></tr><tr><td>103.08</td><td>-84.8</td><td>35.0</td><td>-65.0</td><td></td><td></td></tr><tr><td>102.99</td><td>-89.8</td><td>20.4</td><td>-62.5</td><td></td><td></td></tr><tr><td>102.97</td><td>-90.8</td><td>17.5</td><td>-62.2</td><td></td><td></td></tr><tr><td>102.96</td><td>-91.8</td><td>14.5</td><td>-61.9</td><td></td><td></td></tr><tr><td>102.83</td><td>-99.3</td><td>-7.8</td><td>-61.5</td><td></td><td></td></tr><tr><td>102.71</td><td>-106.8</td><td>-30.4</td><td>-63.8</td><td></td><td></td></tr><tr><td>102.69</td><td>-108.0</td><td>-34.2</td><td>-64.5</td><td></td><td></td></tr><tr><td>102.64</td><td>-110.5</td><td>-41.7</td><td>-66.1</td><td></td><td></td></tr><tr><td>102.61</td><td>-112.5</td><td>-47.7</td><td>-67.6</td><td></td><td></td></tr><tr><td>102.55</td><td>-116.1</td><td>-58.5</td><td>-70.8</td><td></td><td></td></tr><tr><td>102.52</td><td>-117.7</td><td>-63.0</td><td>-72.6</td><td></td><td></td></tr><tr><td>102.39</td><td>-119.0</td><td>-74.1</td><td>-81.7</td><td></td><td></td></tr><tr><td>102.16</td><td>-120.0</td><td>-89.5</td><td>-100.2</td><td></td><td></td></tr><tr><td>102.09</td><td>-120.0</td><td>-93.3</td><td>-106.8</td><td></td><td></td></tr><tr><td>101.79</td><td>-118.7</td><td>-103.5</td><td>-136.3</td><td></td><td></td></tr><tr><td>101.69</td><td>-117.7</td><td>-104.7</td><td>-146.8</td><td></td><td></td></tr><tr><td>101.50</td><td>-114.9</td><td>-103.6</td><td>-167.3</td><td></td><td></td></tr><tr><td>101.22</td><td>-109.4</td><td>-95.0</td><td>-194.7</td><td></td><td></td></tr><tr><td>101.07</td><td>-105.3</td><td>-86.3</td><td>-208.9</td><td></td><td></td></tr><tr><td>100.75</td><td>-95.1</td><td>-62.2</td><td>-232.4</td><td></td><td></td></tr><tr><td>100.28</td><td>-74.9</td><td>-11.6</td><td>-250.3</td><td></td><td></td></tr><tr><td>100.19</td><td>-70.7</td><td>-1.1</td><td>-250.9</td><td></td><td></td></tr><tr><td>100.09</td><td>-66.8</td><td>8.7</td><td>-250.6</td><td></td><td></td></tr><tr><td>100.05</td><td>-64.9</td><td>13.3</td><td>-250.0</td><td></td><td></td></tr><tr><td>99.05</td><td>-38.1</td><td>77.5</td><td>-199.6</td><td></td><td></td></tr><tr><td>98.05</td><td>-30.7</td><td>88.8</td><td>-113.0</td><td></td><td></td></tr><tr><td>97.85</td><td>-31.0</td><td>86.0</td><td>-95.6</td><td></td><td></td></tr><tr><td>97.05</td><td>-37.4</td><td>61.4</td><td>-35.1</td><td></td><td></td></tr><tr><td>96.10</td><td>-52.9</td><td>7.2</td><td>-0.4</td><td></td><td></td></tr><tr><td>96.00</td><td>-54.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table><div><div>Schnittgrößen (q,k)</div><table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th><th></th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th></th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-133.3</td><td></td></tr><tr><td>103.68</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.33</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.97</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table></div></div>						Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.10	0.0	0.0	0.0			106.09	-0.2	0.0	0.0			105.50	-11.4	-1.7	-0.3			105.50	-30.9	-1.7	-12.8			105.45	-31.8	-2.0	-12.9			105.05	-39.4	-6.2	-14.5			104.68	-46.4	-12.9	-17.9			104.35	-52.6	-16.1	-22.6			104.35	-52.6	-127.1	-22.6			104.05	-58.2	-131.0	-61.0			103.72	-64.5	-136.4	-105.4	-215.1		103.72	-64.5	78.8	-105.4			103.68	-65.3	78.1	-102.3			103.45	-70.9	68.7	-85.6			103.33	-74.4	61.7	-77.4			103.22	-78.2	52.7	-71.4			103.20	-79.0	50.6	-70.4			103.08	-84.8	35.0	-65.0			102.99	-89.8	20.4	-62.5			102.97	-90.8	17.5	-62.2			102.96	-91.8	14.5	-61.9			102.83	-99.3	-7.8	-61.5			102.71	-106.8	-30.4	-63.8			102.69	-108.0	-34.2	-64.5			102.64	-110.5	-41.7	-66.1			102.61	-112.5	-47.7	-67.6			102.55	-116.1	-58.5	-70.8			102.52	-117.7	-63.0	-72.6			102.39	-119.0	-74.1	-81.7			102.16	-120.0	-89.5	-100.2			102.09	-120.0	-93.3	-106.8			101.79	-118.7	-103.5	-136.3			101.69	-117.7	-104.7	-146.8			101.50	-114.9	-103.6	-167.3			101.22	-109.4	-95.0	-194.7			101.07	-105.3	-86.3	-208.9			100.75	-95.1	-62.2	-232.4			100.28	-74.9	-11.6	-250.3			100.19	-70.7	-1.1	-250.9			100.09	-66.8	8.7	-250.6			100.05	-64.9	13.3	-250.0			99.05	-38.1	77.5	-199.6			98.05	-30.7	88.8	-113.0			97.85	-31.0	86.0	-95.6			97.05	-37.4	61.4	-35.1			96.10	-52.9	7.2	-0.4			96.00	-54.2	0.0	0.0			Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.10	0.0	0.0	0.0			106.09	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.45	0.0	0.0	0.0			105.05	0.0	0.0	0.0			104.68	0.0	0.0	0.0			104.35	0.0	0.0	0.0			104.05	0.0	0.0	0.0			103.72	0.0	0.0	0.0	-133.3		103.68	0.0	0.0	0.0			103.45	0.0	0.0	0.0			103.33	0.0	0.0	0.0			103.22	0.0	0.0	0.0			103.20	0.0	0.0	0.0			103.08	0.0	0.0	0.0			102.99	0.0	0.0	0.0			102.97	0.0	0.0	0.0		
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.99</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr></table>						102.96	0.0	0.0	0.0	102.83	0.0	0.0	0.0	102.71	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.64	0.0	0.0	0.0	102.61	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.52	0.0	0.0	0.0	102.39	0.0	0.0	0.0	102.16	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.79	0.0	0.0	0.0	101.69	0.0	0.0	0.0	101.50	0.0	0.0	0.0	101.22	0.0	0.0	0.0	101.07	0.0	0.0	0.0	100.75	0.0	0.0	0.0	100.28	0.0	0.0	0.0	100.19	0.0	0.0	0.0	100.09	0.0	0.0	0.0	100.05	0.0	0.0	0.0	99.05	0.0	0.0	0.0	98.05	0.0	0.0	0.0	97.85	0.0	0.0	0.0	97.05	0.0	0.0	0.0	96.10	0.0	0.0	0.0	96.00	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-15.6	-	-	-	106.09	-15.6	-	-	-	106.09	-15.6	-	-	-	106.04	-15.4	-	-	-	105.55	-14.3	-	-	-	105.50	-14.2	-	-	-	105.50	-14.2	-	-	-	105.45	-14.0	-	-	-	105.45	-14.0	-	-	-	105.40	-13.9	-	-	-	105.10	-13.2	-	-	-	105.05	-13.1	-	-	-	105.05	-13.1	-	-	-	104.99	-13.0	-	-	-	104.73	-12.4	-	-	-	104.68	-12.2	-	-	-	104.68	-12.2	-	-	-	104.64	-12.1	-	-	-	104.40	-11.6	-	-	-	104.35	-11.5	-	-	-	104.35	-11.5	-	-	-	104.30	-11.3	-	-	-	104.10	-10.9	-	-	-	104.05	-10.8	-	-	-	104.05	-10.8	-	-	-	104.00	-10.7	-	-	-	103.77	-10.1	-	-	-	103.72	-10.0	-	-	-	103.72	-10.0	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.68	-9.9	-	-	-	103.50	-9.5	-	-	-	103.45	-9.4	-	-	-	103.45	-9.4	-	-	-	103.39	-9.3	-	-	-	103.39	-9.3	-	-	-	103.33	-9.1	-	-	-	103.33	-9.1	-	-	-
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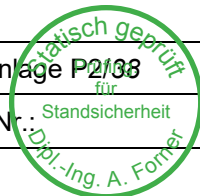
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102.55	-7.5	0.00	0.00	21.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.52	-7.4	0.00	0.00	22.52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.52	-7.4	2.89	21.35	21.35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.48	-7.3	2.89	21.08	24.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.43	-7.2	3.80	27.40	27.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.1	3.80	27.05	30.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.39	-7.1	4.28	30.42	30.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.34	-7.0	4.28	30.02	33.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.21	-6.7	6.37	42.88	42.87																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-6.6	6.37	42.28	45.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.16	-6.6	6.92	45.99	45.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-6.5	6.92	44.97	50.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.09	-6.5	7.85	50.95	50.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.04	-6.4	7.85	50.16	54.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.84	-6.0	11.36	68.06	68.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.79	-5.9	11.36	66.94	71.48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.79	-5.9	12.13	71.48	71.48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-5.8	12.13	70.27	74.97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.74	-5.8	12.94	74.98	74.97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.69	-5.7	12.94	73.69	78.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.69	-5.7	13.78	78.47	78.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.64	-5.6	13.78	77.15	81.85																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.55	-5.4	16.39	88.63	88.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.50	-5.3	16.39	87.09	92.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.50	-5.3	17.31	92.01	92.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.44	-5.2	17.31	90.21	95.80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.28	-4.9	21.86	107.16	107.16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-4.8	21.86	104.96	110.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.22	-4.8	23.11	110.95	110.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.17	-4.7	23.11	108.76	114.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.12	-4.6	25.62	118.17	118.16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.07	-4.5	25.62	115.78	121.77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.07	-4.5	26.95	121.78	121.77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.01	-4.4	26.95	119.30	125.38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.80	-4.1	34.37	139.83	139.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.75	-4.0	34.37	136.84	143.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage P2 Schnitt 7L			Seite Anlage P2/37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Kapitel:		4 LF 4 (BS-P)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 100.75 -4.0 36.02 143.43 143.42 100.70 -3.9 36.02 140.34 147.03 100.33 -3.3 50.00 166.27 172.29 100.28 -3.2 50.00 162.42 175.90 100.28 -3.2 50.00 162.42 175.90 100.24 -3.2 50.00 159.01 179.15 100.24 -3.2 50.00 159.01 179.15 100.19 -3.1 50.00 155.64 182.40 100.19 -3.1 50.00 155.64 182.40 100.14 -3.0 50.00 152.33 185.65 100.14 -3.0 50.00 152.33 185.65 100.09 -3.0 50.00 149.06 188.89 100.09 -3.0 50.00 149.06 188.89 100.05 -2.9 50.00 145.83 192.14 100.05 -2.9 50.00 145.83 192.14 100.00 -2.8 50.00 142.47 195.58 99.10 -1.8 50.00 90.53 257.54 99.05 -1.8 50.00 88.09 260.98 99.05 -1.8 50.00 88.09 260.98 99.00 -1.7 50.00 85.69 264.42 98.10 -1.0 50.00 48.71 326.37 98.05 -0.9 50.00 46.95 329.81 98.05 -0.9 50.00 46.95 329.81 98.00 -0.9 50.00 45.20 333.26 97.90 -0.8 50.00 41.78 340.14 97.85 -0.8 50.00 40.10 343.58 97.85 -0.8 50.00 40.10 343.58 97.80 -0.8 50.00 38.43 347.05 97.10 -0.3 50.00 16.72 395.54 97.05 -0.3 50.00 15.25 399.00 97.05 -0.3 50.00 15.25 399.00 97.00 -0.3 50.00 13.80 402.47 96.15 0.2 50.00 -10.36 461.36 96.10 0.2 50.00 -11.77 464.82 96.10 0.2 50.00 -11.77 464.82 96.05 0.3 50.00 -13.18 468.28 96.05 0.3 50.00 -13.18 468.28 96.00 0.3 50.00 -14.58 471.75 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03214377 Theoretischer Fußpunkt = 95.999 m</p> <p>Einbindetiefe tg = 6.55 m Profillänge = 10.10 m</p> </div> </div>		
Schnitt:	Anlage P2 Schnitt 7L	Seite Anlage P2/38
Kapitel:	4 LF 4 (BS-P)	Archiv Nr.: Standsicherheit
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig		-												
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_k = 191.12 \text{ kN/m}$</p> <p>$G'_{k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 19.50 \text{ kN/m}$</p> <p>$E_{av,k} = 94.70 \text{ kN/m}$ ($E_{ah,k} = 523.17 \text{ kN/m}$)</p> <p>$B_{v,k} = 185.37$</p> <p>Summe $V_{k} = 119.96 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 96.88 bis 93.36 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>102.52</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.52</td><td>96.00</td><td>55.00</td><td>s3: Flusssandes, -sand</td></tr></tbody></table> <p>Mantelfläche bis 96.00 m = 1.000 m²/m $\Rightarrow R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 358.60 / 1.40 = 256.14 \text{ kN/m}$</p> <p>$R_{d} = R_{b,d} + R_{s1,d} = 1121.19 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 258.01 - 0.00 + 120.75 + 26.33 = 405.09 \text{ kN/m}$</p> <p>$\Rightarrow \mu = V_{d} / R_{d} = 405.09 / 1121.19 = 0.36$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.52	0.00	S2: Auelehm (unter GS)	102.52	96.00	55.00	s3: Flusssandes, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm (unter GS)											
102.52	96.00	55.00	s3: Flusssandes, -sand											
Schnitt: Anlage P2 Schnitt 7L		Seite Anlage P2/39												
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 2004-0025												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Anlage Q2 Schnitt 8L

1 LF 1.1 (BS-T, ohne Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024

Bohrpfahlwand

=====

Teilsicherheitskonzept (EC 7)

EMG TBA 3.2 - Schnitt 8

Datei: 10_BS 8_LF1.1 (ohne Lasten).vrb

Datum: 20.06.2024

Indices:

d = Bemessungswert

k = charakteristisch

g = Ständig, einschließlich Wasserdruck

q = Veränderlich

g+q = Ständig + Veränderlich, einschließlich Wasserdruck

w = Wasserdruck

Wandkopf = 106.10 mNHN

Maximale Teilung bis Baugrubensohle: 0.050 m

Maximale Teilung unter Baugrubensohle: 0.050 m

Baugrubensohle = 105.75 mNHN

Bohrpfahldurchmesser = 0.88 m

Bohrpfahlabstand = 1.50 m

Anzahl unbew. Pfähle = 1

Grundwasserstand (Erdseite) = 105.50 mNHN

Grundwasserstand (Luftseite) = 105.00 mNHN

Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.

Teilsicherheiten

BS: DIN EN 1997-1: BS-T

gamma(G) = 1.20

gamma(G,Ruhe) = 1.10

gamma(Q) = 1.30

gamma(Ep) = 1.30

Anpassungsfaktor Erdwiderstand = 0.80

Lasten (zweiseitig begrenzt)

Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast
[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]
1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein
2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein
3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein
4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein
5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein
6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein
7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein

Steuerparameter = 0.50

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]
1	45.90	0.00	100.69	92.70	Ständig

Art des Fußlagers:

Profillänge automatisch und Fuß gebettet

Profillänge = 8.05 m

Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/1
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.35 5.000 5.000</div> <div>105.35 102.48 5.000 5.000</div> <div>102.48 101.85 50.000 50.000</div> <div>101.85 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 442.041 / 1136.366 = 0.389$</div> <div>Bettungslager $B_{h,d} = 442.041 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1136.366 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c(pas),k c(akt),k d(p)/phi d(a)/phi qc cu,k</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 101.85 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>4 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.35 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.48 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 101.85 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.100 105.750 0.000 2.591 0.00 0.00</div> <div>105.750 105.500 2.591 4.442 0.00 0.00</div> <div>105.500 105.350 4.442 5.027 0.00 1.50</div> <div>105.350 105.050 5.133 6.148 1.50 4.50</div> <div>105.050 105.000 6.148 6.317 4.50 5.00</div> <div>105.000 104.093 6.317 10.165 5.00 5.00</div> <div>104.093 103.085 10.165 14.441 5.00 5.00</div> <div>103.085 102.480 14.441 17.006 5.00 5.00</div> <div>102.480 102.432 13.302 13.500 5.00 5.00</div> <div>102.432 102.092 13.500 14.892 5.00 5.00</div> <div>102.092 101.850 14.892 15.886 5.00 5.00</div> <div>101.850 101.447 15.886 17.540 5.00 5.00</div> <div>101.447 101.094 17.540 18.987 5.00 5.00</div> <div>101.094 100.691 18.987 20.641 5.00 5.00</div> <div>100.691 100.265 66.544 76.374 5.00 5.00</div> <div>100.265 100.076 76.374 83.604 5.00 5.00</div> <div>100.076 99.839 83.604 92.642 5.00 5.00</div> <div>99.839 99.413 92.642 112.926 5.00 5.00</div> <div>99.413 99.110 112.926 129.155 5.00 5.00</div> <div>99.110 99.054 129.155 130.137 5.00 5.00</div> <div>99.054 98.997 130.137 131.120 5.00 5.00</div> <div>98.997 98.988 131.120 131.050 5.00 5.00</div> <div>98.988 98.561 131.050 129.338 5.00 5.00</div> <div>98.561 98.373 129.338 128.849 5.00 5.00</div> <div>98.373 98.136 128.849 122.623 5.00 5.00</div> <div>98.136 98.092 122.623 121.484 5.00 5.00</div> <div>98.092 98.049 121.484 120.345 5.00 5.00</div> <div>98.049 97.950 120.345 117.764 5.00 5.00</div> <div>97.950 97.636 117.764 116.163 5.00 5.00</div> <div>97.636 96.901 116.163 100.916 5.00 5.00</div> <div>96.901 96.162 100.916 88.742 5.00 5.00</div> <div>96.162 95.854 88.742 81.881 5.00 5.00</div>					
Schnitt:		Anlage Q2 Schnitt 8L		Seite Anlage Q2/2	
Kapitel:		1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																															
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<table><tr><td>95.854</td><td>95.426</td><td>81.881</td><td>76.536</td><td>5.00</td><td>5.00</td></tr><tr><td>95.426</td><td>94.807</td><td>76.536</td><td>67.247</td><td>5.00</td><td>5.00</td></tr><tr><td>94.807</td><td>93.759</td><td>67.247</td><td>58.489</td><td>5.00</td><td>5.00</td></tr><tr><td>93.759</td><td>92.968</td><td>58.489</td><td>55.319</td><td>5.00</td><td>5.00</td></tr><tr><td>92.968</td><td>92.711</td><td>55.319</td><td>54.231</td><td>5.00</td><td>5.00</td></tr><tr><td>92.711</td><td>92.700</td><td>54.231</td><td>54.210</td><td>5.00</td><td>5.00</td></tr><tr><td>92.700</td><td>89.216</td><td>54.210</td><td>67.705</td><td>5.00</td><td>5.00</td></tr><tr><td>89.216</td><td>80.000</td><td>67.705</td><td>105.505</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>105.75</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.35</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>101.85</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>105.75</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>105.50</td><td>0.00</td><td>-14.63</td></tr><tr><td>105.50</td><td>105.35</td><td>-14.63</td><td>-23.41</td></tr><tr><td>105.35</td><td>105.05</td><td>-21.41</td><td>-30.93</td></tr><tr><td>105.05</td><td>105.00</td><td>-30.93</td><td>-32.52</td></tr><tr><td>105.00</td><td>104.09</td><td>-32.52</td><td>-46.91</td></tr><tr><td>104.09</td><td>103.08</td><td>-46.91</td><td>-62.91</td></tr><tr><td>103.08</td><td>102.48</td><td>-62.91</td><td>-72.50</td></tr><tr><td>102.48</td><td>102.43</td><td>-129.24</td><td>-131.30</td></tr><tr><td>102.43</td><td>102.09</td><td>-131.30</td><td>-145.72</td></tr><tr><td>102.09</td><td>101.85</td><td>-145.72</td><td>-156.02</td></tr><tr><td>101.85</td><td>101.45</td><td>-156.02</td><td>-173.16</td></tr><tr><td>101.45</td><td>101.09</td><td>-173.16</td><td>-188.16</td></tr><tr><td>101.09</td><td>100.69</td><td>-188.16</td><td>-205.30</td></tr><tr><td>100.69</td><td>100.26</td><td>-205.30</td><td>-223.39</td></tr><tr><td>100.26</td><td>100.08</td><td>-223.39</td><td>-231.44</td></tr><tr><td>100.08</td><td>99.84</td><td>-231.44</td><td>-241.50</td></tr><tr><td>99.84</td><td>99.41</td><td>-241.50</td><td>-259.59</td></tr><tr><td>99.41</td><td>99.11</td><td>-259.59</td><td>-272.48</td></tr><tr><td>99.11</td><td>99.05</td><td>-272.48</td><td>-274.87</td></tr><tr><td>99.05</td><td>99.00</td><td>-274.87</td><td>-277.27</td></tr><tr><td>99.00</td><td>98.99</td><td>-277.27</td><td>-277.68</td></tr><tr><td>98.99</td><td>98.56</td><td>-277.68</td><td>-295.79</td></tr><tr><td>98.56</td><td>98.37</td><td>-295.79</td><td>-303.82</td></tr><tr><td>98.37</td><td>98.14</td><td>-303.82</td><td>-313.88</td></tr><tr><td>98.14</td><td>98.09</td><td>-313.88</td><td>-315.73</td></tr><tr><td>98.09</td><td>98.05</td><td>-315.73</td><td>-317.58</td></tr><tr><td>98.05</td><td>97.95</td><td>-317.58</td><td>-321.78</td></tr><tr><td>97.95</td><td>97.64</td><td>-321.78</td><td>-335.11</td></tr><tr><td>97.64</td><td>96.90</td><td>-335.11</td><td>-366.35</td></tr><tr><td>96.90</td><td>96.16</td><td>-366.35</td><td>-397.75</td></tr><tr><td>96.16</td><td>95.85</td><td>-397.75</td><td>-410.85</td></tr><tr><td>95.85</td><td>95.43</td><td>-410.85</td><td>-429.05</td></tr><tr><td>95.43</td><td>94.81</td><td>-429.05</td><td>-455.36</td></tr><tr><td>94.81</td><td>93.76</td><td>-455.36</td><td>-499.93</td></tr><tr><td>93.76</td><td>92.97</td><td>-499.93</td><td>-533.52</td></tr><tr><td>92.97</td><td>92.71</td><td>-533.52</td><td>-544.43</td></tr><tr><td>92.71</td><td>92.70</td><td>-544.43</td><td>-544.92</td></tr><tr><td>92.70</td><td>89.22</td><td>-544.92</td><td>-693.00</td></tr><tr><td>89.22</td><td>80.00</td><td>-693.00</td><td>-1084.69</td></tr></table>								95.854	95.426	81.881	76.536	5.00	5.00	95.426	94.807	76.536	67.247	5.00	5.00	94.807	93.759	67.247	58.489	5.00	5.00	93.759	92.968	58.489	55.319	5.00	5.00	92.968	92.711	55.319	54.231	5.00	5.00	92.711	92.700	54.231	54.210	5.00	5.00	92.700	89.216	54.210	67.705	5.00	5.00	89.216	80.000	67.705	105.505	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	105.75	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.35	5.005	5.388	30.000	-20.01	18.10	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	101.85	6.006	6.054	32.500	-21.68	16.35	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.10	105.75	0.00	0.00	105.75	105.50	0.00	-14.63	105.50	105.35	-14.63	-23.41	105.35	105.05	-21.41	-30.93	105.05	105.00	-30.93	-32.52	105.00	104.09	-32.52	-46.91	104.09	103.08	-46.91	-62.91	103.08	102.48	-62.91	-72.50	102.48	102.43	-129.24	-131.30	102.43	102.09	-131.30	-145.72	102.09	101.85	-145.72	-156.02	101.85	101.45	-156.02	-173.16	101.45	101.09	-173.16	-188.16	101.09	100.69	-188.16	-205.30	100.69	100.26	-205.30	-223.39	100.26	100.08	-223.39	-231.44	100.08	99.84	-231.44	-241.50	99.84	99.41	-241.50	-259.59	99.41	99.11	-259.59	-272.48	99.11	99.05	-272.48	-274.87	99.05	99.00	-274.87	-277.27	99.00	98.99	-277.27	-277.68	98.99	98.56	-277.68	-295.79	98.56	98.37	-295.79	-303.82	98.37	98.14	-303.82	-313.88	98.14	98.09	-313.88	-315.73	98.09	98.05	-315.73	-317.58	98.05	97.95	-317.58	-321.78	97.95	97.64	-321.78	-335.11	97.64	96.90	-335.11	-366.35	96.90	96.16	-366.35	-397.75	96.16	95.85	-397.75	-410.85	95.85	95.43	-410.85	-429.05	95.43	94.81	-429.05	-455.36	94.81	93.76	-455.36	-499.93	93.76	92.97	-499.93	-533.52	92.97	92.71	-533.52	-544.43	92.71	92.70	-544.43	-544.92	92.70	89.22	-544.92	-693.00	89.22	80.00	-693.00	-1084.69
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98.56	98.37	-295.79	-303.82																																																																																																																																																																																																																																																																																		
98.37	98.14	-303.82	-313.88																																																																																																																																																																																																																																																																																		
98.14	98.09	-313.88	-315.73																																																																																																																																																																																																																																																																																		
98.09	98.05	-315.73	-317.58																																																																																																																																																																																																																																																																																		
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97.95	97.64	-321.78	-335.11																																																																																																																																																																																																																																																																																		
97.64	96.90	-335.11	-366.35																																																																																																																																																																																																																																																																																		
96.90	96.16	-366.35	-397.75																																																																																																																																																																																																																																																																																		
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95.43	94.81	-429.05	-455.36																																																																																																																																																																																																																																																																																		
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93.76	92.97	-499.93	-533.52																																																																																																																																																																																																																																																																																		
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92.71	92.70	-544.43	-544.92																																																																																																																																																																																																																																																																																		
92.70	89.22	-544.92	-693.00																																																																																																																																																																																																																																																																																		
89.22	80.00	-693.00	-1084.69																																																																																																																																																																																																																																																																																		
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Statisch geprüft
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Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																								
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<div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>-7.8</td><td>-0.5</td><td>-0.1</td></tr><tr><td>105.50</td><td>-13.2</td><td>-0.8</td><td>-0.2</td></tr><tr><td>105.35</td><td>-16.5</td><td>-1.2</td><td>-0.4</td></tr><tr><td>105.05</td><td>-23.0</td><td>-3.0</td><td>-1.0</td></tr><tr><td>105.00</td><td>-24.1</td><td>-3.5</td><td>-1.1</td></tr><tr><td>104.09</td><td>-43.9</td><td>-13.6</td><td>-8.6</td></tr><tr><td>103.08</td><td>-65.8</td><td>-29.0</td><td>-29.7</td></tr><tr><td>102.48</td><td>-79.0</td><td>-40.2</td><td>-50.6</td></tr><tr><td>102.43</td><td>-80.0</td><td>-40.9</td><td>-52.5</td></tr><tr><td>102.09</td><td>-87.4</td><td>-28.0</td><td>-64.2</td></tr><tr><td>101.85</td><td>-92.7</td><td>-18.2</td><td>-69.8</td></tr><tr><td>101.45</td><td>-101.4</td><td>-0.8</td><td>-73.7</td></tr><tr><td>101.09</td><td>-109.1</td><td>15.8</td><td>-71.1</td></tr><tr><td>100.69</td><td>-117.9</td><td>36.9</td><td>-60.6</td></tr><tr><td>100.26</td><td>-127.2</td><td>37.4</td><td>-44.7</td></tr><tr><td>100.08</td><td>-131.3</td><td>37.1</td><td>-37.6</td></tr><tr><td>99.84</td><td>-136.4</td><td>35.5</td><td>-29.0</td></tr><tr><td>99.41</td><td>-145.7</td><td>28.9</td><td>-15.1</td></tr><tr><td>99.11</td><td>-152.3</td><td>20.5</td><td>-7.5</td></tr><tr><td>99.05</td><td>-153.5</td><td>18.6</td><td>-6.4</td></tr><tr><td>99.00</td><td>-154.8</td><td>16.8</td><td>-5.4</td></tr><tr><td>98.99</td><td>-155.0</td><td>16.5</td><td>-5.3</td></tr><tr><td>98.56</td><td>-164.2</td><td>5.2</td><td>-0.8</td></tr><tr><td>98.37</td><td>-168.3</td><td>1.9</td><td>-0.2</td></tr><tr><td>98.14</td><td>-173.5</td><td>0.0</td><td>0.0</td></tr><tr><td>98.09</td><td>-174.4</td><td>-0.1</td><td>0.0</td></tr><tr><td>98.05</td><td>-175.4</td><td>0.0</td><td>0.0</td></tr></tbody></table> <div>Schnittgrößen ([g+q+w],k)</div> 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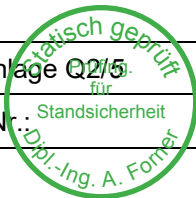
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<table><tr><td>105.05</td><td>-20.1</td><td>-2.7</td><td>-0.9</td></tr><tr><td>105.00</td><td>-21.0</td><td>-3.1</td><td>-1.0</td></tr><tr><td>104.09</td><td>-38.2</td><td>-11.8</td><td>-7.5</td></tr><tr><td>103.08</td><td>-57.2</td><td>-25.0</td><td>-25.7</td></tr><tr><td>102.48</td><td>-68.7</td><td>-34.6</td><td>-43.7</td></tr><tr><td>102.43</td><td>-69.6</td><td>-35.3</td><td>-45.4</td></tr><tr><td>102.09</td><td>-76.0</td><td>-24.1</td><td>-55.5</td></tr><tr><td>101.85</td><td>-80.6</td><td>-15.7</td><td>-60.3</td></tr><tr><td>101.45</td><td>-88.2</td><td>-0.7</td><td>-63.7</td></tr><tr><td>101.09</td><td>-94.9</td><td>13.7</td><td>-61.4</td></tr><tr><td>100.69</td><td>-102.6</td><td>32.0</td><td>-52.3</td></tr><tr><td>100.26</td><td>-110.6</td><td>32.4</td><td>-38.6</td></tr><tr><td>100.08</td><td>-114.2</td><td>32.0</td><td>-32.5</td></tr><tr><td>99.84</td><td>-118.7</td><td>30.7</td><td>-25.0</td></tr><tr><td>99.41</td><td>-126.7</td><td>25.0</td><td>-13.0</td></tr><tr><td>99.11</td><td>-132.5</td><td>17.7</td><td>-6.5</td></tr><tr><td>99.05</td><td>-133.5</td><td>16.1</td><td>-5.5</td></tr><tr><td>99.00</td><td>-134.6</td><td>14.4</td><td>-4.6</td></tr><tr><td>98.99</td><td>-134.8</td><td>14.2</td><td>-4.5</td></tr><tr><td>98.56</td><td>-142.8</td><td>4.5</td><td>-0.7</td></tr><tr><td>98.37</td><td>-146.4</td><td>1.6</td><td>-0.1</td></tr><tr><td>98.14</td><td>-150.9</td><td>-0.1</td><td>0.0</td></tr><tr><td>98.09</td><td>-151.7</td><td>-0.1</td><td>0.0</td></tr><tr><td>98.05</td><td>-152.5</td><td>0.0</td><td>0.0</td></tr></table> <p>Schnittgrößen (q,k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.35</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.08</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.48</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.43</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.85</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.26</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.08</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.84</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.00</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.99</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.56</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.37</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.14</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.09</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <p>Weggrößen ([g+q],k)</p> <p>berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-0.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-0.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-0.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-0.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-0.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-0.6</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-0.6</td><td>5.00</td><td>3.09</td><td>19.02</td></tr><tr><td>105.50</td><td>-0.6</td><td>5.00</td><td>3.11</td><td>23.77</td></tr><tr><td>105.50</td><td>-0.6</td><td>5.00</td><td>3.11</td><td>23.77</td></tr><tr><td>105.45</td><td>-0.6</td><td>5.00</td><td>3.14</td><td>28.53</td></tr></table>						105.05	-20.1	-2.7	-0.9	105.00	-21.0	-3.1	-1.0	104.09	-38.2	-11.8	-7.5	103.08	-57.2	-25.0	-25.7	102.48	-68.7	-34.6	-43.7	102.43	-69.6	-35.3	-45.4	102.09	-76.0	-24.1	-55.5	101.85	-80.6	-15.7	-60.3	101.45	-88.2	-0.7	-63.7	101.09	-94.9	13.7	-61.4	100.69	-102.6	32.0	-52.3	100.26	-110.6	32.4	-38.6	100.08	-114.2	32.0	-32.5	99.84	-118.7	30.7	-25.0	99.41	-126.7	25.0	-13.0	99.11	-132.5	17.7	-6.5	99.05	-133.5	16.1	-5.5	99.00	-134.6	14.4	-4.6	98.99	-134.8	14.2	-4.5	98.56	-142.8	4.5	-0.7	98.37	-146.4	1.6	-0.1	98.14	-150.9	-0.1	0.0	98.09	-151.7	-0.1	0.0	98.05	-152.5	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.10	0.0	0.0	0.0	105.75	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.35	0.0	0.0	0.0	105.05	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.09	0.0	0.0	0.0	103.08	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.43	0.0	0.0	0.0	102.09	0.0	0.0	0.0	101.85	0.0	0.0	0.0	101.45	0.0	0.0	0.0	101.09	0.0	0.0	0.0	100.69	0.0	0.0	0.0	100.26	0.0	0.0	0.0	100.08	0.0	0.0	0.0	99.84	0.0	0.0	0.0	99.41	0.0	0.0	0.0	99.11	0.0	0.0	0.0	99.05	0.0	0.0	0.0	99.00	0.0	0.0	0.0	98.99	0.0	0.0	0.0	98.56	0.0	0.0	0.0	98.37	0.0	0.0	0.0	98.14	0.0	0.0	0.0	98.09	0.0	0.0	0.0	98.05	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-0.6	-	-	-	106.05	-0.6	-	-	-	105.80	-0.6	-	-	-	105.75	-0.6	0.00	0.00	0.00	105.75	-0.6	0.00	0.00	0.00	105.70	-0.6	0.00	0.00	4.75	105.55	-0.6	5.00	3.09	19.02	105.50	-0.6	5.00	3.11	23.77	105.50	-0.6	5.00	3.11	23.77	105.45	-0.6	5.00	3.14	28.53
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105.50	-0.6	5.00	3.11	23.77																																																																																																																																																																																																																																																																																					
105.50	-0.6	5.00	3.11	23.77																																																																																																																																																																																																																																																																																					
105.45	-0.6	5.00	3.14	28.53																																																																																																																																																																																																																																																																																					
Schnitt: Anlage Q2 Schnitt 8L				Seite Anlage Q2/5																																																																																																																																																																																																																																																																																					
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)				Archiv Nr.: 2104																																																																																																																																																																																																																																																																																					
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																							

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div>105.40</div> <div>-0.6</div> <div>5.00</div> <div>3.17</div> <div>33.28</div> </div> <div> <div>105.35</div> <div>-0.6</div> <div>5.00</div> <div>3.20</div> <div>38.04</div> </div> <div> <div>105.35</div> <div>-0.6</div> <div>5.00</div> <div>3.20</div> <div>34.79</div> </div> <div> <div>105.30</div> <div>-0.6</div> <div>5.00</div> <div>3.22</div> <div>37.37</div> </div> <div> <div>105.10</div> <div>-0.7</div> <div>5.00</div> <div>3.33</div> <div>47.68</div> </div> <div> <div>105.05</div> <div>-0.7</div> <div>5.00</div> <div>3.36</div> <div>50.26</div> </div> <div> <div>105.05</div> <div>-0.7</div> <div>5.00</div> <div>3.36</div> <div>50.26</div> </div> <div> <div>105.00</div> <div>-0.7</div> <div>5.00</div> <div>3.39</div> <div>52.84</div> </div> <div> <div>105.00</div> <div>-0.7</div> <div>5.00</div> <div>3.39</div> <div>52.84</div> </div> <div> <div>104.95</div> <div>-0.7</div> <div>5.00</div> <div>3.42</div> <div>54.14</div> </div> <div> <div>104.14</div> <div>-0.8</div> <div>5.00</div> <div>3.86</div> <div>74.93</div> </div> <div> <div>104.09</div> <div>-0.8</div> <div>5.00</div> <div>3.89</div> <div>76.23</div> </div> <div> <div>104.09</div> <div>-0.8</div> <div>5.00</div> <div>3.89</div> <div>76.23</div> </div> <div> <div>104.04</div> <div>-0.8</div> <div>5.00</div> <div>3.92</div> <div>77.53</div> </div> <div> <div>103.14</div> <div>-0.9</div> <div>5.00</div> <div>4.49</div> <div>100.92</div> </div> <div> <div>103.08</div> <div>-0.9</div> <div>5.00</div> <div>4.53</div> <div>102.22</div> </div> <div> <div>103.08</div> <div>-0.9</div> <div>5.00</div> <div>4.53</div> <div>102.22</div> </div> <div> <div>103.03</div> <div>-0.9</div> <div>5.00</div> <div>4.56</div> <div>103.52</div> </div> <div> <div>102.53</div> <div>-1.0</div> <div>5.00</div> <div>4.96</div> <div>116.52</div> </div> <div> <div>102.48</div> <div>-1.0</div> <div>5.00</div> <div>5.00</div> <div>117.82</div> </div> <div> <div>102.48</div> <div>-1.0</div> <div>5.00</div> <div>5.00</div> <div>210.02</div> </div> <div> <div>102.43</div> <div>-1.0</div> <div>5.00</div> <div>5.05</div> <div>213.37</div> </div> <div> <div>102.43</div> <div>-1.0</div> <div>50.00</div> <div>50.46</div> <div>213.37</div> </div> <div> <div>102.38</div> <div>-1.0</div> <div>50.00</div> <div>50.90</div> <div>216.72</div> </div> <div> <div>102.14</div> <div>-1.1</div> <div>50.00</div> <div>53.25</div> <div>233.45</div> </div> <div> <div>102.09</div> <div>-1.1</div> <div>50.00</div> <div>53.76</div> <div>236.80</div> </div> <div> <div>102.09</div> <div>-1.1</div> <div>50.00</div> <div>53.76</div> <div>236.80</div> </div> <div> <div>102.04</div> <div>-1.1</div> <div>50.00</div> <div>54.27</div> <div>240.14</div> </div> <div> <div>101.90</div> <div>-1.1</div> <div>50.00</div> <div>55.88</div> <div>250.19</div> </div> <div> <div>101.85</div> <div>-1.1</div> <div>50.00</div> <div>56.44</div> <div>253.53</div> </div> <div> <div>101.85</div> <div>-1.1</div> <div>50.00</div> <div>56.44</div> <div>253.53</div> </div> <div> <div>101.80</div> <div>-1.1</div> <div>50.00</div> <div>57.03</div> <div>257.01</div> </div> <div> <div>101.50</div> <div>-1.2</div> <div>50.00</div> <div>60.88</div> <div>277.91</div> </div> <div> <div>101.45</div> <div>-1.2</div> <div>50.00</div> <div>61.57</div> <div>281.39</div> </div> <div> <div>101.45</div> <div>-1.2</div> <div>50.00</div> <div>61.57</div> <div>281.39</div> </div> <div> <div>101.40</div> <div>-1.2</div> <div>50.00</div> <div>62.28</div> <div>284.87</div> </div> <div> <div>101.14</div> <div>-1.3</div> <div>50.00</div> <div>66.00</div> <div>302.28</div> </div> <div> <div>101.09</div> <div>-1.3</div> <div>50.00</div> <div>66.78</div> <div>305.76</div> </div> <div> <div>101.09</div> <div>-1.3</div> <div>50.00</div> <div>66.78</div> <div>305.76</div> </div> <div> <div>101.04</div> <div>-1.4</div> <div>50.00</div> <div>67.58</div> <div>309.24</div> </div> <div> <div>100.74</div> <div>-1.5</div> <div>50.00</div> <div>72.64</div> <div>330.13</div> </div> <div> <div>100.69</div> <div>-1.5</div> <div>50.00</div> <div>73.52</div> <div>333.61</div> </div> <div> <div>100.69</div> <div>-1.5</div> <div>50.00</div> <div>73.52</div> <div>333.61</div> </div> <div> <div>100.69</div> <div>-1.5</div> <div>50.00</div> <div>73.53</div> <div>333.65</div> </div> <div> <div>100.69</div> <div>-1.5</div> <div>50.00</div> <div>73.53</div> <div>333.65</div> </div> <div> <div>100.64</div> <div>-1.5</div> <div>50.00</div> <div>74.37</div> <div>336.91</div> </div> <div> <div>100.31</div> <div>-1.6</div> <div>50.00</div> <div>80.50</div> <div>359.74</div> </div> <div> <div>100.26</div> <div>-1.6</div> <div>50.00</div> <div>81.41</div> <div>363.00</div> </div> <div> <div>100.26</div> <div>-1.6</div> <div>50.00</div> <div>81.41</div> <div>363.00</div> </div> <div> <div>100.22</div> <div>-1.6</div> <div>50.00</div> <div>82.33</div> <div>366.28</div> </div> <div> <div>100.12</div> <div>-1.7</div> <div>50.00</div> <div>84.19</div> <div>372.82</div> </div> <div> <div>100.08</div> <div>-1.7</div> <div>50.00</div> <div>85.12</div> <div>376.09</div> </div> <div> <div>100.08</div> <div>-1.7</div> <div>50.00</div> <div>85.12</div> <div>376.09</div> </div> <div> <div>100.03</div> <div>-1.7</div> <div>50.00</div> <div>86.07</div> <div>379.36</div> </div> <div> <div>99.89</div> <div>-1.8</div> <div>50.00</div> <div>88.94</div> <div>389.17</div> </div> <div> <div>99.84</div> <div>-1.8</div> <div>50.00</div> <div>89.90</div> <div>392.44</div> </div> <div> <div>99.84</div> <div>-1.8</div> <div>50.00</div> <div>89.90</div> <div>392.44</div> </div> <div> <div>99.79</div> <div>-1.8</div> <div>50.00</div> <div>90.87</div> <div>395.71</div> </div> <div> <div>99.46</div> <div>-2.0</div> <div>50.00</div> <div>97.77</div> <div>418.57</div> </div> <div> <div>99.41</div> <div>-2.0</div> <div>50.00</div> <div>98.77</div> <div>421.83</div> </div> <div> <div>99.41</div> <div>-2.0</div> <div>50.00</div> <div>98.77</div> <div>421.83</div> </div> <div> <div>99.36</div> <div>-2.0</div> <div>50.00</div> <div>99.84</div> <div>425.32</div> </div> <div> <div>99.16</div> <div>-2.1</div> <div>50.00</div> <div>104.14</div> <div>439.28</div> </div> <div> <div>99.11</div> <div>-2.1</div> <div>50.00</div> <div>105.22</div> <div>442.77</div> </div> <div> <div>99.11</div> <div>-2.1</div> <div>50.00</div> <div>105.22</div> <div>442.77</div> </div> <div> <div>99.05</div> <div>-2.1</div> <div>50.00</div> <div>106.43</div> <div>446.67</div> </div> <div> <div>99.05</div> <div>-2.1</div> <div>50.00</div> <div>106.43</div> <div>446.67</div> </div> <div> <div>99.00</div> <div>-2.2</div> <div>50.00</div> <div>107.64</div> <div>450.57</div> </div> <div> <div>99.00</div> <div>-2.2</div> <div>50.00</div> <div>107.64</div> <div>450.57</div> </div> <div> <div>98.99</div> <div>-2.2</div> <div>50.00</div> <div>107.84</div> <div>451.22</div> </div> <div> <div>98.99</div> <div>-2.2</div> <div>50.00</div> <div>107.84</div> <div>451.22</div> </div>		
Schnitt:	Anlage Q2 Schnitt 8L	Seite Anlage Q2/6
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																				
Auftraggeber: Stadtverwaltung Leipzig																						
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																				
<div><div><div><div><div>98.94</div><div>-2.2</div><div>50.00</div><div>108.86</div><div>454.50</div></div><div><div>98.61</div><div>-2.3</div><div>50.00</div><div>115.99</div><div>477.39</div></div><div><div>98.56</div><div>-2.3</div><div>50.00</div><div>117.01</div><div>480.66</div></div><div><div>98.56</div><div>-2.3</div><div>50.00</div><div>117.01</div><div>480.66</div></div><div><div>98.51</div><div>-2.4</div><div>50.00</div><div>118.02</div><div>483.92</div></div><div><div>98.42</div><div>-2.4</div><div>50.00</div><div>120.06</div><div>490.44</div></div><div><div>98.37</div><div>-2.4</div><div>50.00</div><div>121.07</div><div>493.70</div></div><div><div>98.37</div><div>-2.4</div><div>50.00</div><div>121.07</div><div>493.70</div></div><div><div>98.33</div><div>-2.4</div><div>50.00</div><div>122.09</div><div>496.97</div></div><div><div>98.18</div><div>-2.5</div><div>50.00</div><div>125.15</div><div>506.78</div></div><div><div>98.14</div><div>-2.5</div><div>50.00</div><div>126.17</div><div>510.05</div></div><div><div>98.14</div><div>-2.5</div><div>50.00</div><div>126.17</div><div>510.05</div></div><div><div>98.09</div><div>-2.5</div><div>50.00</div><div>127.11</div><div>513.06</div></div><div><div>98.09</div><div>-2.5</div><div>50.00</div><div>127.11</div><div>513.06</div></div><div><div>98.05</div><div>-2.6</div><div>50.00</div><div>128.04</div><div>516.07</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.02467356 Theoretischer Fußpunkt = 98.049 m</div><div>Einbindetiefe tg = 7.70 m Profillänge = 8.05 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 152.33 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 66.86 kN/m (Eah,k = 346.81 kN/m) Bv,k = 150.64 Summe V,k = 68.56 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung <table><tr><th>von</th><th>bis</th><th>qs,k [kN/m²]</th><th>Bezeichnung</th></tr><tr><td>105.75</td><td>105.35</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.35</td><td>102.48</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>102.48</td><td>101.85</td><td>55.00</td><td>s3: Flussskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 243.65 / 1.40 = 174.04 kN/m Rd = Rb,d + Rs1,d = 1039.08 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 182.80 - 0.00 + 76.89 + 0.00 = 259.69 kN/m ==> µ = V,d / Rd = 259.69 / 1039.08 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	105.75	105.35	0.00	S1: Auffüllungen	105.35	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flussskies, -sand (über GS)	101.85	98.05	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung																			
105.75	105.35	0.00	S1: Auffüllungen																			
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101.85	98.05	55.00	s3: Flussskies, -sand																			
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/7																				
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 179																				
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																				

Statisch geprüft

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Standssicherheit

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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																						
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<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 11_BS 8_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (zweiseitig begrenzt)</div> <table><thead><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>2.40</td><td>5.83</td><td>8.06</td><td>101.85</td><td>98.14</td><td>92.71</td><td>92.97</td><td>89.22</td><td>nein</td></tr><tr><td>2</td><td>117.47</td><td>1.82</td><td>2.49</td><td>101.85</td><td>100.69</td><td>99.00</td><td>99.11</td><td>97.95</td><td>nein</td></tr><tr><td>3</td><td>97.83</td><td>2.49</td><td>3.16</td><td>101.85</td><td>100.26</td><td>97.95</td><td>98.37</td><td>96.90</td><td>nein</td></tr><tr><td>4</td><td>78.17</td><td>3.16</td><td>3.83</td><td>101.85</td><td>99.84</td><td>96.90</td><td>97.64</td><td>95.85</td><td>nein</td></tr><tr><td>5</td><td>58.52</td><td>3.83</td><td>4.49</td><td>101.85</td><td>99.41</td><td>95.85</td><td>96.90</td><td>94.81</td><td>nein</td></tr><tr><td>6</td><td>38.88</td><td>4.49</td><td>5.16</td><td>101.85</td><td>98.99</td><td>94.81</td><td>96.16</td><td>93.76</td><td>nein</td></tr><tr><td>7</td><td>19.22</td><td>5.16</td><td>5.83</td><td>101.85</td><td>98.56</td><td>93.76</td><td>95.43</td><td>92.71</td><td>nein</td></tr><tr><td>8</td><td>10.00</td><td>0.00</td><td>3.17</td><td>106.10</td><td>106.10</td><td>106.10</td><td>103.23</td><td>101.88</td><td>nein</td></tr></tbody></table> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke</div> <table><thead><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr></tbody></table> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.05 m</div>			Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein	2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein	3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein	4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein	5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein	6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein	7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein	8	10.00	0.00	3.17	106.10	106.10	106.10	103.23	101.88	nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	45.90	0.00	100.69	92.70	Ständig
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Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.35 5.000 5.000</div> <div>105.35 102.48 5.000 5.000</div> <div>102.48 101.85 50.000 50.000</div> <div>101.85 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 461.135 / 1136.366 = 0.406$</div> <div>Bettungslager $B_{h,d} = 461.135 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1136.366 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c(pas),k c(akt),k d(p)/phi d(a)/phi qc cu,k</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 101.85 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>4 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.35 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.48 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 101.85 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.100 106.097 0.000 3.915 0.00 0.00</div> <div>106.097 105.750 3.915 6.488 0.00 0.00</div> <div>105.750 105.500 6.488 8.339 0.00 0.00</div> <div>105.500 105.350 8.339 8.924 0.00 1.50</div> <div>105.350 105.050 9.800 11.076 1.50 4.50</div> <div>105.050 105.000 11.076 11.289 4.50 5.00</div> <div>105.000 104.090 11.289 15.160 5.00 5.00</div> <div>104.090 103.231 15.160 18.816 5.00 5.00</div> <div>103.231 103.081 18.816 18.898 5.00 5.00</div> <div>103.081 102.480 18.898 19.225 5.00 5.00</div> <div>102.480 102.430 14.883 14.956 5.00 5.00</div> <div>102.430 102.081 14.956 15.464 5.00 5.00</div> <div>102.081 101.882 15.464 15.755 5.00 5.00</div> <div>101.882 101.850 15.755 15.886 5.00 5.00</div> <div>101.850 101.497 15.886 17.333 5.00 5.00</div> <div>101.497 101.094 17.333 18.987 5.00 5.00</div> <div>101.094 100.691 18.987 20.641 5.00 5.00</div> <div>100.691 100.265 66.544 76.374 5.00 5.00</div> <div>100.265 100.076 76.374 83.604 5.00 5.00</div> <div>100.076 99.839 83.604 92.642 5.00 5.00</div> <div>99.839 99.413 92.642 112.926 5.00 5.00</div> <div>99.413 99.110 112.926 129.155 5.00 5.00</div> <div>99.110 99.054 129.155 130.137 5.00 5.00</div> <div>99.054 98.997 130.137 131.120 5.00 5.00</div> <div>98.997 98.988 131.120 131.050 5.00 5.00</div> <div>98.988 98.561 131.050 129.338 5.00 5.00</div> <div>98.561 98.373 129.338 128.849 5.00 5.00</div> <div>98.373 98.136 128.849 122.623 5.00 5.00</div> <div>98.136 98.092 122.623 121.484 5.00 5.00</div> <div>98.092 98.049 121.484 120.345 5.00 5.00</div> <div>98.049 97.950 120.345 117.764 5.00 5.00</div> <div>97.950 97.636 117.764 116.163 5.00 5.00</div>		
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/9
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
<div><div><div>97.63696.901116.163100.9165.005.00</div><div>96.90196.162100.91688.7425.005.00</div><div>96.16295.85488.74281.8815.005.00</div><div>95.85495.42681.88176.5365.005.00</div><div>95.42694.80776.53667.2475.005.00</div><div>94.80793.75967.24758.4895.005.00</div><div>93.75992.96858.48955.3195.005.00</div><div>92.96892.71155.31954.2315.005.00</div><div>92.71192.70054.23154.2105.005.00</div><div>92.70089.21654.21067.7055.005.00</div><div>89.21680.00067.705105.5055.005.00</div></div><div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><div>w(oben)w(unten)z(oben)z(unten)</div><div>[kN/m²][kN/m²][mNHN][mNHN]</div><div>0.000.00106.10105.75</div></div><div><div>Passive Erddruckbeiwerte</div><div>bestimmt nach: DIN 4085:2017</div><div>SchichtUKkpghkpchphi,kdeltatheta</div><div>[-][mNHN][-][°][°]</div><div>1105.355.0055.38830.000-20.0118.10</div><div>2102.483.0343.91122.500-15.0123.23</div><div>3101.856.0066.05432.500-21.6816.35</div><div>480.006.0066.05432.500-21.6816.35</div></div><div><div>Passive Erddruckordinaten (Bemessungswerte)</div><div>Teilsicherheit Erdwiderstand = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div>vonbisobenunten</div><div>[mNHN][mNHN][kN/m²][kN/m²]</div><div>106.10105.750.000.00</div><div>105.75105.500.00-14.63</div><div>105.50105.35-14.63-23.41</div><div>105.35105.05-21.41-30.93</div><div>105.05105.00-30.93-32.52</div><div>105.00104.09-32.52-46.95</div><div>104.09103.23-46.95-60.59</div><div>103.23103.08-60.59-62.97</div><div>103.08102.48-62.97-72.50</div><div>102.48102.43-129.24-131.36</div><div>102.43102.08-131.36-146.19</div><div>102.08101.88-146.19-154.67</div><div>101.88101.85-154.67-156.02</div><div>101.85101.50-156.02-171.02</div><div>101.50101.09-171.02-188.16</div><div>101.09100.69-188.16-205.30</div><div>100.69100.26-205.30-223.39</div><div>100.26100.08-223.39-231.44</div><div>100.0899.84-231.44-241.50</div><div>99.8499.41-241.50-259.59</div><div>99.4199.11-259.59-272.48</div><div>99.1199.05-272.48-274.87</div><div>99.0599.00-274.87-277.27</div><div>99.0098.99-277.27-277.68</div><div>98.9998.56-277.68-295.79</div><div>98.5698.37-295.79-303.82</div><div>98.3798.14-303.82-313.88</div><div>98.1498.09-313.88-315.73</div><div>98.0998.05-315.73-317.58</div><div>98.0597.95-317.58-321.78</div><div>97.9597.64-321.78-335.11</div><div>97.6496.90-335.11-366.35</div><div>96.9096.16-366.35-397.75</div><div>96.1695.85-397.75-410.85</div><div>95.8595.43-410.85-429.05</div><div>95.4394.81-429.05-455.36</div><div>94.8193.76-455.36-499.93</div><div>93.7692.97-499.93-533.52</div><div>92.9792.71-533.52-544.43</div></div></div> <div><div>Schnitt:</div><div>Anlage Q2</div><div>Schnitt 8L</div></div> <div><div>Seite Anlage</div><div>Q2/10</div></div> <div><div>Kapitel:</div><div>2</div><div>LF 1.2 (BS-T, mit Lasten)</div></div> <div><div>Archiv Nr.:</div><div></div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div></div> <div><div>Projekt-Nr.:</div><div>2004-0025</div></div> <div><div>Statisch geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. A. Forner</div></div>							



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 92.71 92.70 -544.43 -544.92 92.70 89.22 -544.92 -693.00 89.22 80.00 -693.00 -1084.69 </div> <div> Schnittgrößen (Bemessungswerte) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 106.10 0.0 0.0 0.0 106.10 -0.1 0.0 0.0 105.75 -8.4 -2.1 -0.3 105.50 -13.4 -2.7 -1.0 105.35 -16.2 -3.1 -1.4 105.05 -22.1 -5.4 -2.6 105.00 -23.1 -5.9 -2.9 104.09 -41.0 -18.1 -13.5 103.23 -58.0 -33.6 -35.5 103.08 -60.9 -36.6 -40.7 102.48 -72.8 -49.0 -66.4 102.43 -73.8 -49.8 -68.9 102.08 -71.1 -31.9 -83.1 101.88 -69.5 -21.5 -88.5 101.85 -69.2 -19.9 -89.1 101.50 -66.1 -1.3 -92.9 101.09 -61.9 20.6 -89.0 100.69 -57.0 43.6 -76.1 100.26 -50.8 45.2 -57.2 100.08 -47.6 45.0 -48.6 99.84 -43.3 43.5 -38.1 99.41 -34.5 36.2 -20.9 99.11 -27.3 26.8 -11.3 99.05 -25.9 24.7 -9.8 99.00 -24.5 22.6 -8.5 98.99 -24.2 22.3 -8.3 98.56 -12.5 8.9 -1.8 98.37 -6.8 4.4 -0.6 98.14 0.8 0.6 0.0 98.09 2.2 0.3 0.0 98.05 3.7 0.0 0.0 </div> <div> Schnittgrößen ([g+q+w],k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 106.10 0.0 0.0 0.0 106.10 0.0 0.0 0.0 105.75 -7.3 -1.8 -0.3 105.50 -11.6 -2.4 -0.8 105.35 -14.1 -2.7 -1.2 105.05 -19.2 -4.7 -2.3 105.00 -20.1 -5.2 -2.6 104.09 -35.7 -15.7 -11.8 103.23 -50.4 -29.0 -30.7 103.08 -53.0 -31.7 -35.3 102.48 -63.4 -42.3 -57.5 102.43 -64.2 -43.0 -59.6 102.08 -61.9 -27.5 -71.9 101.88 -60.4 -18.6 -76.5 101.85 -60.2 -17.2 -77.1 101.50 -57.5 -1.1 -80.3 101.09 -53.9 17.8 -77.0 100.69 -49.6 37.8 -65.8 100.26 -44.2 39.1 -49.4 100.08 -41.4 38.9 -42.0 99.84 -37.7 37.6 -32.9 99.41 -30.0 31.3 -18.1 99.11 -23.8 23.2 -9.7 99.05 -22.5 21.4 -8.5 99.00 -21.3 19.6 -7.3 98.99 -21.1 19.2 -7.1 98.56 -10.9 7.6 -1.5 98.37 -5.9 3.7 -0.5 98.14 0.6 0.5 0.0 </div> </div>		
Schnitt:	Anlage Q2 Schnitt 8L	Seite Anlage Q2/11
Kapitel:	2 LF 1.2 (BS-T, mit Lasten)	Archiv Nr. 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																													
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<div><div>98.050.00.00.0</div><div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div><table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.10</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-1.4</td><td>5.00</td><td>6.98</td><td>19.02</td></tr><tr><td>105.50</td><td>-1.4</td><td>5.00</td><td>6.96</td><td>23.77</td></tr><tr><td>105.50</td><td>-1.4</td><td>5.00</td><td>6.96</td><td>23.77</td></tr><tr><td>105.45</td><td>-1.4</td><td>5.00</td><td>6.95</td><td>28.53</td></tr><tr><td>105.40</td><td>-1.4</td><td>5.00</td><td>6.93</td><td>33.28</td></tr><tr><td>105.35</td><td>-1.4</td><td>5.00</td><td>6.92</td><td>38.04</td></tr><tr><td>105.35</td><td>-1.4</td><td>5.00</td><td>6.92</td><td>34.79</td></tr><tr><td>105.30</td><td>-1.4</td><td>5.00</td><td>6.90</td><td>37.37</td></tr><tr><td>105.10</td><td>-1.4</td><td>5.00</td><td>6.84</td><td>47.68</td></tr><tr><td>105.05</td><td>-1.4</td><td>5.00</td><td>6.82</td><td>50.26</td></tr><tr><td>105.05</td><td>-1.4</td><td>5.00</td><td>6.82</td><td>50.26</td></tr><tr><td>105.00</td><td>-1.4</td><td>5.00</td><td>6.81</td><td>52.84</td></tr><tr><td>105.00</td><td>-1.4</td><td>5.00</td><td>6.81</td><td>52.84</td></tr><tr><td>104.95</td><td>-1.4</td><td>5.00</td><td>6.79</td><td>54.14</td></tr><tr><td>104.14</td><td>-1.3</td><td>5.00</td><td>6.56</td><td>74.99</td></tr><tr><td>104.09</td><td>-1.3</td><td>5.00</td><td>6.55</td><td>76.30</td></tr><tr><td>104.09</td><td>-1.3</td><td>5.00</td><td>6.55</td><td>76.30</td></tr><tr><td>104.04</td><td>-1.3</td><td>5.00</td><td>6.53</td><td>77.60</td></tr><tr><td>103.28</td><td>-1.3</td><td>5.00</td><td>6.38</td><td>97.15</td></tr><tr><td>103.23</td><td>-1.3</td><td>5.00</td><td>6.38</td><td>98.45</td></tr><tr><td>103.23</td><td>-1.3</td><td>5.00</td><td>6.38</td><td>98.45</td></tr><tr><td>103.18</td><td>-1.3</td><td>5.00</td><td>6.37</td><td>99.74</td></tr><tr><td>103.13</td><td>-1.3</td><td>5.00</td><td>6.37</td><td>101.04</td></tr><tr><td>103.08</td><td>-1.3</td><td>5.00</td><td>6.36</td><td>102.33</td></tr><tr><td>103.08</td><td>-1.3</td><td>5.00</td><td>6.36</td><td>102.33</td></tr><tr><td>103.03</td><td>-1.3</td><td>5.00</td><td>6.36</td><td>103.62</td></tr><tr><td>102.53</td><td>-1.3</td><td>5.00</td><td>6.38</td><td>116.53</td></tr><tr><td>102.48</td><td>-1.3</td><td>5.00</td><td>6.39</td><td>117.82</td></tr><tr><td>102.48</td><td>-1.3</td><td>5.00</td><td>6.39</td><td>210.02</td></tr><tr><td>102.43</td><td>-1.3</td><td>5.00</td><td>6.40</td><td>213.46</td></tr><tr><td>102.43</td><td>-1.3</td><td>50.00</td><td>63.97</td><td>213.46</td></tr><tr><td>102.38</td><td>-1.3</td><td>50.00</td><td>64.07</td><td>216.91</td></tr><tr><td>102.13</td><td>-1.3</td><td>50.00</td><td>64.79</td><td>234.12</td></tr><tr><td>102.08</td><td>-1.3</td><td>50.00</td><td>64.97</td><td>237.56</td></tr><tr><td>102.08</td><td>-1.3</td><td>50.00</td><td>64.97</td><td>237.56</td></tr><tr><td>102.03</td><td>-1.3</td><td>50.00</td><td>65.17</td><td>241.00</td></tr><tr><td>101.93</td><td>-1.3</td><td>50.00</td><td>65.62</td><td>247.89</td></tr><tr><td>101.88</td><td>-1.3</td><td>50.00</td><td>65.87</td><td>251.33</td></tr><tr><td>101.88</td><td>-1.3</td><td>50.00</td><td>65.87</td><td>251.33</td></tr><tr><td>101.85</td><td>-1.3</td><td>50.00</td><td>66.04</td><td>253.53</td></tr><tr><td>101.85</td><td>-1.3</td><td>50.00</td><td>66.04</td><td>253.53</td></tr><tr><td>101.80</td><td>-1.3</td><td>50.00</td><td>66.31</td><td>257.01</td></tr><tr><td>101.55</td><td>-1.4</td><td>50.00</td><td>67.96</td><td>274.42</td></tr><tr><td>101.50</td><td>-1.4</td><td>50.00</td><td>68.34</td><td>277.91</td></tr><tr><td>101.50</td><td>-1.4</td><td>50.00</td><td>68.34</td><td>277.91</td></tr><tr><td>101.45</td><td>-1.4</td><td>50.00</td><td>68.73</td><td>281.39</td></tr><tr><td>101.14</td><td>-1.4</td><td>50.00</td><td>71.48</td><td>302.28</td></tr><tr><td>101.09</td><td>-1.4</td><td>50.00</td><td>72.00</td><td>305.76</td></tr><tr><td>101.09</td><td>-1.4</td><td>50.00</td><td>72.00</td><td>305.76</td></tr><tr><td>101.04</td><td>-1.5</td><td>50.00</td><td>72.53</td><td>309.24</td></tr><tr><td>100.74</td><td>-1.5</td><td>50.00</td><td>76.07</td><td>330.13</td></tr><tr><td>100.69</td><td>-1.5</td><td>50.00</td><td>76.72</td><td>333.61</td></tr><tr><td>100.69</td><td>-1.5</td><td>50.00</td><td>76.72</td><td>333.61</td></tr><tr><td>100.69</td><td>-1.5</td><td>50.00</td><td>76.72</td><td>333.65</td></tr><tr><td>100.69</td><td>-1.5</td><td>50.00</td><td>76.72</td><td>333.65</td></tr><tr><td>100.64</td><td>-1.5</td><td>50.00</td><td>77.34</td><td>336.91</td></tr><tr><td>100.31</td><td>-1.6</td><td>50.00</td><td>81.97</td><td>359.74</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-1.4	-	-	-	106.10	-1.4	-	-	-	106.10	-1.4	-	-	-	106.05	-1.4	-	-	-	105.80	-1.4	-	-	-	105.75	-1.4	0.00	0.00	0.00	105.75	-1.4	0.00	0.00	0.00	105.70	-1.4	0.00	0.00	4.75	105.55	-1.4	5.00	6.98	19.02	105.50	-1.4	5.00	6.96	23.77	105.50	-1.4	5.00	6.96	23.77	105.45	-1.4	5.00	6.95	28.53	105.40	-1.4	5.00	6.93	33.28	105.35	-1.4	5.00	6.92	38.04	105.35	-1.4	5.00	6.92	34.79	105.30	-1.4	5.00	6.90	37.37	105.10	-1.4	5.00	6.84	47.68	105.05	-1.4	5.00	6.82	50.26	105.05	-1.4	5.00	6.82	50.26	105.00	-1.4	5.00	6.81	52.84	105.00	-1.4	5.00	6.81	52.84	104.95	-1.4	5.00	6.79	54.14	104.14	-1.3	5.00	6.56	74.99	104.09	-1.3	5.00	6.55	76.30	104.09	-1.3	5.00	6.55	76.30	104.04	-1.3	5.00	6.53	77.60	103.28	-1.3	5.00	6.38	97.15	103.23	-1.3	5.00	6.38	98.45	103.23	-1.3	5.00	6.38	98.45	103.18	-1.3	5.00	6.37	99.74	103.13	-1.3	5.00	6.37	101.04	103.08	-1.3	5.00	6.36	102.33	103.08	-1.3	5.00	6.36	102.33	103.03	-1.3	5.00	6.36	103.62	102.53	-1.3	5.00	6.38	116.53	102.48	-1.3	5.00	6.39	117.82	102.48	-1.3	5.00	6.39	210.02	102.43	-1.3	5.00	6.40	213.46	102.43	-1.3	50.00	63.97	213.46	102.38	-1.3	50.00	64.07	216.91	102.13	-1.3	50.00	64.79	234.12	102.08	-1.3	50.00	64.97	237.56	102.08	-1.3	50.00	64.97	237.56	102.03	-1.3	50.00	65.17	241.00	101.93	-1.3	50.00	65.62	247.89	101.88	-1.3	50.00	65.87	251.33	101.88	-1.3	50.00	65.87	251.33	101.85	-1.3	50.00	66.04	253.53	101.85	-1.3	50.00	66.04	253.53	101.80	-1.3	50.00	66.31	257.01	101.55	-1.4	50.00	67.96	274.42	101.50	-1.4	50.00	68.34	277.91	101.50	-1.4	50.00	68.34	277.91	101.45	-1.4	50.00	68.73	281.39	101.14	-1.4	50.00	71.48	302.28	101.09	-1.4	50.00	72.00	305.76	101.09	-1.4	50.00	72.00	305.76	101.04	-1.5	50.00	72.53	309.24	100.74	-1.5	50.00	76.07	330.13	100.69	-1.5	50.00	76.72	333.61	100.69	-1.5	50.00	76.72	333.61	100.69	-1.5	50.00	76.72	333.65	100.69	-1.5	50.00	76.72	333.65	100.64	-1.5	50.00	77.34	336.91	100.31	-1.6	50.00	81.97	359.74
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105.70	-1.4	0.00	0.00	4.75																																																																																																																																																																																																																																																																																																																																																
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105.40	-1.4	5.00	6.93	33.28																																																																																																																																																																																																																																																																																																																																																
105.35	-1.4	5.00	6.92	38.04																																																																																																																																																																																																																																																																																																																																																
105.35	-1.4	5.00	6.92	34.79																																																																																																																																																																																																																																																																																																																																																
105.30	-1.4	5.00	6.90	37.37																																																																																																																																																																																																																																																																																																																																																
105.10	-1.4	5.00	6.84	47.68																																																																																																																																																																																																																																																																																																																																																
105.05	-1.4	5.00	6.82	50.26																																																																																																																																																																																																																																																																																																																																																
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105.00	-1.4	5.00	6.81	52.84																																																																																																																																																																																																																																																																																																																																																
105.00	-1.4	5.00	6.81	52.84																																																																																																																																																																																																																																																																																																																																																
104.95	-1.4	5.00	6.79	54.14																																																																																																																																																																																																																																																																																																																																																
104.14	-1.3	5.00	6.56	74.99																																																																																																																																																																																																																																																																																																																																																
104.09	-1.3	5.00	6.55	76.30																																																																																																																																																																																																																																																																																																																																																
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104.04	-1.3	5.00	6.53	77.60																																																																																																																																																																																																																																																																																																																																																
103.28	-1.3	5.00	6.38	97.15																																																																																																																																																																																																																																																																																																																																																
103.23	-1.3	5.00	6.38	98.45																																																																																																																																																																																																																																																																																																																																																
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103.18	-1.3	5.00	6.37	99.74																																																																																																																																																																																																																																																																																																																																																
103.13	-1.3	5.00	6.37	101.04																																																																																																																																																																																																																																																																																																																																																
103.08	-1.3	5.00	6.36	102.33																																																																																																																																																																																																																																																																																																																																																
103.08	-1.3	5.00	6.36	102.33																																																																																																																																																																																																																																																																																																																																																
103.03	-1.3	5.00	6.36	103.62																																																																																																																																																																																																																																																																																																																																																
102.53	-1.3	5.00	6.38	116.53																																																																																																																																																																																																																																																																																																																																																
102.48	-1.3	5.00	6.39	117.82																																																																																																																																																																																																																																																																																																																																																
102.48	-1.3	5.00	6.39	210.02																																																																																																																																																																																																																																																																																																																																																
102.43	-1.3	5.00	6.40	213.46																																																																																																																																																																																																																																																																																																																																																
102.43	-1.3	50.00	63.97	213.46																																																																																																																																																																																																																																																																																																																																																
102.38	-1.3	50.00	64.07	216.91																																																																																																																																																																																																																																																																																																																																																
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102.03	-1.3	50.00	65.17	241.00																																																																																																																																																																																																																																																																																																																																																
101.93	-1.3	50.00	65.62	247.89																																																																																																																																																																																																																																																																																																																																																
101.88	-1.3	50.00	65.87	251.33																																																																																																																																																																																																																																																																																																																																																
101.88	-1.3	50.00	65.87	251.33																																																																																																																																																																																																																																																																																																																																																
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101.85	-1.3	50.00	66.04	253.53																																																																																																																																																																																																																																																																																																																																																
101.80	-1.3	50.00	66.31	257.01																																																																																																																																																																																																																																																																																																																																																
101.55	-1.4	50.00	67.96	274.42																																																																																																																																																																																																																																																																																																																																																
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Auftraggeber: Stadtverwaltung Leipzig		-																				
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<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$</p> <p>$G_{i,k} = 152.33 \text{ kN/m}$</p> <p>$G'_{i,k} = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 69.26 \text{ kN/m}$ ($E_{ah,k} = 363.41 \text{ kN/m}$)</p> <p>$B_{v,k} = 156.26$</p> <p>Summe $V_{i,k} = 65.33 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.93 bis 95.41 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th>$q_{s,k} [\text{kN/m}^2]$</th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>105.75</td> <td>105.35</td> <td>0.00</td> <td>S1: Auffüllungen</td> </tr> <tr> <td>105.35</td> <td>102.48</td> <td>0.00</td> <td>S2: Auelehm (über GS)</td> </tr> <tr> <td>102.48</td> <td>101.85</td> <td>55.00</td> <td>s3: Flussskies, -sand (über GS)</td> </tr> <tr> <td>101.85</td> <td>98.05</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 98.05 m = $1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.65 / 1.40 = 174.04 \text{ kN/m}$</p> <p>$R_{d} = R_{b,d} + R_{s1,d} = 1039.08 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 182.80 - 0.00 + 79.65 + 0.00 = 262.44 \text{ kN/m}$</p> <p>$\Rightarrow \mu = V_{i,d} / R_{d} = 262.44 / 1039.08 = 0.25$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.75	105.35	0.00	S1: Auffüllungen	105.35	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flussskies, -sand (über GS)	101.85	98.05	55.00	s3: Flussskies, -sand
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<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 12_BS 8_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 106.10 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Lasten (zweiseitig begrenzt)</p> <table><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>2.40</td><td>5.83</td><td>8.06</td><td>101.85</td><td>98.14</td><td>92.71</td><td>92.97</td><td>89.22</td><td>nein</td></tr><tr><td>2</td><td>117.47</td><td>1.82</td><td>2.49</td><td>101.85</td><td>100.69</td><td>99.00</td><td>99.11</td><td>97.95</td><td>nein</td></tr><tr><td>3</td><td>97.83</td><td>2.49</td><td>3.16</td><td>101.85</td><td>100.26</td><td>97.95</td><td>98.37</td><td>96.90</td><td>nein</td></tr><tr><td>4</td><td>78.17</td><td>3.16</td><td>3.83</td><td>101.85</td><td>99.84</td><td>96.90</td><td>97.64</td><td>95.85</td><td>nein</td></tr><tr><td>5</td><td>58.52</td><td>3.83</td><td>4.49</td><td>101.85</td><td>99.41</td><td>95.85</td><td>96.90</td><td>94.81</td><td>nein</td></tr><tr><td>6</td><td>38.88</td><td>4.49</td><td>5.16</td><td>101.85</td><td>98.99</td><td>94.81</td><td>96.16</td><td>93.76</td><td>nein</td></tr><tr><td>7</td><td>19.22</td><td>5.16</td><td>5.83</td><td>101.85</td><td>98.56</td><td>93.76</td><td>95.43</td><td>92.71</td><td>nein</td></tr></table> <p>Steuerparameter = 0.50</p> <p>Zusatzdrücke</p> <table><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr></table> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.c</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.05 m</p>			Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein	2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein	3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein	4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein	5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein	6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein	7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	45.90	0.00	100.69	92.70	Ständig
Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast																																																																																																					
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Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025																																																																																																												
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																												

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.48	5.000	5.000
102.48	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 418.297 / 427.031 = 0.980$
Bettungslager $B_{h,d} = 418.297 \text{ kN/m}$
Erddwiderstand $E_{ph,d} = 427.031 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-23.60	-20.06	-20.06	-10.54	6.900E+4	2.100E+7	-25.58

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-0.8	0.0	-23.60	0.00	0.00
-0.90	105.00	-0.8	0.0	-23.60	0.00	0.00
-0.90	105.00	-0.8	0.0	-23.60	0.00	0.00
-0.80	105.00	-0.8	0.0	-23.60	0.00	0.00
-0.70	105.00	-0.9	0.0	-23.60	0.00	0.00
-0.60	105.00	-0.9	0.0	-23.60	0.00	0.00
-0.50	105.00	-1.0	0.0	-23.60	0.00	0.00
-0.40	105.00	-1.0	0.0	-23.60	0.00	0.00
-0.30	105.00	-1.0	0.0	-23.60	0.00	0.00
-0.20	105.00	-1.1	0.0	-23.60	0.00	0.00
-0.10	105.00	-1.1	0.0	-23.60	0.00	0.00
0.00	105.00	-1.1	0.0	-23.60	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_8\Linkes_Ufer\10_BS_8_LF1.1 (ohne Lasten).vrb
eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0007

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	101.85	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00
4	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.35	0.390	0.461	30.000	10.00	57.80	0.179
2	102.48	0.501	0.555	22.500	7.50	53.61	0.179
3	101.85	0.357	0.433	32.500	10.84	59.19	0.179
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Schnitt:	Anlage Q2	Schnitt 8L	Seite Anlage Q2/17
Kapitel:	3	LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																				
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<div>Aktive Erddruckkoordinaten ([g+q],k) mit Zusatzdrücke</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.100</td><td>105.500</td><td>10.890</td><td>10.890</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.350</td><td>10.890</td><td>10.890</td><td>0.00</td><td>1.50</td></tr><tr><td>105.350</td><td>105.100</td><td>10.890</td><td>10.890</td><td>1.50</td><td>4.00</td></tr><tr><td>105.100</td><td>105.000</td><td>10.890</td><td>10.890</td><td>4.00</td><td>5.00</td></tr><tr><td>105.000</td><td>104.050</td><td>10.890</td><td>7.260</td><td>5.00</td><td>5.00</td></tr><tr><td>104.050</td><td>103.050</td><td>7.260</td><td>7.260</td><td>5.00</td><td>5.00</td></tr><tr><td>103.050</td><td>102.550</td><td>7.260</td><td>7.260</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.480</td><td>16.708</td><td>17.006</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.092</td><td>13.302</td><td>14.892</td><td>5.00</td><td>5.00</td></tr><tr><td>102.092</td><td>101.850</td><td>14.892</td><td>15.886</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.800</td><td>15.886</td><td>16.092</td><td>5.00</td><td>5.00</td></tr><tr><td>101.800</td><td>101.245</td><td>16.092</td><td>18.367</td><td>5.00</td><td>5.00</td></tr><tr><td>101.245</td><td>101.094</td><td>18.367</td><td>18.987</td><td>5.00</td><td>5.00</td></tr><tr><td>101.094</td><td>100.691</td><td>18.987</td><td>20.641</td><td>5.00</td><td>5.00</td></tr><tr><td>100.691</td><td>100.265</td><td>66.544</td><td>76.374</td><td>5.00</td><td>5.00</td></tr><tr><td>100.265</td><td>100.076</td><td>76.374</td><td>83.604</td><td>5.00</td><td>5.00</td></tr><tr><td>100.076</td><td>99.839</td><td>83.604</td><td>92.642</td><td>5.00</td><td>5.00</td></tr><tr><td>99.839</td><td>99.413</td><td>92.642</td><td>112.926</td><td>5.00</td><td>5.00</td></tr><tr><td>99.413</td><td>99.110</td><td>112.926</td><td>129.155</td><td>5.00</td><td>5.00</td></tr><tr><td>99.110</td><td>99.054</td><td>129.155</td><td>130.137</td><td>5.00</td><td>5.00</td></tr><tr><td>99.054</td><td>98.997</td><td>130.137</td><td>131.120</td><td>5.00</td><td>5.00</td></tr><tr><td>98.997</td><td>98.988</td><td>131.120</td><td>131.050</td><td>5.00</td><td>5.00</td></tr><tr><td>98.988</td><td>98.561</td><td>131.050</td><td>129.338</td><td>5.00</td><td>5.00</td></tr><tr><td>98.561</td><td>98.373</td><td>129.338</td><td>128.849</td><td>5.00</td><td>5.00</td></tr><tr><td>98.373</td><td>98.136</td><td>128.849</td><td>122.623</td><td>5.00</td><td>5.00</td></tr><tr><td>98.136</td><td>98.092</td><td>122.623</td><td>121.484</td><td>5.00</td><td>5.00</td></tr><tr><td>98.092</td><td>98.049</td><td>121.484</td><td>120.345</td><td>5.00</td><td>5.00</td></tr><tr><td>98.049</td><td>97.950</td><td>120.345</td><td>117.764</td><td>5.00</td><td>5.00</td></tr><tr><td>97.950</td><td>97.636</td><td>117.764</td><td>116.163</td><td>5.00</td><td>5.00</td></tr><tr><td>97.636</td><td>96.901</td><td>116.163</td><td>100.916</td><td>5.00</td><td>5.00</td></tr><tr><td>96.901</td><td>96.162</td><td>100.916</td><td>88.742</td><td>5.00</td><td>5.00</td></tr><tr><td>96.162</td><td>95.854</td><td>88.742</td><td>81.881</td><td>5.00</td><td>5.00</td></tr><tr><td>95.854</td><td>95.426</td><td>81.881</td><td>76.536</td><td>5.00</td><td>5.00</td></tr><tr><td>95.426</td><td>94.807</td><td>76.536</td><td>67.247</td><td>5.00</td><td>5.00</td></tr><tr><td>94.807</td><td>93.759</td><td>67.247</td><td>58.489</td><td>5.00</td><td>5.00</td></tr><tr><td>93.759</td><td>92.968</td><td>58.489</td><td>55.319</td><td>5.00</td><td>5.00</td></tr><tr><td>92.968</td><td>92.711</td><td>55.319</td><td>54.231</td><td>5.00</td><td>5.00</td></tr><tr><td>92.711</td><td>92.700</td><td>54.231</td><td>54.210</td><td>5.00</td><td>5.00</td></tr><tr><td>92.700</td><td>89.216</td><td>54.210</td><td>67.705</td><td>5.00</td><td>5.00</td></tr><tr><td>89.216</td><td>80.000</td><td>67.705</td><td>105.505</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>101.85</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckkoordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.05</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.09</td><td>-2.20</td><td>-18.68</td></tr><tr><td>102.09</td><td>101.85</td><td>-18.68</td><td>-28.98</td></tr><tr><td>101.85</td><td>101.80</td><td>-28.98</td><td>-31.12</td></tr><tr><td>101.80</td><td>101.25</td><td>-31.12</td><td>-54.69</td></tr><tr><td>101.25</td><td>101.09</td><td>-54.69</td><td>-61.11</td></tr></tbody></table>						von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	105.500	10.890	10.890	0.00	0.00	105.500	105.350	10.890	10.890	0.00	1.50	105.350	105.100	10.890	10.890	1.50	4.00	105.100	105.000	10.890	10.890	4.00	5.00	105.000	104.050	10.890	7.260	5.00	5.00	104.050	103.050	7.260	7.260	5.00	5.00	103.050	102.550	7.260	7.260	5.00	5.00	102.550	102.480	16.708	17.006	5.00	5.00	102.480	102.092	13.302	14.892	5.00	5.00	102.092	101.850	14.892	15.886	5.00	5.00	101.850	101.800	15.886	16.092	5.00	5.00	101.800	101.245	16.092	18.367	5.00	5.00	101.245	101.094	18.367	18.987	5.00	5.00	101.094	100.691	18.987	20.641	5.00	5.00	100.691	100.265	66.544	76.374	5.00	5.00	100.265	100.076	76.374	83.604	5.00	5.00	100.076	99.839	83.604	92.642	5.00	5.00	99.839	99.413	92.642	112.926	5.00	5.00	99.413	99.110	112.926	129.155	5.00	5.00	99.110	99.054	129.155	130.137	5.00	5.00	99.054	98.997	130.137	131.120	5.00	5.00	98.997	98.988	131.120	131.050	5.00	5.00	98.988	98.561	131.050	129.338	5.00	5.00	98.561	98.373	129.338	128.849	5.00	5.00	98.373	98.136	128.849	122.623	5.00	5.00	98.136	98.092	122.623	121.484	5.00	5.00	98.092	98.049	121.484	120.345	5.00	5.00	98.049	97.950	120.345	117.764	5.00	5.00	97.950	97.636	117.764	116.163	5.00	5.00	97.636	96.901	116.163	100.916	5.00	5.00	96.901	96.162	100.916	88.742	5.00	5.00	96.162	95.854	88.742	81.881	5.00	5.00	95.854	95.426	81.881	76.536	5.00	5.00	95.426	94.807	76.536	67.247	5.00	5.00	94.807	93.759	67.247	58.489	5.00	5.00	93.759	92.968	58.489	55.319	5.00	5.00	92.968	92.711	55.319	54.231	5.00	5.00	92.711	92.700	54.231	54.210	5.00	5.00	92.700	89.216	54.210	67.705	5.00	5.00	89.216	80.000	67.705	105.505	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	101.85	6.006	6.054	32.500	-21.68	16.35	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.05	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.09	-2.20	-18.68	102.09	101.85	-18.68	-28.98	101.85	101.80	-28.98	-31.12	101.80	101.25	-31.12	-54.69	101.25	101.09	-54.69	-61.11	Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/18	
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101.850	101.800	15.886	16.092	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
101.800	101.245	16.092	18.367	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
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101.094	100.691	18.987	20.641	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
100.691	100.265	66.544	76.374	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
100.265	100.076	76.374	83.604	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
100.076	99.839	83.604	92.642	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
99.839	99.413	92.642	112.926	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
99.413	99.110	112.926	129.155	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
99.110	99.054	129.155	130.137	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
99.054	98.997	130.137	131.120	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.997	98.988	131.120	131.050	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.988	98.561	131.050	129.338	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.561	98.373	129.338	128.849	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.373	98.136	128.849	122.623	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.136	98.092	122.623	121.484	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.092	98.049	121.484	120.345	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
98.049	97.950	120.345	117.764	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
97.950	97.636	117.764	116.163	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
97.636	96.901	116.163	100.916	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
96.901	96.162	100.916	88.742	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
96.162	95.854	88.742	81.881	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
95.854	95.426	81.881	76.536	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
95.426	94.807	76.536	67.247	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
94.807	93.759	67.247	58.489	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
93.759	92.968	58.489	55.319	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
92.968	92.711	55.319	54.231	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
92.711	92.700	54.231	54.210	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
92.700	89.216	54.210	67.705	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
89.216	80.000	67.705	105.505	5.00	5.00																																																																																																																																																																																																																																																																																																																																																			
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2	102.48	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																																																																		
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Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):									
Auftraggeber: Stadtverwaltung Leipzig		-									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>101.09 100.69 -61.11 -78.26</div><div>100.69 100.26 -78.26 -96.34</div><div>100.26 100.08 -96.34 -104.39</div><div>100.08 99.84 -104.39 -114.46</div><div>99.84 99.41 -114.46 -132.54</div><div>99.41 99.11 -132.54 -145.43</div><div>99.11 99.05 -145.43 -147.83</div><div>99.05 99.00 -147.83 -150.23</div><div>99.00 98.99 -150.23 -150.63</div><div>98.99 98.56 -150.63 -168.75</div><div>98.56 98.37 -168.75 -176.77</div><div>98.37 98.14 -176.77 -186.83</div><div>98.14 98.09 -186.83 -188.69</div><div>98.09 98.05 -188.69 -190.54</div><div>98.05 97.95 -190.54 -194.73</div><div>97.95 97.64 -194.73 -208.07</div><div>97.64 96.90 -208.07 -239.30</div><div>96.90 96.16 -239.30 -270.71</div><div>96.16 95.85 -270.71 -283.81</div><div>95.85 95.43 -283.81 -302.00</div><div>95.43 94.81 -302.00 -328.31</div><div>94.81 93.76 -328.31 -372.88</div><div>93.76 92.97 -372.88 -406.48</div><div>92.97 92.71 -406.48 -417.38</div><div>92.71 92.70 -417.38 -417.87</div><div>92.70 89.22 -417.87 -565.95</div><div>89.22 80.00 -565.95 -957.65</div></div></div> <div><div>Schnittgrößen (Bemessungswerte)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-15.8</div><div>-7.5</div><div>-2.3</div><div></div></div><div><div>105.35</div><div>-19.7</div><div>-9.5</div><div>-3.5</div><div></div></div><div><div>105.10</div><div>-26.0</div><div>-13.5</div><div>-6.4</div><div></div></div><div><div>105.00</div><div>-28.5</div><div>-15.3</div><div>-7.8</div><div>-23.6</div></div><div><div>105.00</div><div>-28.5</div><div>8.3</div><div>-7.8</div><div></div></div><div><div>104.05</div><div>-52.1</div><div>-8.0</div><div>-8.1</div><div></div></div><div><div>103.05</div><div>-76.1</div><div>-22.4</div><div>-23.3</div><div></div></div><div><div>102.55</div><div>-88.1</div><div>-29.5</div><div>-36.3</div><div></div></div><div><div>102.48</div><div>-89.6</div><div>-31.3</div><div>-38.4</div><div></div></div><div><div>102.09</div><div>-95.3</div><div>-33.1</div><div>-51.2</div><div></div></div><div><div>101.85</div><div>-96.4</div><div>-28.5</div><div>-58.8</div><div></div></div><div><div>101.80</div><div>-96.4</div><div>-27.0</div><div>-60.2</div><div></div></div><div><div>101.25</div><div>-92.2</div><div>-0.2</div><div>-68.3</div><div></div></div><div><div>101.09</div><div>-90.5</div><div>8.4</div><div>-67.7</div><div></div></div><div><div>100.69</div><div>-85.2</div><div>32.2</div><div>-59.6</div><div></div></div><div><div>100.26</div><div>-78.5</div><div>35.1</div><div>-45.2</div><div></div></div><div><div>100.08</div><div>-75.1</div><div>35.6</div><div>-38.5</div><div></div></div><div><div>99.84</div><div>-70.4</div><div>34.9</div><div>-30.1</div><div></div></div><div><div>99.41</div><div>-60.9</div><div>29.5</div><div>-16.2</div><div></div></div><div><div>99.11</div><div>-53.2</div><div>21.5</div><div>-8.4</div><div></div></div><div><div>99.05</div><div>-51.7</div><div>19.6</div><div>-7.2</div><div></div></div><div><div>99.00</div><div>-50.2</div><div>17.8</div><div>-6.1</div><div></div></div><div><div>98.99</div><div>-49.9</div><div>17.5</div><div>-6.0</div><div></div></div><div><div>98.56</div><div>-37.4</div><div>6.2</div><div>-1.1</div><div></div></div><div><div>98.37</div><div>-31.3</div><div>2.6</div><div>-0.3</div><div></div></div><div><div>98.14</div><div>-23.3</div><div>0.2</div><div>0.0</div><div></div></div><div><div>98.09</div><div>-21.8</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.05</div><div>-20.2</div><div>0.0</div><div>0.0</div><div></div></div></div> <tr><td colspan="2">Schnitt: Anlage Q2 Schnitt 8L</td><td>Seite Anlage Q2/19</td></tr> <tr><td colspan="2">Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)</td><td>Archiv Nr.: 2004-0025</td></tr> <tr><td colspan="2">Vorgang: Genehmigungstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/19	Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 2004-0025	Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> 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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 101.80 -1.3 38.21 50.28 50.57 101.75 -1.3 38.21 50.64 54.05 101.30 -1.4 50.00 71.04 85.38 101.25 -1.4 50.00 71.64 88.87 101.25 -1.4 50.00 71.64 88.87 101.19 -1.4 50.00 72.24 92.35 101.14 -1.5 50.00 72.86 95.83 101.09 -1.5 50.00 73.49 99.31 101.09 -1.5 50.00 73.49 99.31 101.04 -1.5 50.00 74.14 102.79 100.74 -1.6 50.00 78.27 123.68 100.69 -1.6 50.00 79.00 127.17 100.69 -1.6 50.00 79.00 127.17 100.69 -1.6 50.00 79.00 127.20 100.69 -1.6 50.00 79.00 127.20 100.64 -1.6 50.00 79.70 130.46 100.31 -1.7 50.00 84.81 153.30 100.26 -1.7 50.00 85.57 156.56 100.26 -1.7 50.00 85.57 156.56 100.22 -1.7 50.00 86.34 159.83 100.12 -1.8 50.00 87.91 166.37 100.08 -1.8 50.00 88.70 169.64 100.08 -1.8 50.00 88.70 169.64 100.03 -1.8 50.00 89.50 172.91 99.89 -1.8 50.00 91.93 182.72 99.84 -1.9 50.00 92.75 185.99 99.84 -1.9 50.00 92.75 185.99 99.79 -1.9 50.00 93.58 189.26 99.46 -2.0 50.00 99.48 212.12 99.41 -2.0 50.00 100.33 215.39 99.41 -2.0 50.00 100.33 215.39 99.36 -2.0 50.00 101.25 218.88 99.16 -2.1 50.00 104.95 232.84 99.11 -2.1 50.00 105.88 236.33 99.11 -2.1 50.00 105.88 236.33 99.05 -2.1 50.00 106.92 240.22 99.05 -2.1 50.00 106.92 240.22 99.00 -2.2 50.00 107.96 244.12 99.00 -2.2 50.00 107.96 244.12 98.99 -2.2 50.00 108.14 244.78 98.99 -2.2 50.00 108.14 244.78 98.94 -2.2 50.00 109.01 248.05 98.61 -2.3 50.00 115.15 270.94 98.56 -2.3 50.00 116.03 274.21 98.56 -2.3 50.00 116.03 274.21 98.51 -2.3 50.00 116.91 277.47 98.42 -2.4 50.00 118.66 284.00 98.37 -2.4 50.00 119.54 287.26 98.37 -2.4 50.00 119.54 287.26 98.33 -2.4 50.00 120.42 290.53 98.18 -2.5 50.00 123.06 300.34 98.14 -2.5 50.00 123.94 303.61 98.14 -2.5 50.00 123.94 303.61 98.09 -2.5 50.00 124.75 306.61 98.09 -2.5 50.00 124.75 306.61 98.05 -2.5 50.00 125.56 309.62 </div> </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]</p> <p>$\phi_{i,[g+q],k}$: 0.02129017</p> <p>Theoretischer Fußpunkt = 98.049 m</p> <p>Einbindetiefe t_g = 4.50 m</p> <p>Profillänge = 8.05 m</p> </div>		
Schnitt:	Anlage Q2 Schnitt 8L	Seite Anlage Q2/22
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 22
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig																		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: $P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}$</p> <p>$G_k = 152.33 \text{ kN/m}$</p> <p>$G'_k = 0.00 \text{ kN/m}$</p> <p>$P_{v,k} = 0.00 \text{ kN/m}$</p> <p>$E_{av,k} = 66.86 \text{ kN/m}$ ($E_{ah,k} = 346.77 \text{ kN/m}$)</p> <p>$B_{v,k} = 144.14$</p> <p>Summe $V_k = 75.04 \text{ kN/m}$ (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit</p> <p>(Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand $D = 0.88 \text{ m}$</p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</p> <p>(gemittelt von 98.93 bis 95.41 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</p> <p>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>102.48</td><td>101.85</td><td>55.00</td><td>s3: Flussskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 98.05 m = $1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}$</p> <p>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.65 / 1.40 = 174.04 \text{ kN/m}$</p> <p>$R_d = R_{b,d} + R_{s1,d} = 1039.08 \text{ kN/m}$</p> <p>Einwirkungen</p> <p>$V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 182.80 - 0.00 + 76.89 + 0.00 = 259.68 \text{ kN/m}$</p> <p>$\implies \mu = V_d / R_d = 259.68 / 1039.08 = 0.25$</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flussskies, -sand (über GS)	101.85	98.05	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
102.55	102.48	0.00	S2: Auelehm (über GS)															
102.48	101.85	55.00	s3: Flussskies, -sand (über GS)															
101.85	98.05	55.00	s3: Flussskies, -sand															
Schnitt:	Anlage Q2 Schnitt 8L	Seite Anlage Q2/23																
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 23																
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																						
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																						
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																						
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 13_BS 8_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (zweiseitig begrenzt)</div> <table><thead><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>2.40</td><td>5.83</td><td>8.06</td><td>101.85</td><td>98.14</td><td>92.71</td><td>92.97</td><td>89.22</td><td>nein</td></tr><tr><td>2</td><td>117.47</td><td>1.82</td><td>2.49</td><td>101.85</td><td>100.69</td><td>99.00</td><td>99.11</td><td>97.95</td><td>nein</td></tr><tr><td>3</td><td>97.83</td><td>2.49</td><td>3.16</td><td>101.85</td><td>100.26</td><td>97.95</td><td>98.37</td><td>96.90</td><td>nein</td></tr><tr><td>4</td><td>78.17</td><td>3.16</td><td>3.83</td><td>101.85</td><td>99.84</td><td>96.90</td><td>97.64</td><td>95.85</td><td>nein</td></tr><tr><td>5</td><td>58.52</td><td>3.83</td><td>4.49</td><td>101.85</td><td>99.41</td><td>95.85</td><td>96.90</td><td>94.81</td><td>nein</td></tr><tr><td>6</td><td>38.88</td><td>4.49</td><td>5.16</td><td>101.85</td><td>98.99</td><td>94.81</td><td>96.16</td><td>93.76</td><td>nein</td></tr><tr><td>7</td><td>19.22</td><td>5.16</td><td>5.83</td><td>101.85</td><td>98.56</td><td>93.76</td><td>95.43</td><td>92.71</td><td>nein</td></tr><tr><td>8</td><td>10.00</td><td>0.00</td><td>3.17</td><td>106.10</td><td>106.10</td><td>103.23</td><td>101.88</td><td></td><td>nein</td></tr></tbody></table> <div>Steuerparameter = 0.50</div> <div>Zusatzdrücke</div> <table><thead><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr></thead><tbody><tr><td>1</td><td>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr></tbody></table> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.c</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.05 m</div>			Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein	2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein	3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein	4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein	5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein	6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein	7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein	8	10.00	0.00	3.17	106.10	106.10	103.23	101.88		nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	45.90	0.00	100.69	92.70	Ständig
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.48	5.000	5.000
102.48	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 421.676 / 427.031 = 0.987$
Bettungslager $B_{h,d} = 421.676 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 427.031 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-39.30	-33.71	-33.71	-10.62	6.900E+4	2.100E+7	-42.98 Steife

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-0.8	0.0	-39.30	0.00	0.00
-0.90	105.00	-0.8	0.0	-39.30	0.00	0.00
-0.90	105.00	-0.8	0.0	-39.30	0.00	0.00
-0.80	105.00	-0.9	0.0	-39.30	0.00	0.00
-0.70	105.00	-1.0	0.0	-39.30	0.00	0.00
-0.60	105.00	-1.0	0.0	-39.30	0.00	0.00
-0.50	105.00	-1.1	0.0	-39.30	0.00	0.00
-0.40	105.00	-1.1	0.0	-39.30	0.00	0.00
-0.30	105.00	-1.2	0.0	-39.30	0.00	0.00
-0.20	105.00	-1.2	0.0	-39.30	0.00	0.00
-0.10	105.00	-1.3	0.0	-39.30	0.00	0.00
0.00	105.00	-1.3	0.0	-39.30	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 8\Linkes Ufer\10_BS 8_LF1.1 (ohne Lasten).vrb
eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0007

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	101.85	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00
4	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
Faktor [-] = 0.50
Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0 .
Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
bestimmt nach:
Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.35	0.390	0.461	30.000	10.00	57.80	0.179
2	102.48	0.501	0.555	22.500	7.50	53.61	0.179
3	101.85	0.357	0.433	32.500	10.84	59.19	0.179
4	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Schnitt:	Anlage Q2	Schnitt 8L	Seite Anlage Q2/25
Kapitel:	4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																				
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<div>Aktive Erddruckkoordinaten ([g+q],k) mit Zusatzdrücke</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.100</td><td>106.097</td><td>16.299</td><td>16.299</td><td>0.00</td><td>0.00</td></tr><tr><td>106.097</td><td>105.500</td><td>16.299</td><td>16.299</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.350</td><td>16.299</td><td>16.299</td><td>0.00</td><td>1.50</td></tr><tr><td>105.350</td><td>105.100</td><td>16.299</td><td>16.299</td><td>1.50</td><td>4.00</td></tr><tr><td>105.100</td><td>105.000</td><td>16.299</td><td>16.299</td><td>4.00</td><td>5.00</td></tr><tr><td>105.000</td><td>104.050</td><td>16.299</td><td>10.866</td><td>5.00</td><td>5.00</td></tr><tr><td>104.050</td><td>103.231</td><td>10.866</td><td>10.866</td><td>5.00</td><td>5.00</td></tr><tr><td>103.231</td><td>103.050</td><td>10.866</td><td>10.866</td><td>5.00</td><td>5.00</td></tr><tr><td>103.050</td><td>102.550</td><td>10.866</td><td>10.866</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.480</td><td>19.187</td><td>19.225</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.231</td><td>14.883</td><td>15.246</td><td>5.00</td><td>5.00</td></tr><tr><td>102.231</td><td>102.081</td><td>15.246</td><td>15.464</td><td>5.00</td><td>5.00</td></tr><tr><td>102.081</td><td>101.882</td><td>15.464</td><td>15.755</td><td>5.00</td><td>5.00</td></tr><tr><td>101.882</td><td>101.850</td><td>15.755</td><td>15.886</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.800</td><td>15.886</td><td>16.092</td><td>5.00</td><td>5.00</td></tr><tr><td>101.800</td><td>101.195</td><td>16.092</td><td>18.574</td><td>5.00</td><td>5.00</td></tr><tr><td>101.195</td><td>101.094</td><td>18.574</td><td>18.987</td><td>5.00</td><td>5.00</td></tr><tr><td>101.094</td><td>100.691</td><td>18.987</td><td>20.641</td><td>5.00</td><td>5.00</td></tr><tr><td>100.691</td><td>100.265</td><td>66.544</td><td>76.374</td><td>5.00</td><td>5.00</td></tr><tr><td>100.265</td><td>100.076</td><td>76.374</td><td>83.604</td><td>5.00</td><td>5.00</td></tr><tr><td>100.076</td><td>99.839</td><td>83.604</td><td>92.642</td><td>5.00</td><td>5.00</td></tr><tr><td>99.839</td><td>99.413</td><td>92.642</td><td>112.926</td><td>5.00</td><td>5.00</td></tr><tr><td>99.413</td><td>99.110</td><td>112.926</td><td>129.155</td><td>5.00</td><td>5.00</td></tr><tr><td>99.110</td><td>99.054</td><td>129.155</td><td>130.137</td><td>5.00</td><td>5.00</td></tr><tr><td>99.054</td><td>98.997</td><td>130.137</td><td>131.120</td><td>5.00</td><td>5.00</td></tr><tr><td>98.997</td><td>98.988</td><td>131.120</td><td>131.050</td><td>5.00</td><td>5.00</td></tr><tr><td>98.988</td><td>98.561</td><td>131.050</td><td>129.338</td><td>5.00</td><td>5.00</td></tr><tr><td>98.561</td><td>98.373</td><td>129.338</td><td>128.849</td><td>5.00</td><td>5.00</td></tr><tr><td>98.373</td><td>98.136</td><td>128.849</td><td>122.623</td><td>5.00</td><td>5.00</td></tr><tr><td>98.136</td><td>98.092</td><td>122.623</td><td>121.484</td><td>5.00</td><td>5.00</td></tr><tr><td>98.092</td><td>98.049</td><td>121.484</td><td>120.345</td><td>5.00</td><td>5.00</td></tr><tr><td>98.049</td><td>97.950</td><td>120.345</td><td>117.764</td><td>5.00</td><td>5.00</td></tr><tr><td>97.950</td><td>97.636</td><td>117.764</td><td>116.163</td><td>5.00</td><td>5.00</td></tr><tr><td>97.636</td><td>96.901</td><td>116.163</td><td>100.916</td><td>5.00</td><td>5.00</td></tr><tr><td>96.901</td><td>96.162</td><td>100.916</td><td>88.742</td><td>5.00</td><td>5.00</td></tr><tr><td>96.162</td><td>95.854</td><td>88.742</td><td>81.881</td><td>5.00</td><td>5.00</td></tr><tr><td>95.854</td><td>95.426</td><td>81.881</td><td>76.536</td><td>5.00</td><td>5.00</td></tr><tr><td>95.426</td><td>94.807</td><td>76.536</td><td>67.247</td><td>5.00</td><td>5.00</td></tr><tr><td>94.807</td><td>93.759</td><td>67.247</td><td>58.489</td><td>5.00</td><td>5.00</td></tr><tr><td>93.759</td><td>92.968</td><td>58.489</td><td>55.319</td><td>5.00</td><td>5.00</td></tr><tr><td>92.968</td><td>92.711</td><td>55.319</td><td>54.231</td><td>5.00</td><td>5.00</td></tr><tr><td>92.711</td><td>92.700</td><td>54.231</td><td>54.210</td><td>5.00</td><td>5.00</td></tr><tr><td>92.700</td><td>89.216</td><td>54.210</td><td>67.705</td><td>5.00</td><td>5.00</td></tr><tr><td>89.216</td><td>80.000</td><td>67.705</td><td>105.505</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>101.85</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table>						von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.097	16.299	16.299	0.00	0.00	106.097	105.500	16.299	16.299	0.00	0.00	105.500	105.350	16.299	16.299	0.00	1.50	105.350	105.100	16.299	16.299	1.50	4.00	105.100	105.000	16.299	16.299	4.00	5.00	105.000	104.050	16.299	10.866	5.00	5.00	104.050	103.231	10.866	10.866	5.00	5.00	103.231	103.050	10.866	10.866	5.00	5.00	103.050	102.550	10.866	10.866	5.00	5.00	102.550	102.480	19.187	19.225	5.00	5.00	102.480	102.231	14.883	15.246	5.00	5.00	102.231	102.081	15.246	15.464	5.00	5.00	102.081	101.882	15.464	15.755	5.00	5.00	101.882	101.850	15.755	15.886	5.00	5.00	101.850	101.800	15.886	16.092	5.00	5.00	101.800	101.195	16.092	18.574	5.00	5.00	101.195	101.094	18.574	18.987	5.00	5.00	101.094	100.691	18.987	20.641	5.00	5.00	100.691	100.265	66.544	76.374	5.00	5.00	100.265	100.076	76.374	83.604	5.00	5.00	100.076	99.839	83.604	92.642	5.00	5.00	99.839	99.413	92.642	112.926	5.00	5.00	99.413	99.110	112.926	129.155	5.00	5.00	99.110	99.054	129.155	130.137	5.00	5.00	99.054	98.997	130.137	131.120	5.00	5.00	98.997	98.988	131.120	131.050	5.00	5.00	98.988	98.561	131.050	129.338	5.00	5.00	98.561	98.373	129.338	128.849	5.00	5.00	98.373	98.136	128.849	122.623	5.00	5.00	98.136	98.092	122.623	121.484	5.00	5.00	98.092	98.049	121.484	120.345	5.00	5.00	98.049	97.950	120.345	117.764	5.00	5.00	97.950	97.636	117.764	116.163	5.00	5.00	97.636	96.901	116.163	100.916	5.00	5.00	96.901	96.162	100.916	88.742	5.00	5.00	96.162	95.854	88.742	81.881	5.00	5.00	95.854	95.426	81.881	76.536	5.00	5.00	95.426	94.807	76.536	67.247	5.00	5.00	94.807	93.759	67.247	58.489	5.00	5.00	93.759	92.968	58.489	55.319	5.00	5.00	92.968	92.711	55.319	54.231	5.00	5.00	92.711	92.700	54.231	54.210	5.00	5.00	92.700	89.216	54.210	67.705	5.00	5.00	89.216	80.000	67.705	105.505	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	101.85	6.006	6.054	32.500	-21.68	16.35	4	80.00	6.006	6.054	32.500	-21.68	16.35
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98.561	98.373	129.338	128.849	5.00	5.00																																																																																																																																																																																																																																																																																																																																			
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97.950	97.636	117.764	116.163	5.00	5.00																																																																																																																																																																																																																																																																																																																																			
97.636	96.901	116.163	100.916	5.00	5.00																																																																																																																																																																																																																																																																																																																																			
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																				
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																				
<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.05</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.23</td><td>-2.20</td><td>-12.79</td></tr><tr><td>102.23</td><td>102.08</td><td>-12.79</td><td>-19.15</td></tr><tr><td>102.08</td><td>101.88</td><td>-19.15</td><td>-27.62</td></tr><tr><td>101.88</td><td>101.85</td><td>-27.62</td><td>-28.98</td></tr><tr><td>101.85</td><td>101.80</td><td>-28.98</td><td>-31.12</td></tr><tr><td>101.80</td><td>101.19</td><td>-31.12</td><td>-56.83</td></tr><tr><td>101.19</td><td>101.09</td><td>-56.83</td><td>-61.11</td></tr><tr><td>101.09</td><td>100.69</td><td>-61.11</td><td>-78.26</td></tr><tr><td>100.69</td><td>100.26</td><td>-78.26</td><td>-96.34</td></tr><tr><td>100.26</td><td>100.08</td><td>-96.34</td><td>-104.39</td></tr><tr><td>100.08</td><td>99.84</td><td>-104.39</td><td>-114.46</td></tr><tr><td>99.84</td><td>99.41</td><td>-114.46</td><td>-132.54</td></tr><tr><td>99.41</td><td>99.11</td><td>-132.54</td><td>-145.43</td></tr><tr><td>99.11</td><td>99.05</td><td>-145.43</td><td>-147.83</td></tr><tr><td>99.05</td><td>99.00</td><td>-147.83</td><td>-150.23</td></tr><tr><td>99.00</td><td>98.99</td><td>-150.23</td><td>-150.63</td></tr><tr><td>98.99</td><td>98.56</td><td>-150.63</td><td>-168.75</td></tr><tr><td>98.56</td><td>98.37</td><td>-168.75</td><td>-176.77</td></tr><tr><td>98.37</td><td>98.14</td><td>-176.77</td><td>-186.83</td></tr><tr><td>98.14</td><td>98.09</td><td>-186.83</td><td>-188.69</td></tr><tr><td>98.09</td><td>98.05</td><td>-188.69</td><td>-190.54</td></tr><tr><td>98.05</td><td>97.95</td><td>-190.54</td><td>-194.73</td></tr><tr><td>97.95</td><td>97.64</td><td>-194.73</td><td>-208.07</td></tr><tr><td>97.64</td><td>96.90</td><td>-208.07</td><td>-239.30</td></tr><tr><td>96.90</td><td>96.16</td><td>-239.30</td><td>-270.71</td></tr><tr><td>96.16</td><td>95.85</td><td>-270.71</td><td>-283.81</td></tr><tr><td>95.85</td><td>95.43</td><td>-283.81</td><td>-302.00</td></tr><tr><td>95.43</td><td>94.81</td><td>-302.00</td><td>-328.31</td></tr><tr><td>94.81</td><td>93.76</td><td>-328.31</td><td>-372.88</td></tr><tr><td>93.76</td><td>92.97</td><td>-372.88</td><td>-406.48</td></tr><tr><td>92.97</td><td>92.71</td><td>-406.48</td><td>-417.38</td></tr><tr><td>92.71</td><td>92.70</td><td>-417.38</td><td>-417.87</td></tr><tr><td>92.70</td><td>89.22</td><td>-417.87</td><td>-565.95</td></tr><tr><td>89.22</td><td>80.00</td><td>-565.95</td><td>-957.65</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.10</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-17.2</td><td>-11.2</td><td>-3.4</td><td></td></tr><tr><td>105.35</td><td>-21.4</td><td>-14.2</td><td>-5.3</td><td></td></tr><tr><td>105.10</td><td>-28.1</td><td>-19.7</td><td>-9.5</td><td></td></tr><tr><td>105.00</td><td>-30.8</td><td>-22.1</td><td>-11.6</td><td>-39.3</td></tr><tr><td>105.00</td><td>-30.8</td><td>17.2</td><td>-11.6</td><td></td></tr><tr><td>104.05</td><td>-55.8</td><td>-4.5</td><td>-6.2</td><td></td></tr><tr><td>103.23</td><td>-76.3</td><td>-19.6</td><td>-16.0</td><td></td></tr><tr><td>103.05</td><td>-80.9</td><td>-22.9</td><td>-19.9</td><td></td></tr><tr><td>102.55</td><td>-93.4</td><td>-32.2</td><td>-33.6</td><td></td></tr><tr><td>102.48</td><td>-95.0</td><td>-34.2</td><td>-36.0</td><td></td></tr><tr><td>102.23</td><td>-99.2</td><td>-37.0</td><td>-44.9</td><td></td></tr><tr><td>102.08</td><td>-100.8</td><td>-36.3</td><td>-50.4</td><td></td></tr><tr><td>101.88</td><td>-101.8</td><td>-32.7</td><td>-57.3</td><td></td></tr><tr><td>101.85</td><td>-101.8</td><td>-31.8</td><td>-58.4</td><td></td></tr><tr><td>101.80</td><td>-101.8</td><td>-30.3</td><td>-59.9</td><td></td></tr><tr><td>101.19</td><td>-96.5</td><td>0.5</td><td>-69.9</td><td></td></tr><tr><td>101.09</td><td>-95.2</td><td>6.6</td><td>-69.5</td><td></td></tr><tr><td>100.69</td><td>-89.5</td><td>31.7</td><td>-61.8</td><td></td></tr><tr><td>100.26</td><td>-82.4</td><td>35.6</td><td>-47.4</td><td></td></tr><tr><td>100.08</td><td>-78.8</td><td>36.4</td><td>-40.6</td><td></td></tr><tr><td>99.84</td><td>-74.0</td><td>36.1</td><td>-32.0</td><td></td></tr><tr><td>99.41</td><td>-64.4</td><td>30.9</td><td>-17.5</td><td></td></tr><tr><td>99.11</td><td>-56.8</td><td>22.9</td><td>-9.3</td><td></td></tr><tr><td>99.05</td><td>-55.2</td><td>21.0</td><td>-8.0</td><td></td></tr></tbody></table>			von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.05	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.23	-2.20	-12.79	102.23	102.08	-12.79	-19.15	102.08	101.88	-19.15	-27.62	101.88	101.85	-27.62	-28.98	101.85	101.80	-28.98	-31.12	101.80	101.19	-31.12	-56.83	101.19	101.09	-56.83	-61.11	101.09	100.69	-61.11	-78.26	100.69	100.26	-78.26	-96.34	100.26	100.08	-96.34	-104.39	100.08	99.84	-104.39	-114.46	99.84	99.41	-114.46	-132.54	99.41	99.11	-132.54	-145.43	99.11	99.05	-145.43	-147.83	99.05	99.00	-147.83	-150.23	99.00	98.99	-150.23	-150.63	98.99	98.56	-150.63	-168.75	98.56	98.37	-168.75	-176.77	98.37	98.14	-176.77	-186.83	98.14	98.09	-186.83	-188.69	98.09	98.05	-188.69	-190.54	98.05	97.95	-190.54	-194.73	97.95	97.64	-194.73	-208.07	97.64	96.90	-208.07	-239.30	96.90	96.16	-239.30	-270.71	96.16	95.85	-270.71	-283.81	95.85	95.43	-283.81	-302.00	95.43	94.81	-302.00	-328.31	94.81	93.76	-328.31	-372.88	93.76	92.97	-372.88	-406.48	92.97	92.71	-406.48	-417.38	92.71	92.70	-417.38	-417.87	92.70	89.22	-417.87	-565.95	89.22	80.00	-565.95	-957.65	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.10	-0.1	0.0	0.0		105.50	-17.2	-11.2	-3.4		105.35	-21.4	-14.2	-5.3		105.10	-28.1	-19.7	-9.5		105.00	-30.8	-22.1	-11.6	-39.3	105.00	-30.8	17.2	-11.6		104.05	-55.8	-4.5	-6.2		103.23	-76.3	-19.6	-16.0		103.05	-80.9	-22.9	-19.9		102.55	-93.4	-32.2	-33.6		102.48	-95.0	-34.2	-36.0		102.23	-99.2	-37.0	-44.9		102.08	-100.8	-36.3	-50.4		101.88	-101.8	-32.7	-57.3		101.85	-101.8	-31.8	-58.4		101.80	-101.8	-30.3	-59.9		101.19	-96.5	0.5	-69.9		101.09	-95.2	6.6	-69.5		100.69	-89.5	31.7	-61.8		100.26	-82.4	35.6	-47.4		100.08	-78.8	36.4	-40.6		99.84	-74.0	36.1	-32.0		99.41	-64.4	30.9	-17.5		99.11	-56.8	22.9	-9.3		99.05	-55.2	21.0	-8.0	
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Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>99.00 -53.7 19.1 -6.9</div><div>98.99 -53.5 18.8 -6.7</div><div>98.56 -41.1 7.1 -1.4</div><div>98.37 -35.1 3.3 -0.4</div><div>98.14 -27.3 0.4 0.0</div><div>98.09 -25.8 0.1 0.0</div><div>98.05 -24.3 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.10 -0.1 0.0 0.0</div><div>105.50 -14.9 -9.8 -2.9</div><div>105.35 -18.6 -12.3 -4.6</div><div>105.10 -24.5 -17.1 -8.3</div><div>105.00 -26.8 -19.2 -10.1 -33.7</div><div>105.00 -26.8 14.5 -10.1</div><div>104.05 -48.5 -4.1 -5.6</div><div>103.23 -66.4 -17.1 -14.3</div><div>103.05 -70.3 -19.9 -17.6</div><div>102.55 -81.2 -27.9 -29.6</div><div>102.48 -82.8 -29.6 -31.6</div><div>102.23 -86.4 -32.0 -39.3</div><div>102.08 -87.8 -31.4 -44.1</div><div>101.88 -88.7 -28.3 -50.1</div><div>101.85 -88.7 -27.5 -51.0</div><div>101.80 -88.7 -26.2 -52.3</div><div>101.19 -84.1 0.6 -60.9</div><div>101.09 -83.0 5.8 -60.5</div><div>100.69 -78.0 27.7 -53.8</div><div>100.26 -71.8 31.0 -41.3</div><div>100.08 -68.7 31.7 -35.3</div><div>99.84 -64.6 31.4 -27.8</div><div>99.41 -56.2 26.8 -15.2</div><div>99.11 -49.5 19.9 -8.1</div><div>99.05 -48.2 18.3 -7.0</div><div>99.00 -46.9 16.6 -6.0</div><div>98.99 -46.6 16.4 -5.8</div><div>98.56 -35.9 6.2 -1.2</div><div>98.37 -30.7 2.8 -0.3</div><div>98.14 -23.9 0.3 0.0</div><div>98.09 -22.6 0.1 0.0</div><div>98.05 -21.3 0.0 0.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.10 -0.1 0.0 0.0</div><div>105.50 -14.9 -9.8 -2.9</div><div>105.35 -18.6 -12.3 -4.6</div><div>105.10 -24.5 -17.1 -8.3</div><div>105.00 -26.8 -19.2 -10.1 -33.7</div><div>105.00 -26.8 14.5 -10.1</div><div>104.05 -48.5 -4.1 -5.6</div><div>103.23 -66.4 -17.1 -14.3</div><div>103.05 -70.3 -19.9 -17.6</div><div>102.55 -81.2 -27.9 -29.6</div><div>102.48 -82.8 -29.6 -31.6</div><div>102.23 -86.4 -32.0 -39.3</div><div>102.08 -87.8 -31.4 -44.1</div><div>101.88 -88.7 -28.3 -50.1</div><div>101.85 -88.7 -27.5 -51.0</div><div>101.80 -88.7 -26.2 -52.3</div><div>101.19 -84.1 0.6 -60.9</div><div>101.09 -83.0 5.8 -60.5</div><div>100.69 -78.0 27.7 -53.8</div><div>100.26 -71.8 31.0 -41.3</div><div>100.08 -68.7 31.7 -35.3</div><div>99.84 -64.6 31.4 -27.8</div></div></div></div>					
Schnitt: Anlage Q2 Schnitt 8L				Seite Anlage Q2/28	
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																								
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(q,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.88</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.85</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.19</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.26</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.84</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.14</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr></table></div></div></div>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.10	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.35	0.0	0.0	0.0		105.10	0.0	0.0	0.0		105.00	0.0	0.0	0.0	0.0	104.05	0.0	0.0	0.0		103.23	0.0	0.0	0.0		103.05	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.48	0.0	0.0	0.0		102.23	0.0	0.0	0.0		102.08	0.0	0.0	0.0		101.88	0.0	0.0	0.0		101.85	0.0	0.0	0.0		101.80	0.0	0.0	0.0		101.19	0.0	0.0	0.0		101.09	0.0	0.0	0.0		100.69	0.0	0.0	0.0		100.26	0.0	0.0	0.0		100.08	0.0	0.0	0.0		99.84	0.0	0.0	0.0		99.41	0.0	0.0	0.0		99.11	0.0	0.0	0.0		99.05	0.0	0.0	0.0		99.00	0.0	0.0	0.0		98.99	0.0	0.0	0.0		98.56	0.0	0.0	0.0		98.37	0.0	0.0	0.0		98.14	0.0	0.0	0.0		98.09	0.0	0.0	0.0		98.05	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-1.1	-	-	-	106.10	-1.1	-	-	-	106.10	-1.1	-	-	-	106.05	-1.1	-	-	-	105.55	-1.1	-	-	-	105.50	-1.1	-	-	-	105.50	-1.1	-	-	-	105.45	-1.1	-	-	-	105.40	-1.1	-	-	-	105.35	-1.2	-	-	-	105.35	-1.2	-	-	-	105.30	-1.2	-	-	-	105.15	-1.2	-	-	-	105.10	-1.2	-	-	-	105.10	-1.2	-	-	-	105.05	-1.2	-	-	-	105.05	-1.2	-	-	-	105.00	-1.2	-	-	-	105.00	-1.2	-	-	-	104.95	-1.2	-	-	-
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101.85	-1.4	33.54	46.94	47.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.80	-1.4	33.54	47.18	50.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.80	-1.4	35.83	50.40	50.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.75	-1.4	35.83	50.66	54.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-1.5	50.00	75.09	88.87																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-1.5	50.00	75.60	92.35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.04	-1.5	50.00	77.21	102.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.74	-1.6	50.00	80.77	123.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.69	-1.6	50.00	81.41	127.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.64	-1.6	50.00	82.02	130.46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.31	-1.7	50.00	86.54	153.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.26	-1.7	50.00	87.22	156.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.22	-1.8	50.00	87.91	159.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.12	-1.8	50.00	89.31	166.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.08	-1.8	50.00	90.02	169.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.03	-1.8	50.00	90.74	172.91																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.89	-1.9	50.00	92.93	182.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.84	-1.9	50.00	93.67	185.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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99.79	-1.9	50.00	94.42	189.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.46	-2.0	50.00	99.76	212.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.41	-2.0	50.00	100.54	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.41	-2.0	50.00	100.54	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.36	-2.0	50.00	101.38	218.88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.16	-2.1	50.00	104.75	232.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.11	-2.1	50.00	105.59	236.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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99.00	-2.1	50.00	107.49	244.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
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Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																																																																																																																																																				
Auftraggeber:	Stadtverwaltung Leipzig	-																																																																																																																																																				
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024																																																																																																																																																				
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 14_BS 8_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (zweiseitig begrenzt) <table><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>2.40</td><td>5.83</td><td>8.06</td><td>101.85</td><td>98.14</td><td>92.71</td><td>92.97</td><td>89.22</td><td>nein</td></tr><tr><td>2</td><td>117.47</td><td>1.82</td><td>2.49</td><td>101.85</td><td>100.69</td><td>99.00</td><td>99.11</td><td>97.95</td><td>nein</td></tr><tr><td>3</td><td>97.83</td><td>2.49</td><td>3.16</td><td>101.85</td><td>100.26</td><td>97.95</td><td>98.37</td><td>96.90</td><td>nein</td></tr><tr><td>4</td><td>78.17</td><td>3.16</td><td>3.83</td><td>101.85</td><td>99.84</td><td>96.90</td><td>97.64</td><td>95.85</td><td>nein</td></tr><tr><td>5</td><td>58.52</td><td>3.83</td><td>4.49</td><td>101.85</td><td>99.41</td><td>95.85</td><td>96.90</td><td>94.81</td><td>nein</td></tr><tr><td>6</td><td>38.88</td><td>4.49</td><td>5.16</td><td>101.85</td><td>98.99</td><td>94.81</td><td>96.16</td><td>93.76</td><td>nein</td></tr><tr><td>7</td><td>19.22</td><td>5.16</td><td>5.83</td><td>101.85</td><td>98.56</td><td>93.76</td><td>95.43</td><td>92.71</td><td>nein</td></tr><tr><td>8</td><td>10.00</td><td>0.00</td><td>3.17</td><td>106.10</td><td>106.10</td><td>103.23</td><td>101.88</td><td></td><td>nein</td></tr></table><div>Steuerparameter = 0.50</div><div>Zusatzdrücke <table><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr><tr><td>2</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td>Wasserdruck</td></tr></table></div><div>Kraftträger Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv) <table><tr><th>Nr.</th><th>Tiefe</th><th>M_{g,k}</th><th>M_{q,k}</th><th>H_{g,k}</th><th>H_{q,k}</th><th>V_{g,k}</th><th>V_{q,k}</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN·m/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>105.50</td><td>-12.50</td><td>0.00</td><td>0.00</td><td>0.00</td><td>19.50</td><td>0.00</td></tr></table></div><div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.05 m</div></div>			Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein	2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein	3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein	4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein	5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein	6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein	7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein	8	10.00	0.00	3.17	106.10	106.10	103.23	101.88		nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	45.90	0.00	100.69	92.70	Ständig	2	0.00	29.50	105.50	102.55	Wasserdruck	Nr.	Tiefe	M _{g,k}	M _{q,k}	H _{g,k}	H _{q,k}	V _{g,k}	V _{q,k}	[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	1	105.50	-12.50	0.00	0.00	0.00	19.50	0.00
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Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																				

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 102.48 5.000 5.000 102.48 80.00 50.000 50.000 Ausnutzungsgrad mue = 390.630 / 427.031 = 0.915 Bettungslager Bh,d = 390.630 kN/m Erdwiderstand Eph,d = 427.031 kN/m Anker und Steifen N,d' = Bemessungswert (Steifen) mit BS-P (1.275/1.50) Nw,k kann Anteil aus Einzelkräften beinhalten. Nr. y Neigung Länge N,d N(g+q+w),k N(g+w),k Nw,k EA EI N,d' [-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN·m²/m] [kN/m] 1 103.72 0.00 8.30 -79.32 -67.19 -67.19 -44.77 3.900E+7 2.100E+7 -85.67 Steife Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max M,d [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig x y wx,d wy,d N,d Q,d M,d [m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m] -8.30 103.72 -1.2 0.0 -79.51 0.00 0.00 -7.47 103.72 -1.2 0.0 -79.51 0.00 0.00 -7.47 103.72 -1.2 0.0 -79.51 0.00 0.00 -6.64 103.72 -1.2 0.0 -79.51 0.00 0.00 -5.81 103.72 -1.2 0.0 -79.51 0.00 0.00 -4.98 103.72 -1.2 0.0 -79.51 0.00 0.00 -4.15 103.72 -1.2 0.0 -79.51 0.00 0.00 -3.32 103.72 -1.2 0.0 -79.51 0.00 0.00 -2.49 103.72 -1.2 0.0 -79.51 0.00 0.00 -1.66 103.72 -1.2 0.0 -79.51 0.00 0.00 -0.83 103.72 -1.3 0.0 -79.51 0.00 0.00 0.00 103.72 -1.3 0.0 -79.51 0.00 0.00 Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_8\Linkes_Ufer\12_BS_8_LF2.1 (ohne Lasten).vrb eingelesen. Anker/Steife Tiefe Vorverformung [-] [m] [m] 1 103.72 -0.0011 Bodenkennwerte Schicht UK gam,k gam',k phi,k c(pas),k c(akt),k d(p)/phi d(a)/phi qc cu,k [-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²] 1 105.35 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00 2 102.48 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00 3 101.85 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00 4 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00 Erhöhte aktive Erddruckbeiwerte Beziehung: (1 - Faktor) · kah + Faktor · k0 Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit phi = 40 ° Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst. Schicht UK kagh kach phi,k delta theta kagh(40°) [-] [mNHN] [-] [-] [°] [°] [°] [-] 1 105.35 0.390 0.461 30.000 10.00 57.80 0.179 2 102.48 0.501 0.555 22.500 7.50 53.61 0.179 3 101.85 0.357 0.433 32.500 10.84 59.19 0.179 4 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div>		
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/33
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																										
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<div>Aktive Erddruckkoordinaten ([g+q],k) mit Zusatzdrücke</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.100</td><td>106.097</td><td>0.000</td><td>3.915</td><td>0.00</td><td>0.00</td></tr><tr><td>106.097</td><td>105.500</td><td>3.915</td><td>8.339</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.350</td><td>8.339</td><td>8.924</td><td>0.00</td><td>1.50</td></tr><tr><td>105.350</td><td>105.100</td><td>9.800</td><td>10.863</td><td>1.50</td><td>4.00</td></tr><tr><td>105.100</td><td>104.100</td><td>10.863</td><td>15.118</td><td>4.00</td><td>14.00</td></tr><tr><td>104.100</td><td>103.720</td><td>15.118</td><td>16.735</td><td>14.00</td><td>17.80</td></tr><tr><td>103.720</td><td>103.231</td><td>16.735</td><td>18.816</td><td>17.80</td><td>22.69</td></tr><tr><td>103.231</td><td>103.050</td><td>18.816</td><td>18.915</td><td>22.69</td><td>24.50</td></tr><tr><td>103.050</td><td>102.550</td><td>18.915</td><td>19.187</td><td>24.50</td><td>29.50</td></tr><tr><td>102.550</td><td>102.480</td><td>19.187</td><td>19.225</td><td>0.00</td><td>0.00</td></tr><tr><td>102.480</td><td>102.081</td><td>14.883</td><td>15.464</td><td>0.00</td><td>0.00</td></tr><tr><td>102.081</td><td>101.882</td><td>15.464</td><td>15.755</td><td>0.00</td><td>0.00</td></tr><tr><td>101.882</td><td>101.850</td><td>15.755</td><td>15.886</td><td>0.00</td><td>0.00</td></tr><tr><td>101.850</td><td>101.800</td><td>15.886</td><td>16.092</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>101.346</td><td>16.092</td><td>17.953</td><td>0.00</td><td>0.00</td></tr><tr><td>101.346</td><td>101.094</td><td>17.953</td><td>18.987</td><td>0.00</td><td>0.00</td></tr><tr><td>101.094</td><td>100.691</td><td>18.987</td><td>20.641</td><td>0.00</td><td>0.00</td></tr><tr><td>100.691</td><td>100.265</td><td>66.544</td><td>76.374</td><td>0.00</td><td>0.00</td></tr><tr><td>100.265</td><td>100.076</td><td>76.374</td><td>83.604</td><td>0.00</td><td>0.00</td></tr><tr><td>100.076</td><td>99.839</td><td>83.604</td><td>92.642</td><td>0.00</td><td>0.00</td></tr><tr><td>99.839</td><td>99.413</td><td>92.642</td><td>112.926</td><td>0.00</td><td>0.00</td></tr><tr><td>99.413</td><td>99.110</td><td>112.926</td><td>129.155</td><td>0.00</td><td>0.00</td></tr><tr><td>99.110</td><td>99.054</td><td>129.155</td><td>130.137</td><td>0.00</td><td>0.00</td></tr><tr><td>99.054</td><td>98.997</td><td>130.137</td><td>131.120</td><td>0.00</td><td>0.00</td></tr><tr><td>98.997</td><td>98.988</td><td>131.120</td><td>131.050</td><td>0.00</td><td>0.00</td></tr><tr><td>98.988</td><td>98.561</td><td>131.050</td><td>129.338</td><td>0.00</td><td>0.00</td></tr><tr><td>98.561</td><td>98.373</td><td>129.338</td><td>128.849</td><td>0.00</td><td>0.00</td></tr><tr><td>98.373</td><td>98.136</td><td>128.849</td><td>122.623</td><td>0.00</td><td>0.00</td></tr><tr><td>98.136</td><td>98.092</td><td>122.623</td><td>121.484</td><td>0.00</td><td>0.00</td></tr><tr><td>98.092</td><td>98.049</td><td>121.484</td><td>120.345</td><td>0.00</td><td>0.00</td></tr><tr><td>98.049</td><td>97.950</td><td>120.345</td><td>117.764</td><td>0.00</td><td>0.00</td></tr><tr><td>97.950</td><td>97.636</td><td>117.764</td><td>116.163</td><td>0.00</td><td>0.00</td></tr><tr><td>97.636</td><td>96.901</td><td>116.163</td><td>100.916</td><td>0.00</td><td>0.00</td></tr><tr><td>96.901</td><td>96.162</td><td>100.916</td><td>88.742</td><td>0.00</td><td>0.00</td></tr><tr><td>96.162</td><td>95.854</td><td>88.742</td><td>81.881</td><td>0.00</td><td>0.00</td></tr><tr><td>95.854</td><td>95.426</td><td>81.881</td><td>76.536</td><td>0.00</td><td>0.00</td></tr><tr><td>95.426</td><td>94.807</td><td>76.536</td><td>67.247</td><td>0.00</td><td>0.00</td></tr><tr><td>94.807</td><td>93.759</td><td>67.247</td><td>58.489</td><td>0.00</td><td>0.00</td></tr><tr><td>93.759</td><td>92.968</td><td>58.489</td><td>55.319</td><td>0.00</td><td>0.00</td></tr><tr><td>92.968</td><td>92.711</td><td>55.319</td><td>54.231</td><td>0.00</td><td>0.00</td></tr><tr><td>92.711</td><td>92.700</td><td>54.231</td><td>54.210</td><td>0.00</td><td>0.00</td></tr><tr><td>92.700</td><td>89.216</td><td>54.210</td><td>67.705</td><td>0.00</td><td>0.00</td></tr><tr><td>89.216</td><td>80.000</td><td>67.705</td><td>105.505</td><td>0.00</td><td>0.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>106.10</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>101.85</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckkoordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.05</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-7.22</td><td>-8.33</td></tr><tr><td>102.48</td><td>102.08</td><td>-2.20</td><td>-19.15</td></tr><tr><td>102.08</td><td>101.88</td><td>-19.15</td><td>-27.62</td></tr></tbody></table>						von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.097	0.000	3.915	0.00	0.00	106.097	105.500	3.915	8.339	0.00	0.00	105.500	105.350	8.339	8.924	0.00	1.50	105.350	105.100	9.800	10.863	1.50	4.00	105.100	104.100	10.863	15.118	4.00	14.00	104.100	103.720	15.118	16.735	14.00	17.80	103.720	103.231	16.735	18.816	17.80	22.69	103.231	103.050	18.816	18.915	22.69	24.50	103.050	102.550	18.915	19.187	24.50	29.50	102.550	102.480	19.187	19.225	0.00	0.00	102.480	102.081	14.883	15.464	0.00	0.00	102.081	101.882	15.464	15.755	0.00	0.00	101.882	101.850	15.755	15.886	0.00	0.00	101.850	101.800	15.886	16.092	0.00	0.00	101.800	101.346	16.092	17.953	0.00	0.00	101.346	101.094	17.953	18.987	0.00	0.00	101.094	100.691	18.987	20.641	0.00	0.00	100.691	100.265	66.544	76.374	0.00	0.00	100.265	100.076	76.374	83.604	0.00	0.00	100.076	99.839	83.604	92.642	0.00	0.00	99.839	99.413	92.642	112.926	0.00	0.00	99.413	99.110	112.926	129.155	0.00	0.00	99.110	99.054	129.155	130.137	0.00	0.00	99.054	98.997	130.137	131.120	0.00	0.00	98.997	98.988	131.120	131.050	0.00	0.00	98.988	98.561	131.050	129.338	0.00	0.00	98.561	98.373	129.338	128.849	0.00	0.00	98.373	98.136	128.849	122.623	0.00	0.00	98.136	98.092	122.623	121.484	0.00	0.00	98.092	98.049	121.484	120.345	0.00	0.00	98.049	97.950	120.345	117.764	0.00	0.00	97.950	97.636	117.764	116.163	0.00	0.00	97.636	96.901	116.163	100.916	0.00	0.00	96.901	96.162	100.916	88.742	0.00	0.00	96.162	95.854	88.742	81.881	0.00	0.00	95.854	95.426	81.881	76.536	0.00	0.00	95.426	94.807	76.536	67.247	0.00	0.00	94.807	93.759	67.247	58.489	0.00	0.00	93.759	92.968	58.489	55.319	0.00	0.00	92.968	92.711	55.319	54.231	0.00	0.00	92.711	92.700	54.231	54.210	0.00	0.00	92.700	89.216	54.210	67.705	0.00	0.00	89.216	80.000	67.705	105.505	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.10	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	101.85	6.006	6.054	32.500	-21.68	16.35	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.05	102.55	0.00	0.00	102.55	102.48	-7.22	-8.33	102.48	102.08	-2.20	-19.15	102.08	101.88	-19.15	-27.62	Schnitt: 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100.265	100.076	76.374	83.604	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
100.076	99.839	83.604	92.642	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
99.839	99.413	92.642	112.926	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
99.413	99.110	112.926	129.155	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
99.110	99.054	129.155	130.137	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
99.054	98.997	130.137	131.120	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.997	98.988	131.120	131.050	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.988	98.561	131.050	129.338	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.561	98.373	129.338	128.849	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.373	98.136	128.849	122.623	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.136	98.092	122.623	121.484	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.092	98.049	121.484	120.345	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
98.049	97.950	120.345	117.764	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
97.950	97.636	117.764	116.163	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
97.636	96.901	116.163	100.916	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
96.901	96.162	100.916	88.742	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
96.162	95.854	88.742	81.881	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
95.854	95.426	81.881	76.536	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
95.426	94.807	76.536	67.247	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
94.807	93.759	67.247	58.489	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
93.759	92.968	58.489	55.319	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
92.968	92.711	55.319	54.231	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
92.711	92.700	54.231	54.210	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
92.700	89.216	54.210	67.705	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
89.216	80.000	67.705	105.505	0.00	0.00																																																																																																																																																																																																																																																																																																																																																									
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2	102.48	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																																																																																																																																								
3	101.85	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																																																																								
4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																																																																								
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103.05	102.55	0.00	0.00																																																																																																																																																																																																																																																																																																																																																											
102.55	102.48	-7.22	-8.33																																																																																																																																																																																																																																																																																																																																																											
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102.08	101.88	-19.15	-27.62																																																																																																																																																																																																																																																																																																																																																											
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Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):									
Auftraggeber: Stadtverwaltung Leipzig											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>101.88101.85-27.62-28.98</div><div>101.85101.80-28.98-31.12</div><div>101.80101.35-31.12-50.40</div><div>101.35101.09-50.40-61.11</div><div>101.09100.69-61.11-78.26</div><div>100.69100.26-78.26-96.34</div><div>100.26100.08-96.34-104.39</div><div>100.0899.84-104.39-114.46</div><div>99.8499.41-114.46-132.54</div><div>99.4199.11-132.54-145.43</div><div>99.1199.05-145.43-147.83</div><div>99.0599.00-147.83-150.23</div><div>99.0098.99-150.23-150.63</div><div>98.9998.56-150.63-168.75</div><div>98.5698.37-168.75-176.77</div><div>98.3798.14-176.77-186.83</div><div>98.1498.09-186.83-188.69</div><div>98.0998.05-188.69-190.54</div><div>98.0597.95-190.54-194.73</div><div>97.9597.64-194.73-208.07</div><div>97.6496.90-208.07-239.30</div><div>96.9096.16-239.30-270.71</div><div>96.1695.85-270.71-283.81</div><div>95.8595.43-283.81-302.00</div><div>95.4394.81-302.00-328.31</div><div>94.8193.76-328.31-372.88</div><div>93.7692.97-372.88-406.48</div><div>92.9792.71-406.48-417.38</div><div>92.7192.70-417.38-417.87</div><div>92.7089.22-417.87-565.95</div><div>89.2280.00-565.95-957.65</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div><div><div>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.10</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-14.6</div><div>-4.2</div><div>-1.1</div><div></div></div><div><div>105.50</div><div>-38.0</div><div>-4.2</div><div>-16.1</div><div></div></div><div><div>105.35</div><div>-41.8</div><div>-5.8</div><div>-16.9</div><div></div></div><div><div>105.10</div><div>-48.0</div><div>-9.6</div><div>-18.8</div><div></div></div><div><div>104.10</div><div>-73.8</div><div>-35.4</div><div>-39.9</div><div></div></div><div><div>103.72</div><div>-83.9</div><div>-49.6</div><div>-55.9</div><div>-79.5</div></div><div><div>103.72</div><div>-83.9</div><div>29.9</div><div>-55.9</div><div></div></div><div><div>103.23</div><div>-97.3</div><div>8.0</div><div>-46.5</div><div></div></div><div><div>103.05</div><div>-102.2</div><div>-1.0</div><div>-45.8</div><div></div></div><div><div>102.55</div><div>-116.1</div><div>-28.2</div><div>-53.0</div><div></div></div><div><div>102.48</div><div>-117.6</div><div>-29.7</div><div>-55.0</div><div></div></div><div><div>102.08</div><div>-123.5</div><div>-29.5</div><div>-67.2</div><div></div></div><div><div>101.88</div><div>-124.5</div><div>-24.8</div><div>-72.7</div><div></div></div><div><div>101.85</div><div>-124.5</div><div>-23.7</div><div>-73.5</div><div></div></div><div><div>101.80</div><div>-124.6</div><div>-21.9</div><div>-74.6</div><div></div></div><div><div>101.35</div><div>-121.9</div><div>0.5</div><div>-79.7</div><div></div></div><div><div>101.09</div><div>-119.8</div><div>14.4</div><div>-77.9</div><div></div></div><div><div>100.69</div><div>-115.6</div><div>37.8</div><div>-67.4</div><div></div></div><div><div>100.26</div><div>-110.1</div><div>39.9</div><div>-50.8</div><div></div></div><div><div>100.08</div><div>-107.2</div><div>40.1</div><div>-43.2</div><div></div></div><div><div>99.84</div><div>-103.3</div><div>39.0</div><div>-33.8</div><div></div></div><div><div>99.41</div><div>-95.1</div><div>32.6</div><div>-18.4</div><div></div></div><div><div>99.11</div><div>-88.3</div><div>24.0</div><div>-9.7</div><div></div></div><div><div>99.05</div><div>-87.0</div><div>22.0</div><div>-8.4</div><div></div></div><div><div>99.00</div><div>-85.6</div><div>20.0</div><div>-7.2</div><div></div></div><div><div>98.99</div><div>-85.4</div><div>19.7</div><div>-7.0</div><div></div></div><div><div>98.56</div><div>-74.2</div><div>7.4</div><div>-1.4</div><div></div></div><div><div>98.37</div><div>-68.7</div><div>3.4</div><div>-0.4</div><div></div></div><div><div>98.14</div><div>-61.5</div><div>0.4</div><div>0.0</div><div></div></div><div><div>98.09</div><div>-60.1</div><div>0.1</div><div>0.0</div><div></div></div><div><div>98.05</div><div>-58.7</div><div>0.0</div><div>0.0</div><div></div></div></div></div> <tr><td colspan="2">Schnitt: Anlage Q2 Schnitt 8L</td><td>Seite Anlage Q2/35</td></tr> <tr><td colspan="2">Kapitel: 5 LF 3 (BS-T, mit Lasten)</td><td>Archiv Nr.: 2004-0025</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/35	Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
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Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025									
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025									



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																									
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<div><div>Schnittgrößen ([g+q+w],k)</div><table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th><th></th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th></th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-12.7</td><td>-3.7</td><td>-1.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-32.2</td><td>-3.7</td><td>-13.5</td><td></td><td></td></tr><tr><td>105.35</td><td>-35.5</td><td>-5.1</td><td>-14.1</td><td></td><td></td></tr><tr><td>105.10</td><td>-40.9</td><td>-8.3</td><td>-15.8</td><td></td><td></td></tr><tr><td>104.10</td><td>-63.3</td><td>-30.3</td><td>-33.9</td><td></td><td></td></tr><tr><td>103.72</td><td>-72.1</td><td>-42.4</td><td>-47.7</td><td>-67.2</td><td></td></tr><tr><td>103.72</td><td>-72.1</td><td>24.8</td><td>-47.7</td><td></td><td></td></tr><tr><td>103.23</td><td>-83.7</td><td>6.2</td><td>-40.0</td><td></td><td></td></tr><tr><td>103.05</td><td>-88.1</td><td>-1.5</td><td>-39.6</td><td></td><td></td></tr><tr><td>102.55</td><td>-100.1</td><td>-24.5</td><td>-46.0</td><td></td><td></td></tr><tr><td>102.48</td><td>-101.6</td><td>-25.9</td><td>-47.7</td><td></td><td></td></tr><tr><td>102.08</td><td>-106.7</td><td>-25.7</td><td>-58.4</td><td></td><td></td></tr><tr><td>101.88</td><td>-107.6</td><td>-21.6</td><td>-63.1</td><td></td><td></td></tr><tr><td>101.85</td><td>-107.6</td><td>-20.7</td><td>-63.8</td><td></td><td></td></tr><tr><td>101.80</td><td>-107.6</td><td>-19.1</td><td>-64.8</td><td></td><td></td></tr><tr><td>101.35</td><td>-105.4</td><td>0.4</td><td>-69.3</td><td></td><td></td></tr><tr><td>101.09</td><td>-103.5</td><td>12.5</td><td>-67.7</td><td></td><td></td></tr><tr><td>100.69</td><td>-99.9</td><td>32.8</td><td>-58.6</td><td></td><td></td></tr><tr><td>100.26</td><td>-95.1</td><td>34.7</td><td>-44.2</td><td></td><td></td></tr><tr><td>100.08</td><td>-92.6</td><td>34.8</td><td>-37.6</td><td></td><td></td></tr><tr><td>99.84</td><td>-89.2</td><td>33.9</td><td>-29.4</td><td></td><td></td></tr><tr><td>99.41</td><td>-82.0</td><td>28.3</td><td>-16.0</td><td></td><td></td></tr><tr><td>99.11</td><td>-76.2</td><td>20.8</td><td>-8.4</td><td></td><td></td></tr><tr><td>99.05</td><td>-75.0</td><td>19.1</td><td>-7.3</td><td></td><td></td></tr><tr><td>99.00</td><td>-73.8</td><td>17.4</td><td>-6.3</td><td></td><td></td></tr><tr><td>98.99</td><td>-73.6</td><td>17.1</td><td>-6.1</td><td></td><td></td></tr><tr><td>98.56</td><td>-63.9</td><td>6.4</td><td>-1.2</td><td></td><td></td></tr><tr><td>98.37</td><td>-59.1</td><td>3.0</td><td>-0.4</td><td></td><td></td></tr><tr><td>98.14</td><td>-52.8</td><td>0.3</td><td>0.0</td><td></td><td></td></tr><tr><td>98.09</td><td>-51.6</td><td>0.1</td><td>0.0</td><td></td><td></td></tr><tr><td>98.05</td><td>-50.4</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table><div><div>Schnittgrößen 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<div><div><div>98.09 -51.6 0.1 0.0</div><div>98.05 -50.4 0.0 0.0</div></div><div><div>Schnittgrößen (q,k)</div><table><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-3.8</td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.88</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.85</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.80</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.26</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.84</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.14</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><table><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.19</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.10</td><td>-1.1</td><td>-</td><td>-</td><td>-</td></tr></table></div></div>						Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.10	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.35	0.0	0.0	0.0		105.10	0.0	0.0	0.0		104.10	0.0	0.0	0.0		103.72	0.0	0.0	0.0	-3.8	103.23	0.0	0.0	0.0		103.05	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.48	0.0	0.0	0.0		102.08	0.0	0.0	0.0		101.88	0.0	0.0	0.0		101.85	0.0	0.0	0.0		101.80	0.0	0.0	0.0		101.35	0.0	0.0	0.0		101.09	0.0	0.0	0.0		100.69	0.0	0.0	0.0		100.26	0.0	0.0	0.0		100.08	0.0	0.0	0.0		99.84	0.0	0.0	0.0		99.41	0.0	0.0	0.0		99.11	0.0	0.0	0.0		99.05	0.0	0.0	0.0		99.00	0.0	0.0	0.0		98.99	0.0	0.0	0.0		98.56	0.0	0.0	0.0		98.37	0.0	0.0	0.0		98.14	0.0	0.0	0.0		98.09	0.0	0.0	0.0		98.05	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-1.2	-	-	-	106.10	-1.2	-	-	-	106.10	-1.2	-	-	-	106.05	-1.2	-	-	-	105.55	-1.2	-	-	-	105.50	-1.2	-	-	-	105.50	-1.2	-	-	-	105.45	-1.2	-	-	-	105.40	-1.2	-	-	-	105.35	-1.2	-	-	-	105.35	-1.2	-	-	-	105.30	-1.2	-	-	-	105.15	-1.2	-	-	-	105.10	-1.1	-	-	-	105.10	-1.1	-	-	-	105.05	-1.1	-	-	-	104.15	-1.1	-	-	-	104.10	-1.1	-	-	-	104.10	-1.1	-	-	-	104.05	-1.1	-	-	-	103.77	-1.1	-	-	-	103.72	-1.1	-	-	-	103.72	-1.1	-	-	-	103.66	-1.1	-	-	-	103.28	-1.1	-	-	-	103.23	-1.1	-	-	-	103.23	-1.1	-	-	-	103.19	-1.1	-	-	-	103.10	-1.1	-	-	-
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101.88	-1.2	37.06	44.72	44.89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.85	-1.2	37.06	44.89	47.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.85	-1.2	38.64	46.80	47.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.80	-1.2	38.64	47.09	50.57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.75	-1.2	41.23	50.57	54.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.40	-1.3	50.00	64.44	78.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.35	-1.3	50.00	64.95	81.90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.30	-1.3	50.00	65.47	85.38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-1.3	50.00	67.12	95.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-1.4	50.00	67.69	99.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.04	-1.4	50.00	68.29	102.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.74	-1.4	50.00	72.14	123.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.69	-1.5	50.00	72.83	127.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.64	-1.5	50.00	73.50	130.46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.31	-1.6	50.00	78.39	153.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.26	-1.6	50.00	79.12	156.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.26	-1.6	50.00	79.12	156.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.22	-1.6	50.00	79.87	159.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.12	-1.6	50.00	81.39	166.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.08	-1.6	50.00	82.16	169.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.03	-1.7	50.00	82.93	172.91																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.89	-1.7	50.00	85.30	182.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.84	-1.7	50.00	86.10	185.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.84	-1.7	50.00	86.10	185.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.79	-1.7	50.00	86.91	189.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.46	-1.9	50.00	92.69	212.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.41	-1.9	50.00	93.53	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.41	-1.9	50.00	93.53	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.36	-1.9	50.00	94.43	218.88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.16	-2.0	50.00	98.07	232.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.11	-2.0	50.00	98.98	236.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.11	-2.0	50.00	98.98	236.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.05	-2.0	50.00	100.00	240.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.05	-2.0	50.00	100.00	240.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.00	-2.0	50.00	101.03	244.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.00	-2.0	50.00	101.03	244.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.99	-2.0	50.00	101.20	244.78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.99	-2.0	50.00	101.20	244.78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.94	-2.0	50.00	102.06	248.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.61	-2.2	50.00	108.12	270.94																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.56	-2.2	50.00	108.99	274.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.56	-2.2	50.00	108.99	274.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.51	-2.2	50.00	109.85	277.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.42	-2.2	50.00	111.58	284.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.37	-2.2	50.00	112.45	287.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.37	-2.2	50.00	112.45	287.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.33	-2.3	50.00	113.32	290.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.18	-2.3	50.00	115.92	300.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.14	-2.3	50.00	116.79	303.61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div><div><div>98.14</div><div>-2.3</div><div>50.00</div><div>116.79</div><div>303.61</div></div><div><div>98.09</div><div>-2.4</div><div>50.00</div><div>117.59</div><div>306.61</div></div><div><div>98.09</div><div>-2.4</div><div>50.00</div><div>117.59</div><div>306.61</div></div><div><div>98.05</div><div>-2.4</div><div>50.00</div><div>118.39</div><div>309.62</div></div></div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.02100428 Theoretischer Fußpunkt = 98.049 m</div> <div>Einbindetiefe tg = 4.50 m Profillänge = 8.05 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$ $G_{k} = 152.33 \text{ kN/m}$ $G'_{k} = 0.00 \text{ kN/m}$ $P_{v,k} = 19.50 \text{ kN/m}$ $E_{av,k} = 69.26 \text{ kN/m}$ ($E_{ah,k} = 363.41 \text{ kN/m}$) $B_{v,k} = 135.04$ Summe $V_{k} = 106.05 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand $D = 0.88 \text{ m}$ Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$ (gemittelt von 98.93 bis 95.41 m) $\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2$ $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th>$q_{s,k} [\text{kN/m}^2]$</th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>102.48</td><td>101.85</td><td>55.00</td><td>s3: Flussskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table><div>Mantelfläche bis 98.05 m = $1.000 \text{ m}^2/\text{m}$ $\Rightarrow R_{s1,d}$ $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 243.65 / 1.40 = 174.04 \text{ kN/m}$ $R_{d} = R_{b,d} + R_{s1,d} = 1039.08 \text{ kN/m}$</div></div> <div>Einwirkungen $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 182.80 - 0.00 + 79.65 + 23.40 = 285.84 \text{ kN/m}$ $\Rightarrow \mu = V_{d} / R_{d} = 285.84 / 1039.08 = 0.28$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flussskies, -sand (über GS)	101.85	98.05	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
102.55	102.48	0.00	S2: Auelehm (über GS)															
102.48	101.85	55.00	s3: Flussskies, -sand (über GS)															
101.85	98.05	55.00	s3: Flussskies, -sand															
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/39																
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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																														
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																																														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																														
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 15_BS 8_LF4 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.10 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Lasten (zweiseitig begrenzt) <table><tr><th>Nr.</th><th>sig(v)</th><th>x(Luftseite)</th><th>x(Erdseite)</th><th>Tiefe</th><th>y(1)</th><th>y(2)</th><th>y(3)</th><th>y(4)</th><th>Verkehrslast</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>2.40</td><td>5.83</td><td>8.06</td><td>101.85</td><td>98.14</td><td>92.71</td><td>92.97</td><td>89.22</td><td>nein</td></tr><tr><td>2</td><td>117.47</td><td>1.82</td><td>2.49</td><td>101.85</td><td>100.69</td><td>99.00</td><td>99.11</td><td>97.95</td><td>nein</td></tr><tr><td>3</td><td>97.83</td><td>2.49</td><td>3.16</td><td>101.85</td><td>100.26</td><td>97.95</td><td>98.37</td><td>96.90</td><td>nein</td></tr><tr><td>4</td><td>78.17</td><td>3.16</td><td>3.83</td><td>101.85</td><td>99.84</td><td>96.90</td><td>97.64</td><td>95.85</td><td>nein</td></tr><tr><td>5</td><td>58.52</td><td>3.83</td><td>4.49</td><td>101.85</td><td>99.41</td><td>95.85</td><td>96.90</td><td>94.81</td><td>nein</td></tr><tr><td>6</td><td>38.88</td><td>4.49</td><td>5.16</td><td>101.85</td><td>98.99</td><td>94.81</td><td>96.16</td><td>93.76</td><td>nein</td></tr><tr><td>7</td><td>19.22</td><td>5.16</td><td>5.83</td><td>101.85</td><td>98.56</td><td>93.76</td><td>95.43</td><td>92.71</td><td>nein</td></tr><tr><td>8</td><td>10.00</td><td>0.00</td><td>3.17</td><td>106.10</td><td>106.10</td><td>103.23</td><td>101.88</td><td></td><td>nein</td></tr></table><div>Steuerparameter = 0.50</div><div>Passivseite Lasten (einseitig begrenzt) <table><tr><th>Nr.</th><th>sigma</th><th>x(Luftseite)</th><th>Tiefe</th><th>y(oben)</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[m]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>1</td><td>3.30</td><td>0.00</td><td>102.55</td><td>102.55</td></tr></table><div>Zusatzdrücke <table><tr><th>Nr.</th><th>e(oben)</th><th>e(unten)</th><th>z(oben)</th><th>z(unten)</th><th>Typ</th></tr><tr><th>[-]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th><th>[-]</th></tr><tr><td>1</td><td>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr><tr><td>2</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td>Wasserdruck</td></tr></table></div></div></div>			Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast	[-]	[kN/m²]	[m]	[m]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[mNHN]	[-]	1	2.40	5.83	8.06	101.85	98.14	92.71	92.97	89.22	nein	2	117.47	1.82	2.49	101.85	100.69	99.00	99.11	97.95	nein	3	97.83	2.49	3.16	101.85	100.26	97.95	98.37	96.90	nein	4	78.17	3.16	3.83	101.85	99.84	96.90	97.64	95.85	nein	5	58.52	3.83	4.49	101.85	99.41	95.85	96.90	94.81	nein	6	38.88	4.49	5.16	101.85	98.99	94.81	96.16	93.76	nein	7	19.22	5.16	5.83	101.85	98.56	93.76	95.43	92.71	nein	8	10.00	0.00	3.17	106.10	106.10	103.23	101.88		nein	Nr.	sigma	x(Luftseite)	Tiefe	y(oben)	[-]	[kN/m²]	[m]	[mNHN]	[mNHN]	1	3.30	0.00	102.55	102.55	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	45.90	0.00	100.69	92.70	Ständig	2	0.00	29.50	105.50	102.55	Wasserdruck	<div>Schnitt: Anlage Q2 Schnitt 8L</div> <div>Kapitel: 6 LF 4 (BS-P, mit Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage Q2/40</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast																																																																																																																																							
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Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.50	-12.50	0.00	0.00	0.00	19.50	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 8.05 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.48	5.000	5.000
102.48	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 442.014 / 446.713 = 0.989$
Bettungslager $B_{h,d} = 442.014 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 446.713 \text{ kN/m}$

Anker und Steifen
 $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N,d'
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-79.78	-60.17	-60.17	-44.81	3.900E+7	2.100E+7	-76.72 Steife

Zusätzlich für Steifen
Steife I
Vertikallast [kN/m²/m]: 0.00
max $M_{d,d}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	wx,d	wy,d	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-1.4	0.0	-80.08	0.00	0.00
-7.47	103.72	-1.4	0.0	-80.08	0.00	0.00
-7.47	103.72	-1.4	0.0	-80.08	0.00	0.00
-6.64	103.72	-1.4	0.0	-80.08	0.00	0.00
-5.81	103.72	-1.4	0.0	-80.08	0.00	0.00
-4.98	103.72	-1.4	0.0	-80.08	0.00	0.00
-4.15	103.72	-1.4	0.0	-80.08	0.00	0.00
-3.32	103.72	-1.4	0.0	-80.08	0.00	0.00
-2.49	103.72	-1.4	0.0	-80.08	0.00	0.00
-1.66	103.72	-1.4	0.0	-80.08	0.00	0.00
-0.83	103.72	-1.4	0.0	-80.08	0.00	0.00
0.00	103.72	-1.4	0.0	-80.08	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_8\Linkes Ufer\12_BS_8_LF2.1 (ohne Lasten).vrb
eingeliesen.

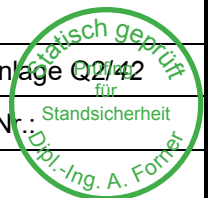
Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0011

Bodenkennwerte

Schicht	UK	gam,k	gam',k	phi,k	c(pas),k	c(akt),k	d(p)/phi	d(a)/phi	qc	cu,k
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.35	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.48	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	101.85	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00
4	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Schnitt:	Anlage Q2	Schnitt 8L	Seite Anlage Q2/41
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																														
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<p>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</p> <table border="1"> <thead> <tr> <th>Schicht</th> <th>UK</th> <th>k_{agh}</th> <th>k_{ach}</th> <th>$\phi_{i,k}$</th> <th>δ</th> <th>θ</th> <th>$k_{agh}(40^\circ)$</th> </tr> <tr> <th>[-]</th> <th>[mNHN]</th> <th>[-]</th> <th>[-]</th> <th>[°]</th> <th>[°]</th> <th>[°]</th> <th>[-]</th> </tr> </thead> <tbody> <tr><td>1</td><td>105.35</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr> <tr><td>2</td><td>102.48</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr> <tr><td>3</td><td>101.85</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr> <tr><td>4</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr> </tbody> </table> <p>Aktive Erddruckkoordinaten ($[g+q],k$) mit Zusatzdrücke</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th>oben</th> <th>unten</th> <th colspan="2">Wasserdruck</th> </tr> <tr> <th>[mNHN]</th> <th>[mNHN]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> <th>[kN/m²]</th> </tr> </thead> <tbody> <tr><td>106.100</td><td>106.097</td><td>0.000</td><td>3.915</td><td>0.00</td><td>0.00</td></tr> <tr><td>106.097</td><td>105.500</td><td>3.915</td><td>8.339</td><td>0.00</td><td>0.00</td></tr> <tr><td>105.500</td><td>105.350</td><td>8.339</td><td>8.924</td><td>0.00</td><td>1.50</td></tr> <tr><td>105.350</td><td>105.100</td><td>9.800</td><td>10.863</td><td>1.50</td><td>4.00</td></tr> <tr><td>105.100</td><td>104.100</td><td>10.863</td><td>15.118</td><td>4.00</td><td>14.00</td></tr> <tr><td>104.100</td><td>103.720</td><td>15.118</td><td>16.735</td><td>14.00</td><td>17.80</td></tr> <tr><td>103.720</td><td>103.231</td><td>16.735</td><td>18.816</td><td>17.80</td><td>22.69</td></tr> <tr><td>103.231</td><td>103.050</td><td>18.816</td><td>18.915</td><td>22.69</td><td>24.50</td></tr> <tr><td>103.050</td><td>102.550</td><td>18.915</td><td>19.187</td><td>24.50</td><td>29.50</td></tr> <tr><td>102.550</td><td>102.480</td><td>19.187</td><td>19.225</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.480</td><td>102.131</td><td>14.883</td><td>15.392</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.131</td><td>102.081</td><td>15.392</td><td>15.464</td><td>0.00</td><td>0.00</td></tr> <tr><td>102.081</td><td>101.882</td><td>15.464</td><td>15.755</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.882</td><td>101.850</td><td>15.755</td><td>15.886</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.850</td><td>101.447</td><td>15.886</td><td>17.540</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.447</td><td>101.094</td><td>17.540</td><td>18.987</td><td>0.00</td><td>0.00</td></tr> <tr><td>101.094</td><td>100.691</td><td>18.987</td><td>20.641</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.691</td><td>100.265</td><td>66.544</td><td>76.374</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.265</td><td>100.076</td><td>76.374</td><td>83.604</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.076</td><td>99.839</td><td>83.604</td><td>92.642</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.839</td><td>99.413</td><td>92.642</td><td>112.926</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.413</td><td>99.110</td><td>112.926</td><td>129.155</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.110</td><td>99.054</td><td>129.155</td><td>130.137</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.054</td><td>98.997</td><td>130.137</td><td>131.120</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.997</td><td>98.988</td><td>131.120</td><td>131.050</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.988</td><td>98.561</td><td>131.050</td><td>129.338</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.561</td><td>98.373</td><td>129.338</td><td>128.849</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.373</td><td>98.136</td><td>128.849</td><td>122.623</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.136</td><td>98.092</td><td>122.623</td><td>121.484</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.092</td><td>98.049</td><td>121.484</td><td>120.345</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.049</td><td>97.950</td><td>120.345</td><td>117.764</td><td>0.00</td><td>0.00</td></tr> <tr><td>97.950</td><td>97.636</td><td>117.764</td><td>116.163</td><td>0.00</td><td>0.00</td></tr> <tr><td>97.636</td><td>96.901</td><td>116.163</td><td>100.916</td><td>0.00</td><td>0.00</td></tr> <tr><td>96.901</td><td>96.162</td><td>100.916</td><td>88.742</td><td>0.00</td><td>0.00</td></tr> <tr><td>96.162</td><td>95.854</td><td>88.742</td><td>81.881</td><td>0.00</td><td>0.00</td></tr> <tr><td>95.854</td><td>95.426</td><td>81.881</td><td>76.536</td><td>0.00</td><td>0.00</td></tr> <tr><td>95.426</td><td>94.807</td><td>76.536</td><td>67.247</td><td>0.00</td><td>0.00</td></tr> <tr><td>94.807</td><td>93.759</td><td>67.247</td><td>58.489</td><td>0.00</td><td>0.00</td></tr> <tr><td>93.759</td><td>92.968</td><td>58.489</td><td>55.319</td><td>0.00</td><td>0.00</td></tr> <tr><td>92.968</td><td>92.711</td><td>55.319</td><td>54.231</td><td>0.00</td><td>0.00</td></tr> <tr><td>92.711</td><td>92.700</td><td>54.231</td><td>54.210</td><td>0.00</td><td>0.00</td></tr> <tr><td>92.700</td><td>89.216</td><td>54.210</td><td>67.705</td><td>0.00</td><td>0.00</td></tr> <tr><td>89.216</td><td>80.000</td><td>67.705</td><td>105.505</td><td>0.00</td><td>0.00</td></tr> </tbody> </table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.10 102.55</p>			Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.35	0.390	0.461	30.000	10.00	57.80	0.179	2	102.48	0.501	0.555	22.500	7.50	53.61	0.179	3	101.85	0.357	0.433	32.500	10.84	59.19	0.179	4	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.100	106.097	0.000	3.915	0.00	0.00	106.097	105.500	3.915	8.339	0.00	0.00	105.500	105.350	8.339	8.924	0.00	1.50	105.350	105.100	9.800	10.863	1.50	4.00	105.100	104.100	10.863	15.118	4.00	14.00	104.100	103.720	15.118	16.735	14.00	17.80	103.720	103.231	16.735	18.816	17.80	22.69	103.231	103.050	18.816	18.915	22.69	24.50	103.050	102.550	18.915	19.187	24.50	29.50	102.550	102.480	19.187	19.225	0.00	0.00	102.480	102.131	14.883	15.392	0.00	0.00	102.131	102.081	15.392	15.464	0.00	0.00	102.081	101.882	15.464	15.755	0.00	0.00	101.882	101.850	15.755	15.886	0.00	0.00	101.850	101.447	15.886	17.540	0.00	0.00	101.447	101.094	17.540	18.987	0.00	0.00	101.094	100.691	18.987	20.641	0.00	0.00	100.691	100.265	66.544	76.374	0.00	0.00	100.265	100.076	76.374	83.604	0.00	0.00	100.076	99.839	83.604	92.642	0.00	0.00	99.839	99.413	92.642	112.926	0.00	0.00	99.413	99.110	112.926	129.155	0.00	0.00	99.110	99.054	129.155	130.137	0.00	0.00	99.054	98.997	130.137	131.120	0.00	0.00	98.997	98.988	131.120	131.050	0.00	0.00	98.988	98.561	131.050	129.338	0.00	0.00	98.561	98.373	129.338	128.849	0.00	0.00	98.373	98.136	128.849	122.623	0.00	0.00	98.136	98.092	122.623	121.484	0.00	0.00	98.092	98.049	121.484	120.345	0.00	0.00	98.049	97.950	120.345	117.764	0.00	0.00	97.950	97.636	117.764	116.163	0.00	0.00	97.636	96.901	116.163	100.916	0.00	0.00	96.901	96.162	100.916	88.742	0.00	0.00	96.162	95.854	88.742	81.881	0.00	0.00	95.854	95.426	81.881	76.536	0.00	0.00	95.426	94.807	76.536	67.247	0.00	0.00	94.807	93.759	67.247	58.489	0.00	0.00	93.759	92.968	58.489	55.319	0.00	0.00	92.968	92.711	55.319	54.231	0.00	0.00	92.711	92.700	54.231	54.210	0.00	0.00	92.700	89.216	54.210	67.705	0.00	0.00	89.216	80.000	67.705	105.505	0.00	0.00
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																									
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																									
1	105.35	0.390	0.461	30.000	10.00	57.80	0.179																																																																																																																																																																																																																																																																																																																									
2	102.48	0.501	0.555	22.500	7.50	53.61	0.179																																																																																																																																																																																																																																																																																																																									
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106.100	106.097	0.000	3.915	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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105.500	105.350	8.339	8.924	0.00	1.50																																																																																																																																																																																																																																																																																																																											
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104.100	103.720	15.118	16.735	14.00	17.80																																																																																																																																																																																																																																																																																																																											
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103.050	102.550	18.915	19.187	24.50	29.50																																																																																																																																																																																																																																																																																																																											
102.550	102.480	19.187	19.225	0.00	0.00																																																																																																																																																																																																																																																																																																																											
102.480	102.131	14.883	15.392	0.00	0.00																																																																																																																																																																																																																																																																																																																											
102.131	102.081	15.392	15.464	0.00	0.00																																																																																																																																																																																																																																																																																																																											
102.081	101.882	15.464	15.755	0.00	0.00																																																																																																																																																																																																																																																																																																																											
101.882	101.850	15.755	15.886	0.00	0.00																																																																																																																																																																																																																																																																																																																											
101.850	101.447	15.886	17.540	0.00	0.00																																																																																																																																																																																																																																																																																																																											
101.447	101.094	17.540	18.987	0.00	0.00																																																																																																																																																																																																																																																																																																																											
101.094	100.691	18.987	20.641	0.00	0.00																																																																																																																																																																																																																																																																																																																											
100.691	100.265	66.544	76.374	0.00	0.00																																																																																																																																																																																																																																																																																																																											
100.265	100.076	76.374	83.604	0.00	0.00																																																																																																																																																																																																																																																																																																																											
100.076	99.839	83.604	92.642	0.00	0.00																																																																																																																																																																																																																																																																																																																											
99.839	99.413	92.642	112.926	0.00	0.00																																																																																																																																																																																																																																																																																																																											
99.413	99.110	112.926	129.155	0.00	0.00																																																																																																																																																																																																																																																																																																																											
99.110	99.054	129.155	130.137	0.00	0.00																																																																																																																																																																																																																																																																																																																											
99.054	98.997	130.137	131.120	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.997	98.988	131.120	131.050	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.988	98.561	131.050	129.338	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.561	98.373	129.338	128.849	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.373	98.136	128.849	122.623	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.136	98.092	122.623	121.484	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.092	98.049	121.484	120.345	0.00	0.00																																																																																																																																																																																																																																																																																																																											
98.049	97.950	120.345	117.764	0.00	0.00																																																																																																																																																																																																																																																																																																																											
97.950	97.636	117.764	116.163	0.00	0.00																																																																																																																																																																																																																																																																																																																											
97.636	96.901	116.163	100.916	0.00	0.00																																																																																																																																																																																																																																																																																																																											
96.901	96.162	100.916	88.742	0.00	0.00																																																																																																																																																																																																																																																																																																																											
96.162	95.854	88.742	81.881	0.00	0.00																																																																																																																																																																																																																																																																																																																											
95.854	95.426	81.881	76.536	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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94.807	93.759	67.247	58.489	0.00	0.00																																																																																																																																																																																																																																																																																																																											
93.759	92.968	58.489	55.319	0.00	0.00																																																																																																																																																																																																																																																																																																																											
92.968	92.711	55.319	54.231	0.00	0.00																																																																																																																																																																																																																																																																																																																											
92.711	92.700	54.231	54.210	0.00	0.00																																																																																																																																																																																																																																																																																																																											
92.700	89.216	54.210	67.705	0.00	0.00																																																																																																																																																																																																																																																																																																																											
89.216	80.000	67.705	105.505	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>2</td><td>102.48</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>101.85</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr><tr><td>4</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.05</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.48</td><td>-12.42</td><td>-13.46</td></tr><tr><td>102.48</td><td>102.13</td><td>-13.37</td><td>-27.14</td></tr><tr><td>102.13</td><td>102.08</td><td>-27.14</td><td>-29.10</td></tr><tr><td>102.08</td><td>101.88</td><td>-29.10</td><td>-36.97</td></tr><tr><td>101.88</td><td>101.85</td><td>-36.97</td><td>-38.23</td></tr><tr><td>101.85</td><td>101.45</td><td>-38.23</td><td>-54.15</td></tr><tr><td>101.45</td><td>101.09</td><td>-54.15</td><td>-68.07</td></tr><tr><td>101.09</td><td>100.69</td><td>-68.07</td><td>-83.99</td></tr><tr><td>100.69</td><td>100.26</td><td>-83.99</td><td>-100.79</td></tr><tr><td>100.26</td><td>100.08</td><td>-100.79</td><td>-108.26</td></tr><tr><td>100.08</td><td>99.84</td><td>-108.26</td><td>-117.61</td></tr><tr><td>99.84</td><td>99.41</td><td>-117.61</td><td>-134.40</td></tr><tr><td>99.41</td><td>99.11</td><td>-134.40</td><td>-146.37</td></tr><tr><td>99.11</td><td>99.05</td><td>-146.37</td><td>-148.60</td></tr><tr><td>99.05</td><td>99.00</td><td>-148.60</td><td>-150.82</td></tr><tr><td>99.00</td><td>98.99</td><td>-150.82</td><td>-151.20</td></tr><tr><td>98.99</td><td>98.56</td><td>-151.20</td><td>-168.02</td></tr><tr><td>98.56</td><td>98.37</td><td>-168.02</td><td>-175.47</td></tr><tr><td>98.37</td><td>98.14</td><td>-175.47</td><td>-184.81</td></tr><tr><td>98.14</td><td>98.09</td><td>-184.81</td><td>-186.53</td></tr><tr><td>98.09</td><td>98.05</td><td>-186.53</td><td>-188.25</td></tr><tr><td>98.05</td><td>97.95</td><td>-188.25</td><td>-192.15</td></tr><tr><td>97.95</td><td>97.64</td><td>-192.15</td><td>-204.53</td></tr><tr><td>97.64</td><td>96.90</td><td>-204.53</td><td>-233.53</td></tr><tr><td>96.90</td><td>96.16</td><td>-233.53</td><td>-262.70</td></tr><tr><td>96.16</td><td>95.85</td><td>-262.70</td><td>-274.86</td></tr><tr><td>95.85</td><td>95.43</td><td>-274.86</td><td>-291.76</td></tr><tr><td>95.43</td><td>94.81</td><td>-291.76</td><td>-316.18</td></tr><tr><td>94.81</td><td>93.76</td><td>-316.18</td><td>-357.57</td></tr><tr><td>93.76</td><td>92.97</td><td>-357.57</td><td>-388.77</td></tr><tr><td>92.97</td><td>92.71</td><td>-388.77</td><td>-398.90</td></tr><tr><td>92.71</td><td>92.70</td><td>-398.90</td><td>-399.35</td></tr><tr><td>92.70</td><td>89.22</td><td>-399.35</td><td>-536.85</td></tr><tr><td>89.22</td><td>80.00</td><td>-536.85</td><td>-900.57</td></tr></tbody></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.10</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-16.2</td><td>-4.7</td><td>-1.2</td><td></td></tr><tr><td>105.50</td><td>-42.5</td><td>-4.7</td><td>-18.1</td><td></td></tr><tr><td>105.35</td><td>-46.7</td><td>-6.5</td><td>-18.9</td><td></td></tr><tr><td>105.10</td><td>-53.6</td><td>-10.7</td><td>-21.1</td><td></td></tr><tr><td>104.10</td><td>-82.2</td><td>-39.4</td><td>-44.5</td><td></td></tr><tr><td>103.72</td><td>-93.4</td><td>-55.3</td><td>-62.4</td><td>-80.1</td></tr><tr><td>103.72</td><td>-93.4</td><td>24.8</td><td>-62.4</td><td></td></tr><tr><td>103.23</td><td>-108.2</td><td>0.3</td><td>-56.1</td><td></td></tr><tr><td>103.05</td><td>-113.7</td><td>-9.8</td><td>-57.0</td><td></td></tr><tr><td>102.55</td><td>-129.1</td><td>-40.1</td><td>-69.3</td><td></td></tr><tr><td>102.48</td><td>-130.5</td><td>-41.9</td><td>-72.2</td><td></td></tr><tr><td>102.13</td><td>-133.4</td><td>-34.7</td><td>-86.0</td><td></td></tr><tr><td>102.08</td><td>-133.3</td><td>-32.7</td><td>-87.7</td><td></td></tr><tr><td>101.88</td><td>-132.5</td><td>-22.6</td><td>-93.2</td><td></td></tr><tr><td>101.85</td><td>-132.3</td><td>-20.9</td><td>-93.9</td><td></td></tr><tr><td>101.45</td><td>-129.8</td><td>1.4</td><td>-97.9</td><td></td></tr><tr><td>101.09</td><td>-126.9</td><td>21.8</td><td>-93.8</td><td></td></tr></tbody></table>			Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.48	3.034	3.911	22.500	-15.01	23.23	3	101.85	6.006	6.054	32.500	-21.68	16.35	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.05	102.55	0.00	0.00	102.55	102.48	-12.42	-13.46	102.48	102.13	-13.37	-27.14	102.13	102.08	-27.14	-29.10	102.08	101.88	-29.10	-36.97	101.88	101.85	-36.97	-38.23	101.85	101.45	-38.23	-54.15	101.45	101.09	-54.15	-68.07	101.09	100.69	-68.07	-83.99	100.69	100.26	-83.99	-100.79	100.26	100.08	-100.79	-108.26	100.08	99.84	-108.26	-117.61	99.84	99.41	-117.61	-134.40	99.41	99.11	-134.40	-146.37	99.11	99.05	-146.37	-148.60	99.05	99.00	-148.60	-150.82	99.00	98.99	-150.82	-151.20	98.99	98.56	-151.20	-168.02	98.56	98.37	-168.02	-175.47	98.37	98.14	-175.47	-184.81	98.14	98.09	-184.81	-186.53	98.09	98.05	-186.53	-188.25	98.05	97.95	-188.25	-192.15	97.95	97.64	-192.15	-204.53	97.64	96.90	-204.53	-233.53	96.90	96.16	-233.53	-262.70	96.16	95.85	-262.70	-274.86	95.85	95.43	-274.86	-291.76	95.43	94.81	-291.76	-316.18	94.81	93.76	-316.18	-357.57	93.76	92.97	-357.57	-388.77	92.97	92.71	-388.77	-398.90	92.71	92.70	-398.90	-399.35	92.70	89.22	-399.35	-536.85	89.22	80.00	-536.85	-900.57	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.10	0.0	0.0	0.0		106.10	-0.1	0.0	0.0		105.50	-16.2	-4.7	-1.2		105.50	-42.5	-4.7	-18.1		105.35	-46.7	-6.5	-18.9		105.10	-53.6	-10.7	-21.1		104.10	-82.2	-39.4	-44.5		103.72	-93.4	-55.3	-62.4	-80.1	103.72	-93.4	24.8	-62.4		103.23	-108.2	0.3	-56.1		103.05	-113.7	-9.8	-57.0		102.55	-129.1	-40.1	-69.3		102.48	-130.5	-41.9	-72.2		102.13	-133.4	-34.7	-86.0		102.08	-133.3	-32.7	-87.7		101.88	-132.5	-22.6	-93.2		101.85	-132.3	-20.9	-93.9		101.45	-129.8	1.4	-97.9		101.09	-126.9	21.8	-93.8	
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.69 -122.7 46.6 -80.1</div><div>100.26 -117.0 48.0 -59.9</div><div>100.08 -114.0 47.7 -50.8</div><div>99.84 -109.8 46.0 -39.7</div><div>99.41 -101.1 38.1 -21.5</div><div>99.11 -93.8 27.9 -11.4</div><div>99.05 -92.4 25.7 -9.9</div><div>99.00 -90.9 23.4 -8.5</div><div>98.99 -90.6 23.0 -8.3</div><div>98.56 -78.5 8.8 -1.7</div><div>98.37 -72.5 4.1 -0.5</div><div>98.14 -64.6 0.5 0.0</div><div>98.09 -63.0 0.2 0.0</div><div>98.05 -61.5 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.10 0.0 0.0 0.0</div><div>105.50 -12.7 -3.7 -1.0</div><div>105.50 -32.2 -3.7 -13.5</div><div>105.35 -35.5 -5.1 -14.1</div><div>105.10 -40.9 -8.3 -15.8</div><div>104.10 -63.3 -30.3 -33.9</div><div>103.72 -72.1 -42.4 -47.7 -60.2</div><div>103.72 -72.1 17.7 -47.7</div><div>103.23 -83.7 -0.8 -43.4</div><div>103.05 -88.1 -8.5 -44.3</div><div>102.55 -100.1 -31.6 -54.2</div><div>102.48 -101.5 -32.9 -56.4</div><div>102.13 -103.7 -27.3 -67.3</div><div>102.08 -103.7 -25.7 -68.6</div><div>101.88 -103.1 -17.8 -73.0</div><div>101.85 -103.0 -16.5 -73.5</div><div>101.45 -101.0 1.0 -76.7</div><div>101.09 -98.7 17.1 -73.5</div><div>100.69 -95.4 36.5 -62.7</div><div>100.26 -91.0 37.6 -46.9</div><div>100.08 -88.6 37.4 -39.8</div><div>99.84 -85.4 36.0 -31.1</div><div>99.41 -78.5 29.8 -16.9</div><div>99.11 -72.8 21.9 -8.9</div><div>99.05 -71.7 20.1 -7.8</div><div>99.00 -70.5 18.4 -6.7</div><div>98.99 -70.3 18.1 -6.5</div><div>98.56 -60.8 6.9 -1.3</div><div>98.37 -56.1 3.2 -0.4</div><div>98.14 -49.9 0.4 0.0</div><div>98.09 -48.7 0.2 0.0</div><div>98.05 -47.5 0.0 0.0</div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>106.10 0.0 0.0 0.0</div><div>106.10 0.0 0.0 0.0</div><div>105.50 -12.7 -3.7 -1.0</div><div>105.50 -32.2 -3.7 -13.5</div><div>105.35 -35.5 -5.1 -14.1</div><div>105.10 -40.9 -8.3 -15.8</div><div>104.10 -63.3 -30.3 -33.9</div><div>103.72 -72.1 -42.4 -47.7 -60.2</div><div>103.72 -72.1 17.7 -47.7</div><div>103.23 -83.7 -0.8 -43.4</div><div>103.05 -88.1 -8.5 -44.3</div><div>102.55 -100.1 -31.6 -54.2</div><div>102.48 -101.5 -32.9 -56.4</div><div>102.13 -103.7 -27.3 -67.3</div><div>102.08 -103.7 -25.7 -68.6</div><div>101.88 -103.1 -17.8 -73.0</div></div></div></div></div></div>		
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/44
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



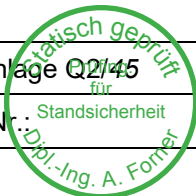
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<p>Schnittgrößen (q,k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td><td></td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.35</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.72</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-4.0</td><td></td></tr><tr><td>103.23</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.48</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.13</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.88</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.85</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>101.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>100.69</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>100.26</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>100.08</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.84</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.11</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.14</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.09</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Weggrößen ([g+q],k)</p> <p>berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig.Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.10</td><td>-1.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-1.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-1.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr></table>						101.85	-103.0	-16.5	-73.5	101.45	-101.0	1.0	-76.7	101.09	-98.7	17.1	-73.5	100.69	-95.4	36.5	-62.7	100.26	-91.0	37.6	-46.9	100.08	-88.6	37.4	-39.8	99.84	-85.4	36.0	-31.1	99.41	-78.5	29.8	-16.9	99.11	-72.8	21.9	-8.9	99.05	-71.7	20.1	-7.8	99.00	-70.5	18.4	-6.7	98.99	-70.3	18.1	-6.5	98.56	-60.8	6.9	-1.3	98.37	-56.1	3.2	-0.4	98.14	-49.9	0.4	0.0	98.09	-48.7	0.2	0.0	98.05	-47.5	0.0	0.0	Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.10	0.0	0.0	0.0			106.10	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.35	0.0	0.0	0.0			105.10	0.0	0.0	0.0			104.10	0.0	0.0	0.0			103.72	0.0	0.0	0.0	-4.0		103.23	0.0	0.0	0.0			103.05	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.48	0.0	0.0	0.0			102.13	0.0	0.0	0.0			102.08	0.0	0.0	0.0			101.88	0.0	0.0	0.0			101.85	0.0	0.0	0.0			101.45	0.0	0.0	0.0			101.09	0.0	0.0	0.0			100.69	0.0	0.0	0.0			100.26	0.0	0.0	0.0			100.08	0.0	0.0	0.0			99.84	0.0	0.0	0.0			99.41	0.0	0.0	0.0			99.11	0.0	0.0	0.0			99.05	0.0	0.0	0.0			99.00	0.0	0.0	0.0			98.99	0.0	0.0	0.0			98.56	0.0	0.0	0.0			98.37	0.0	0.0	0.0			98.14	0.0	0.0	0.0			98.09	0.0	0.0	0.0			98.05	0.0	0.0	0.0			Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m²]	[kN/m²]	[kN/m²]	106.10	-1.3	-	-	-	106.10	-1.3	-	-	-	106.10	-1.3	-	-	-	106.05	-1.3	-	-	-	105.55	-1.2	-	-	-	105.50	-1.2	-	-	-	105.50	-1.2	-	-	-	105.45	-1.2	-	-	-	105.40	-1.2	-	-	-	105.35	-1.2	-	-	-	105.35	-1.2	-	-	-	105.30	-1.2	-	-	-	105.15	-1.2	-	-	-	105.10	-1.2	-	-	-
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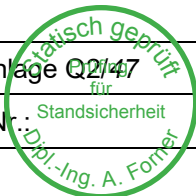


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99.89	-1.7	50.00	83.60	202.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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99.41	-1.8	50.00	92.06	235.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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99.36	-1.9	50.00	92.99	238.69																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.16	-1.9	50.00	96.74	252.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																															
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<table><tr><td>99.00</td><td>-2.0</td><td>50.00</td><td>99.79</td><td>263.94</td></tr><tr><td>99.00</td><td>-2.0</td><td>50.00</td><td>99.79</td><td>263.94</td></tr><tr><td>98.99</td><td>-2.0</td><td>50.00</td><td>99.97</td><td>264.60</td></tr><tr><td>98.99</td><td>-2.0</td><td>50.00</td><td>99.97</td><td>264.60</td></tr><tr><td>98.94</td><td>-2.0</td><td>50.00</td><td>100.86</td><td>267.87</td></tr><tr><td>98.61</td><td>-2.1</td><td>50.00</td><td>107.10</td><td>290.76</td></tr><tr><td>98.56</td><td>-2.2</td><td>50.00</td><td>107.99</td><td>294.03</td></tr><tr><td>98.56</td><td>-2.2</td><td>50.00</td><td>107.99</td><td>294.03</td></tr><tr><td>98.51</td><td>-2.2</td><td>50.00</td><td>108.88</td><td>297.29</td></tr><tr><td>98.42</td><td>-2.2</td><td>50.00</td><td>110.66</td><td>303.82</td></tr><tr><td>98.37</td><td>-2.2</td><td>50.00</td><td>111.56</td><td>307.08</td></tr><tr><td>98.37</td><td>-2.2</td><td>50.00</td><td>111.56</td><td>307.08</td></tr><tr><td>98.33</td><td>-2.2</td><td>50.00</td><td>112.45</td><td>310.35</td></tr><tr><td>98.18</td><td>-2.3</td><td>50.00</td><td>115.13</td><td>320.15</td></tr><tr><td>98.14</td><td>-2.3</td><td>50.00</td><td>116.03</td><td>323.42</td></tr><tr><td>98.14</td><td>-2.3</td><td>50.00</td><td>116.03</td><td>323.42</td></tr><tr><td>98.09</td><td>-2.3</td><td>50.00</td><td>116.85</td><td>326.43</td></tr><tr><td>98.09</td><td>-2.3</td><td>50.00</td><td>116.85</td><td>326.43</td></tr><tr><td>98.05</td><td>-2.4</td><td>50.00</td><td>117.67</td><td>329.44</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.02164601 Theoretischer Fußpunkt = 98.049 m</p> <p>Einbindetiefe tg = 4.50 m Profillänge = 8.05 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G',k + Eav,k >= Bv,k G,k = 152.33 kN/m G',k = 0.00 kN/m Pv,k = 19.50 kN/m Eav,k = 69.26 kN/m (Eah,k = 363.41 kN/m) Bv,k = 137.83 Summe V,k = 103.26 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.48</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>102.48</td><td>101.85</td><td>55.00</td><td>s3: Flussskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 243.65 / 1.40 = 174.04 kN/m R,d = Rb,d + Rs1,d = 1039.08 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 205.65 - 0.00 + 88.30 + 26.33 = 320.27 kN/m ==> µ = V,d / R,d = 320.27 / 1039.08 = 0.31</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			99.00	-2.0	50.00	99.79	263.94	99.00	-2.0	50.00	99.79	263.94	98.99	-2.0	50.00	99.97	264.60	98.99	-2.0	50.00	99.97	264.60	98.94	-2.0	50.00	100.86	267.87	98.61	-2.1	50.00	107.10	290.76	98.56	-2.2	50.00	107.99	294.03	98.56	-2.2	50.00	107.99	294.03	98.51	-2.2	50.00	108.88	297.29	98.42	-2.2	50.00	110.66	303.82	98.37	-2.2	50.00	111.56	307.08	98.37	-2.2	50.00	111.56	307.08	98.33	-2.2	50.00	112.45	310.35	98.18	-2.3	50.00	115.13	320.15	98.14	-2.3	50.00	116.03	323.42	98.14	-2.3	50.00	116.03	323.42	98.09	-2.3	50.00	116.85	326.43	98.09	-2.3	50.00	116.85	326.43	98.05	-2.4	50.00	117.67	329.44	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flussskies, -sand (über GS)	101.85	98.05	55.00	s3: Flussskies, -sand
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98.51	-2.2	50.00	108.88	297.29																																																																																																													
98.42	-2.2	50.00	110.66	303.82																																																																																																													
98.37	-2.2	50.00	111.56	307.08																																																																																																													
98.37	-2.2	50.00	111.56	307.08																																																																																																													
98.33	-2.2	50.00	112.45	310.35																																																																																																													
98.18	-2.3	50.00	115.13	320.15																																																																																																													
98.14	-2.3	50.00	116.03	323.42																																																																																																													
98.14	-2.3	50.00	116.03	323.42																																																																																																													
98.09	-2.3	50.00	116.85	326.43																																																																																																													
98.09	-2.3	50.00	116.85	326.43																																																																																																													
98.05	-2.4	50.00	117.67	329.44																																																																																																													
von	bis	qs,k [kN/m²]	Bezeichnung																																																																																																														
102.55	102.48	0.00	S2: Auelehm (über GS)																																																																																																														
102.48	101.85	55.00	s3: Flussskies, -sand (über GS)																																																																																																														
101.85	98.05	55.00	s3: Flussskies, -sand																																																																																																														
Schnitt: Anlage Q2 Schnitt 8L		Seite Anlage Q2/47																																																																																																															
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: Standsicherheit																																																																																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																															



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																															
Auftraggeber: Stadtverwaltung Leipzig		-																																																															
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																															
<div>Anlage R2 Schnitt 9L</div> <div>1 LF 1.1 (BS-T, ohne Lasten)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 10_BS 9_LF1.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 106.25 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>2.20</td><td>5.11</td><td>1.43</td><td>1.08</td><td>2.04</td><td>2.70</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Zusatzdrücke</p> <table><tr><td>Nr.</td><td>e(oben)</td><td>e(unten)</td><td>z(oben)</td><td>z(unten)</td><td>Typ</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>17.80</td><td>103.16</td><td>99.07</td><td>Ständig</td></tr><tr><td>2</td><td>17.80</td><td>0.00</td><td>99.07</td><td>94.13</td><td>Ständig</td></tr><tr><td>3</td><td>0.00</td><td>92.20</td><td>99.04</td><td>96.26</td><td>Ständig</td></tr><tr><td>4</td><td>92.20</td><td>0.00</td><td>96.26</td><td>91.32</td><td>Ständig</td></tr></table> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.20 m</p>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	2.20	5.11	1.43	1.08	2.04	2.70	0.00	nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	17.80	103.16	99.07	Ständig	2	17.80	0.00	99.07	94.13	Ständig	3	0.00	92.20	99.04	96.26	Ständig	4	92.20	0.00	96.26	91.32	Ständig
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																									
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]																																																									
1	2.20	5.11	1.43	1.08	2.04	2.70	0.00	nein																																																									
Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ																																																												
[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]																																																												
1	0.00	17.80	103.16	99.07	Ständig																																																												
2	17.80	0.00	99.07	94.13	Ständig																																																												
3	0.00	92.20	99.04	96.26	Ständig																																																												
4	92.20	0.00	96.26	91.32	Ständig																																																												
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/19																																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 19. Standsicherheit																																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																															

Statisch geprüft

für

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.25 5.000 5.000</div> <div>105.25 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_{ue} = 328.281 / 1137.821 = 0.289$</div> <div>Bettungslager $B_{h,d} = 328.281 \text{ kN/m}$</div> <div>Erdwiderstand $E_{ph,d} = 1137.821 \text{ kN/m}$</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c(pas),k c(akt),k d(p)/phi d(a)/phi qc cu,k</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.25 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.45 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.25 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.45 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ($[g+q],k$)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.250 105.750 0.000 3.702 0.00 0.00</div> <div>105.750 105.500 3.702 5.553 0.00 0.00</div> <div>105.500 105.250 5.553 6.527 0.00 2.50</div> <div>105.250 105.000 6.721 7.785 2.50 5.00</div> <div>105.000 104.204 7.785 11.170 5.00 5.00</div> <div>104.204 103.210 11.170 15.402 5.00 5.00</div> <div>103.210 103.160 15.402 15.614 5.00 5.00</div> <div>103.160 103.125 15.614 15.914 5.00 5.00</div> <div>103.125 102.450 15.914 25.122 5.00 5.00</div> <div>102.450 102.401 19.973 20.568 5.00 5.00</div> <div>102.401 102.203 20.568 22.950 5.00 5.00</div> <div>102.203 101.411 22.950 32.478 5.00 5.00</div> <div>101.411 101.213 32.478 34.861 5.00 5.00</div> <div>101.213 100.422 34.861 44.389 5.00 5.00</div> <div>100.422 100.222 44.389 46.082 5.00 5.00</div> <div>100.222 99.220 46.082 54.547 5.00 5.00</div> <div>99.220 99.070 54.547 55.816 5.00 5.00</div> <div>99.070 99.040 55.816 55.831 5.00 5.00</div> <div>99.040 98.247 55.831 82.527 5.00 5.00</div> <div>98.247 98.049 82.527 89.201 5.00 5.00</div> <div>98.049 96.260 89.201 149.417 5.00 5.00</div> <div>96.260 94.130 149.417 110.724 5.00 5.00</div> <div>94.130 91.320 110.724 69.804 5.00 5.00</div> <div>91.320 80.000 69.804 116.233 5.00 5.00</div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch) durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div>w(oben) w(unten) z(oben) z(unten)</div> <div>[kN/m²] [kN/m²] [mNHN] [mNHN]</div> <div>0.00 0.00 106.25 105.75</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/2
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																																																																																																																																																																																																																																							
Auftraggeber:	Stadtverwaltung Leipzig																																																																																																																																																																																																																																								
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024																																																																																																																																																																																																																																							
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpg_H</td><td>kp_{cH}</td><td>phi_{i,k}</td><td>delta</td><td>theta</td></tr><tr><td>[°]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>1</td><td>105.25</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.25</td><td>105.75</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>105.50</td><td>0.00</td><td>-14.63</td></tr><tr><td>105.50</td><td>105.25</td><td>-14.63</td><td>-29.26</td></tr><tr><td>105.25</td><td>105.00</td><td>-24.95</td><td>-32.89</td></tr><tr><td>105.00</td><td>104.20</td><td>-32.89</td><td>-45.51</td></tr><tr><td>104.20</td><td>103.21</td><td>-45.51</td><td>-61.30</td></tr><tr><td>103.21</td><td>103.16</td><td>-61.30</td><td>-62.09</td></tr><tr><td>103.16</td><td>103.13</td><td>-62.09</td><td>-62.64</td></tr><tr><td>103.13</td><td>102.45</td><td>-62.64</td><td>-73.35</td></tr><tr><td>102.45</td><td>102.40</td><td>-130.93</td><td>-133.03</td></tr><tr><td>102.40</td><td>102.20</td><td>-133.03</td><td>-141.44</td></tr><tr><td>102.20</td><td>101.41</td><td>-141.44</td><td>-175.08</td></tr><tr><td>101.41</td><td>101.21</td><td>-175.08</td><td>-183.49</td></tr><tr><td>101.21</td><td>100.42</td><td>-183.49</td><td>-217.13</td></tr><tr><td>100.42</td><td>100.22</td><td>-217.13</td><td>-225.64</td></tr><tr><td>100.22</td><td>99.22</td><td>-225.64</td><td>-268.20</td></tr><tr><td>99.22</td><td>99.07</td><td>-268.20</td><td>-274.58</td></tr><tr><td>99.07</td><td>99.04</td><td>-274.58</td><td>-275.86</td></tr><tr><td>99.04</td><td>98.25</td><td>-275.86</td><td>-309.56</td></tr><tr><td>98.25</td><td>98.05</td><td>-309.56</td><td>-317.99</td></tr><tr><td>98.05</td><td>96.26</td><td>-317.99</td><td>-394.01</td></tr><tr><td>96.26</td><td>94.13</td><td>-394.01</td><td>-484.54</td></tr><tr><td>94.13</td><td>91.32</td><td>-484.54</td><td>-603.98</td></tr><tr><td>91.32</td><td>80.00</td><td>-603.98</td><td>-1085.10</td></tr></table> <div>Schnittgrößen (Bemessungswerte)</div> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>-11.3</td><td>-1.1</td><td>-0.2</td></tr><tr><td>105.50</td><td>-16.0</td><td>-0.5</td><td>-0.4</td></tr><tr><td>105.25</td><td>-20.5</td><td>0.1</td><td>-0.4</td></tr><tr><td>105.00</td><td>-25.2</td><td>-0.5</td><td>-0.5</td></tr><tr><td>104.20</td><td>-40.5</td><td>-6.0</td><td>-2.8</td></tr><tr><td>103.21</td><td>-59.8</td><td>-18.3</td><td>-14.3</td></tr><tr><td>103.16</td><td>-60.7</td><td>-19.0</td><td>-15.3</td></tr><tr><td>103.13</td><td>-61.4</td><td>-19.6</td><td>-15.9</td></tr><tr><td>102.45</td><td>-74.7</td><td>-34.2</td><td>-33.7</td></tr><tr><td>102.40</td><td>-75.6</td><td>-35.2</td><td>-35.4</td></tr><tr><td>102.20</td><td>-74.0</td><td>-26.5</td><td>-41.5</td></tr><tr><td>101.41</td><td>-68.9</td><td>0.1</td><td>-51.0</td></tr><tr><td>101.21</td><td>-67.9</td><td>4.9</td><td>-50.5</td></tr><tr><td>100.42</td><td>-64.2</td><td>17.1</td><td>-41.2</td></tr><tr><td>100.22</td><td>-63.3</td><td>18.7</td><td>-37.6</td></tr><tr><td>99.22</td><td>-58.8</td><td>21.1</td><td>-16.9</td></tr><tr><td>99.07</td><td>-58.1</td><td>20.8</td><td>-13.8</td></tr><tr><td>99.04</td><td>-57.9</td><td>20.7</td><td>-13.2</td></tr><tr><td>98.25</td><td>-53.7</td><td>7.0</td><td>-0.7</td></tr><tr><td>98.05</td><td>-52.5</td><td>0.0</td><td>0.0</td></tr></table>			Schicht	UK	kpg _H	kp _{cH}	phi _{i,k}	delta	theta	[°]	[mNHN]	[-]	[-]	[°]	[°]	[°]	1	105.25	5.005	5.388	30.000	-20.01	18.10	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	106.25	105.75	0.00	0.00	105.75	105.50	0.00	-14.63	105.50	105.25	-14.63	-29.26	105.25	105.00	-24.95	-32.89	105.00	104.20	-32.89	-45.51	104.20	103.21	-45.51	-61.30	103.21	103.16	-61.30	-62.09	103.16	103.13	-62.09	-62.64	103.13	102.45	-62.64	-73.35	102.45	102.40	-130.93	-133.03	102.40	102.20	-133.03	-141.44	102.20	101.41	-141.44	-175.08	101.41	101.21	-175.08	-183.49	101.21	100.42	-183.49	-217.13	100.42	100.22	-217.13	-225.64	100.22	99.22	-225.64	-268.20	99.22	99.07	-268.20	-274.58	99.07	99.04	-274.58	-275.86	99.04	98.25	-275.86	-309.56	98.25	98.05	-309.56	-317.99	98.05	96.26	-317.99	-394.01	96.26	94.13	-394.01	-484.54	94.13	91.32	-484.54	-603.98	91.32	80.00	-603.98	-1085.10	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	105.75	-11.3	-1.1	-0.2	105.50	-16.0	-0.5	-0.4	105.25	-20.5	0.1	-0.4	105.00	-25.2	-0.5	-0.5	104.20	-40.5	-6.0	-2.8	103.21	-59.8	-18.3	-14.3	103.16	-60.7	-19.0	-15.3	103.13	-61.4	-19.6	-15.9	102.45	-74.7	-34.2	-33.7	102.40	-75.6	-35.2	-35.4	102.20	-74.0	-26.5	-41.5	101.41	-68.9	0.1	-51.0	101.21	-67.9	4.9	-50.5	100.42	-64.2	17.1	-41.2	100.22	-63.3	18.7	-37.6	99.22	-58.8	21.1	-16.9	99.07	-58.1	20.8	-13.8	99.04	-57.9	20.7	-13.2	98.25	-53.7	7.0	-0.7	98.05	-52.5	0.0	0.0
Schicht	UK	kpg _H	kp _{cH}	phi _{i,k}	delta	theta																																																																																																																																																																																																																																			
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1	105.25	5.005	5.388	30.000	-20.01	18.10																																																																																																																																																																																																																																			
2	102.45	3.034	3.911	22.500	-15.01	23.23																																																																																																																																																																																																																																			
3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																			
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104.20	103.21	-45.51	-61.30																																																																																																																																																																																																																																						
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103.13	102.45	-62.64	-73.35																																																																																																																																																																																																																																						
102.45	102.40	-130.93	-133.03																																																																																																																																																																																																																																						
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99.04	98.25	-275.86	-309.56																																																																																																																																																																																																																																						
98.25	98.05	-309.56	-317.99																																																																																																																																																																																																																																						
98.05	96.26	-317.99	-394.01																																																																																																																																																																																																																																						
96.26	94.13	-394.01	-484.54																																																																																																																																																																																																																																						
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<p>Schnittgrößen ([g+q+w],k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr> <tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.75</td><td>-9.8</td><td>-0.9</td><td>-0.2</td></tr> <tr><td>105.50</td><td>-14.0</td><td>-0.4</td><td>-0.4</td></tr> <tr><td>105.25</td><td>-17.9</td><td>0.1</td><td>-0.4</td></tr> <tr><td>105.00</td><td>-22.0</td><td>-0.4</td><td>-0.4</td></tr> <tr><td>104.20</td><td>-35.2</td><td>-5.2</td><td>-2.4</td></tr> <tr><td>103.21</td><td>-52.0</td><td>-15.7</td><td>-12.4</td></tr> <tr><td>103.16</td><td>-52.8</td><td>-16.4</td><td>-13.2</td></tr> <tr><td>103.13</td><td>-53.4</td><td>-16.8</td><td>-13.7</td></tr> <tr><td>102.45</td><td>-65.0</td><td>-29.4</td><td>-29.0</td></tr> <tr><td>102.40</td><td>-65.8</td><td>-30.3</td><td>-30.5</td></tr> <tr><td>102.20</td><td>-64.4</td><td>-22.8</td><td>-35.7</td></tr> <tr><td>101.41</td><td>-60.0</td><td>0.1</td><td>-44.0</td></tr> <tr><td>101.21</td><td>-59.1</td><td>4.2</td><td>-43.5</td></tr> <tr><td>100.42</td><td>-55.8</td><td>14.7</td><td>-35.5</td></tr> <tr><td>100.22</td><td>-55.1</td><td>16.1</td><td>-32.4</td></tr> <tr><td>99.22</td><td>-51.2</td><td>18.2</td><td>-14.6</td></tr> <tr><td>99.07</td><td>-50.5</td><td>17.9</td><td>-11.9</td></tr> <tr><td>99.04</td><td>-50.4</td><td>17.8</td><td>-11.4</td></tr> <tr><td>98.25</td><td>-46.7</td><td>6.0</td><td>-0.6</td></tr> <tr><td>98.05</td><td>-45.7</td><td>0.0</td><td>0.0</td></tr> </table> <p>Schnittgrößen (g+w,k)</p> <table> <tr> <th>Tiefe</th><th>N</th><th>Q</th><th>M</th></tr> <tr> <th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr> <tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.75</td><td>-9.8</td><td>-0.9</td><td>-0.2</td></tr> <tr><td>105.50</td><td>-14.0</td><td>-0.4</td><td>-0.4</td></tr> 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</table>				Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	105.75	-9.8	-0.9	-0.2	105.50	-14.0	-0.4	-0.4	105.25	-17.9	0.1	-0.4	105.00	-22.0	-0.4	-0.4	104.20	-35.2	-5.2	-2.4	103.21	-52.0	-15.7	-12.4	103.16	-52.8	-16.4	-13.2	103.13	-53.4	-16.8	-13.7	102.45	-65.0	-29.4	-29.0	102.40	-65.8	-30.3	-30.5	102.20	-64.4	-22.8	-35.7	101.41	-60.0	0.1	-44.0	101.21	-59.1	4.2	-43.5	100.42	-55.8	14.7	-35.5	100.22	-55.1	16.1	-32.4	99.22	-51.2	18.2	-14.6	99.07	-50.5	17.9	-11.9	99.04	-50.4	17.8	-11.4	98.25	-46.7	6.0	-0.6	98.05	-45.7	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	105.75	-9.8	-0.9	-0.2	105.50	-14.0	-0.4	-0.4	105.25	-17.9	0.1	-0.4	105.00	-22.0	-0.4	-0.4	104.20	-35.2	-5.2	-2.4	103.21	-52.0	-15.7	-12.4	103.16	-52.8	-16.4	-13.2	103.13	-53.4	-16.8	-13.7	102.45	-65.0	-29.4	-29.0	102.40	-65.8	-30.3	-30.5	102.20	-64.4	-22.8	-35.7	101.41	-60.0	0.1	-44.0	101.21	-59.1	4.2	-43.5	100.42	-55.8	14.7	-35.5	100.22	-55.1	16.1	-32.4	99.22	-51.2	18.2	-14.6	99.07	-50.5	17.9	-11.9	99.04	-50.4	17.8	-11.4	98.25	-46.7	6.0	-0.6	98.05	-45.7	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	105.75	0.0	0.0	0.0	105.50	0.0	0.0	0.0	105.25	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.20	0.0	0.0	0.0	103.21	0.0	0.0	0.0	103.16	0.0	0.0	0.0	103.13	0.0	0.0	0.0	102.45	0.0	0.0	0.0	102.40	0.0	0.0	0.0	102.20	0.0	0.0	0.0	101.41	0.0	0.0	0.0	101.21	0.0	0.0	0.0	100.42	0.0	0.0	0.0	100.22	0.0	0.0	0.0	99.22	0.0	0.0	0.0	99.07	0.0	0.0	0.0
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<div><div>99.040.000.00</div><div>98.250.000.00</div><div>98.050.000.00</div></div> <div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.25</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-1.9</td><td>5.00</td><td>9.44</td><td>19.02</td></tr><tr><td>105.50</td><td>-1.9</td><td>5.00</td><td>9.39</td><td>23.77</td></tr><tr><td>105.50</td><td>-1.9</td><td>5.00</td><td>9.39</td><td>23.77</td></tr><tr><td>105.45</td><td>-1.9</td><td>5.00</td><td>9.34</td><td>28.53</td></tr><tr><td>105.30</td><td>-1.8</td><td>5.00</td><td>9.20</td><td>42.79</td></tr><tr><td>105.25</td><td>-1.8</td><td>5.00</td><td>9.15</td><td>47.55</td></tr><tr><td>105.25</td><td>-1.8</td><td>5.00</td><td>9.15</td><td>40.55</td></tr><tr><td>105.20</td><td>-1.8</td><td>5.00</td><td>9.11</td><td>43.13</td></tr><tr><td>105.05</td><td>-1.8</td><td>5.00</td><td>8.96</td><td>50.87</td></tr><tr><td>105.00</td><td>-1.8</td><td>5.00</td><td>8.91</td><td>53.44</td></tr><tr><td>105.00</td><td>-1.8</td><td>5.00</td><td>8.91</td><td>53.44</td></tr><tr><td>104.95</td><td>-1.8</td><td>5.00</td><td>8.87</td><td>54.73</td></tr><tr><td>104.25</td><td>-1.6</td><td>5.00</td><td>8.20</td><td>72.68</td></tr><tr><td>104.20</td><td>-1.6</td><td>5.00</td><td>8.15</td><td>73.96</td></tr><tr><td>104.20</td><td>-1.6</td><td>5.00</td><td>8.15</td><td>73.96</td></tr><tr><td>104.15</td><td>-1.6</td><td>5.00</td><td>8.11</td><td>75.24</td></tr><tr><td>103.26</td><td>-1.5</td><td>5.00</td><td>7.27</td><td>98.32</td></tr><tr><td>103.21</td><td>-1.4</td><td>5.00</td><td>7.23</td><td>99.61</td></tr><tr><td>103.21</td><td>-1.4</td><td>5.00</td><td>7.23</td><td>99.61</td></tr><tr><td>103.16</td><td>-1.4</td><td>5.00</td><td>7.19</td><td>100.89</td></tr><tr><td>103.16</td><td>-1.4</td><td>5.00</td><td>7.19</td><td>100.89</td></tr><tr><td>103.13</td><td>-1.4</td><td>5.00</td><td>7.15</td><td>101.79</td></tr><tr><td>103.13</td><td>-1.4</td><td>5.00</td><td>7.15</td><td>101.79</td></tr><tr><td>103.08</td><td>-1.4</td><td>5.00</td><td>7.11</td><td>103.03</td></tr><tr><td>102.50</td><td>-1.3</td><td>5.00</td><td>6.63</td><td>117.95</td></tr><tr><td>102.45</td><td>-1.3</td><td>5.00</td><td>6.59</td><td>119.20</td></tr><tr><td>102.45</td><td>-1.3</td><td>5.00</td><td>6.59</td><td>212.75</td></tr><tr><td>102.40</td><td>-1.3</td><td>5.00</td><td>6.55</td><td>216.17</td></tr><tr><td>102.40</td><td>-1.3</td><td>50.00</td><td>65.54</td><td>216.17</td></tr><tr><td>102.35</td><td>-1.3</td><td>50.00</td><td>65.17</td><td>219.59</td></tr><tr><td>102.25</td><td>-1.3</td><td>50.00</td><td>64.45</td><td>226.42</td></tr><tr><td>102.20</td><td>-1.3</td><td>50.00</td><td>64.10</td><td>229.84</td></tr><tr><td>102.20</td><td>-1.3</td><td>50.00</td><td>64.10</td><td>229.84</td></tr><tr><td>102.15</td><td>-1.3</td><td>50.00</td><td>63.76</td><td>233.25</td></tr><tr><td>101.46</td><td>-1.2</td><td>50.00</td><td>59.85</td><td>281.09</td></tr><tr><td>101.41</td><td>-1.2</td><td>50.00</td><td>59.64</td><td>284.50</td></tr><tr><td>101.41</td><td>-1.2</td><td>50.00</td><td>59.64</td><td>284.50</td></tr><tr><td>101.36</td><td>-1.2</td><td>50.00</td><td>59.43</td><td>287.92</td></tr><tr><td>101.26</td><td>-1.2</td><td>50.00</td><td>59.05</td><td>294.75</td></tr><tr><td>101.21</td><td>-1.2</td><td>50.00</td><td>58.88</td><td>298.17</td></tr><tr><td>101.21</td><td>-1.2</td><td>50.00</td><td>58.88</td><td>298.17</td></tr><tr><td>101.16</td><td>-1.2</td><td>50.00</td><td>58.71</td><td>301.59</td></tr><tr><td>100.47</td><td>-1.1</td><td>50.00</td><td>57.28</td><td>349.42</td></tr><tr><td>100.42</td><td>-1.1</td><td>50.00</td><td>57.23</td><td>352.84</td></tr><tr><td>100.42</td><td>-1.1</td><td>50.00</td><td>57.23</td><td>352.84</td></tr><tr><td>100.37</td><td>-1.1</td><td>50.00</td><td>57.20</td><td>356.29</td></tr><tr><td>100.27</td><td>-1.1</td><td>50.00</td><td>57.15</td><td>363.21</td></tr><tr><td>100.22</td><td>-1.1</td><td>50.00</td><td>57.14</td><td>366.67</td></tr><tr><td>100.22</td><td>-1.1</td><td>50.00</td><td>57.14</td><td>366.67</td></tr><tr><td>100.17</td><td>-1.1</td><td>50.00</td><td>57.13</td><td>370.12</td></tr><tr><td>99.27</td><td>-1.2</td><td>50.00</td><td>57.99</td><td>432.37</td></tr><tr><td>99.22</td><td>-1.2</td><td>50.00</td><td>58.08</td><td>435.82</td></tr><tr><td>99.22</td><td>-1.2</td><td>50.00</td><td>58.08</td><td>435.82</td></tr><tr><td>99.17</td><td>-1.2</td><td>50.00</td><td>58.18</td><td>439.28</td></tr><tr><td>99.12</td><td>-1.2</td><td>50.00</td><td>58.27</td><td>442.74</td></tr><tr><td>99.07</td><td>-1.2</td><td>50.00</td><td>58.37</td><td>446.20</td></tr><tr><td>99.07</td><td>-1.2</td><td>50.00</td><td>58.37</td><td>446.20</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-2.0	-	-	-	106.20	-2.0	-	-	-	105.80	-1.9	-	-	-	105.75	-1.9	0.00	0.00	0.00	105.75	-1.9	0.00	0.00	0.00	105.70	-1.9	0.00	0.00	4.75	105.55	-1.9	5.00	9.44	19.02	105.50	-1.9	5.00	9.39	23.77	105.50	-1.9	5.00	9.39	23.77	105.45	-1.9	5.00	9.34	28.53	105.30	-1.8	5.00	9.20	42.79	105.25	-1.8	5.00	9.15	47.55	105.25	-1.8	5.00	9.15	40.55	105.20	-1.8	5.00	9.11	43.13	105.05	-1.8	5.00	8.96	50.87	105.00	-1.8	5.00	8.91	53.44	105.00	-1.8	5.00	8.91	53.44	104.95	-1.8	5.00	8.87	54.73	104.25	-1.6	5.00	8.20	72.68	104.20	-1.6	5.00	8.15	73.96	104.20	-1.6	5.00	8.15	73.96	104.15	-1.6	5.00	8.11	75.24	103.26	-1.5	5.00	7.27	98.32	103.21	-1.4	5.00	7.23	99.61	103.21	-1.4	5.00	7.23	99.61	103.16	-1.4	5.00	7.19	100.89	103.16	-1.4	5.00	7.19	100.89	103.13	-1.4	5.00	7.15	101.79	103.13	-1.4	5.00	7.15	101.79	103.08	-1.4	5.00	7.11	103.03	102.50	-1.3	5.00	6.63	117.95	102.45	-1.3	5.00	6.59	119.20	102.45	-1.3	5.00	6.59	212.75	102.40	-1.3	5.00	6.55	216.17	102.40	-1.3	50.00	65.54	216.17	102.35	-1.3	50.00	65.17	219.59	102.25	-1.3	50.00	64.45	226.42	102.20	-1.3	50.00	64.10	229.84	102.20	-1.3	50.00	64.10	229.84	102.15	-1.3	50.00	63.76	233.25	101.46	-1.2	50.00	59.85	281.09	101.41	-1.2	50.00	59.64	284.50	101.41	-1.2	50.00	59.64	284.50	101.36	-1.2	50.00	59.43	287.92	101.26	-1.2	50.00	59.05	294.75	101.21	-1.2	50.00	58.88	298.17	101.21	-1.2	50.00	58.88	298.17	101.16	-1.2	50.00	58.71	301.59	100.47	-1.1	50.00	57.28	349.42	100.42	-1.1	50.00	57.23	352.84	100.42	-1.1	50.00	57.23	352.84	100.37	-1.1	50.00	57.20	356.29	100.27	-1.1	50.00	57.15	363.21	100.22	-1.1	50.00	57.14	366.67	100.22	-1.1	50.00	57.14	366.67	100.17	-1.1	50.00	57.13	370.12	99.27	-1.2	50.00	57.99	432.37	99.22	-1.2	50.00	58.08	435.82	99.22	-1.2	50.00	58.08	435.82	99.17	-1.2	50.00	58.18	439.28	99.12	-1.2	50.00	58.27	442.74	99.07	-1.2	50.00	58.37	446.20	99.07	-1.2	50.00	58.37	446.20
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104.15	-1.6	5.00	8.11	75.24																																																																																																																																																																																																																																																																																																																																						
103.26	-1.5	5.00	7.27	98.32																																																																																																																																																																																																																																																																																																																																						
103.21	-1.4	5.00	7.23	99.61																																																																																																																																																																																																																																																																																																																																						
103.21	-1.4	5.00	7.23	99.61																																																																																																																																																																																																																																																																																																																																						
103.16	-1.4	5.00	7.19	100.89																																																																																																																																																																																																																																																																																																																																						
103.16	-1.4	5.00	7.19	100.89																																																																																																																																																																																																																																																																																																																																						
103.13	-1.4	5.00	7.15	101.79																																																																																																																																																																																																																																																																																																																																						
103.13	-1.4	5.00	7.15	101.79																																																																																																																																																																																																																																																																																																																																						
103.08	-1.4	5.00	7.11	103.03																																																																																																																																																																																																																																																																																																																																						
102.50	-1.3	5.00	6.63	117.95																																																																																																																																																																																																																																																																																																																																						
102.45	-1.3	5.00	6.59	119.20																																																																																																																																																																																																																																																																																																																																						
102.45	-1.3	5.00	6.59	212.75																																																																																																																																																																																																																																																																																																																																						
102.40	-1.3	5.00	6.55	216.17																																																																																																																																																																																																																																																																																																																																						
102.40	-1.3	50.00	65.54	216.17																																																																																																																																																																																																																																																																																																																																						
102.35	-1.3	50.00	65.17	219.59																																																																																																																																																																																																																																																																																																																																						
102.25	-1.3	50.00	64.45	226.42																																																																																																																																																																																																																																																																																																																																						
102.20	-1.3	50.00	64.10	229.84																																																																																																																																																																																																																																																																																																																																						
102.20	-1.3	50.00	64.10	229.84																																																																																																																																																																																																																																																																																																																																						
102.15	-1.3	50.00	63.76	233.25																																																																																																																																																																																																																																																																																																																																						
101.46	-1.2	50.00	59.85	281.09																																																																																																																																																																																																																																																																																																																																						
101.41	-1.2	50.00	59.64	284.50																																																																																																																																																																																																																																																																																																																																						
101.41	-1.2	50.00	59.64	284.50																																																																																																																																																																																																																																																																																																																																						
101.36	-1.2	50.00	59.43	287.92																																																																																																																																																																																																																																																																																																																																						
101.26	-1.2	50.00	59.05	294.75																																																																																																																																																																																																																																																																																																																																						
101.21	-1.2	50.00	58.88	298.17																																																																																																																																																																																																																																																																																																																																						
101.21	-1.2	50.00	58.88	298.17																																																																																																																																																																																																																																																																																																																																						
101.16	-1.2	50.00	58.71	301.59																																																																																																																																																																																																																																																																																																																																						
100.47	-1.1	50.00	57.28	349.42																																																																																																																																																																																																																																																																																																																																						
100.42	-1.1	50.00	57.23	352.84																																																																																																																																																																																																																																																																																																																																						
100.42	-1.1	50.00	57.23	352.84																																																																																																																																																																																																																																																																																																																																						
100.37	-1.1	50.00	57.20	356.29																																																																																																																																																																																																																																																																																																																																						
100.27	-1.1	50.00	57.15	363.21																																																																																																																																																																																																																																																																																																																																						
100.22	-1.1	50.00	57.14	366.67																																																																																																																																																																																																																																																																																																																																						
100.22	-1.1	50.00	57.14	366.67																																																																																																																																																																																																																																																																																																																																						
100.17	-1.1	50.00	57.13	370.12																																																																																																																																																																																																																																																																																																																																						
99.27	-1.2	50.00	57.99	432.37																																																																																																																																																																																																																																																																																																																																						
99.22	-1.2	50.00	58.08	435.82																																																																																																																																																																																																																																																																																																																																						
99.22	-1.2	50.00	58.08	435.82																																																																																																																																																																																																																																																																																																																																						
99.17	-1.2	50.00	58.18	439.28																																																																																																																																																																																																																																																																																																																																						
99.12	-1.2	50.00	58.27	442.74																																																																																																																																																																																																																																																																																																																																						
99.07	-1.2	50.00	58.37	446.20																																																																																																																																																																																																																																																																																																																																						
99.07	-1.2	50.00	58.37	446.20																																																																																																																																																																																																																																																																																																																																						
Schnitt:		Anlage R2 Schnitt 9L		Seite Anlage R2/5																																																																																																																																																																																																																																																																																																																																						
Kapitel:		1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																						
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																						

Statisch geprüft

für

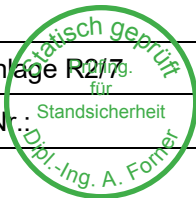
Standicherheit

Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																
Auftraggeber:	Stadtverwaltung Leipzig																	
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024																
<div><div><div><div><div>99.04</div><div>-1.2</div><div>50.00</div><div>58.43</div><div>448.27</div></div><div><div>99.04</div><div>-1.2</div><div>50.00</div><div>58.43</div><div>448.27</div></div><div><div>98.99</div><div>-1.2</div><div>50.00</div><div>58.53</div><div>451.69</div></div><div><div>98.30</div><div>-1.2</div><div>50.00</div><div>60.10</div><div>499.62</div></div><div><div>98.25</div><div>-1.2</div><div>50.00</div><div>60.22</div><div>503.04</div></div><div><div>98.25</div><div>-1.2</div><div>50.00</div><div>60.22</div><div>503.04</div></div><div><div>98.20</div><div>-1.2</div><div>50.00</div><div>60.34</div><div>506.46</div></div><div><div>98.10</div><div>-1.2</div><div>50.00</div><div>60.57</div><div>513.31</div></div><div><div>98.05</div><div>-1.2</div><div>50.00</div><div>60.69</div><div>516.73</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00272394 Theoretischer Fußpunkt = 98.049 m</div><div>Einbindetiefe tg = 7.70 m Profillänge = 8.20 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 155.17 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 46.77 kN/m (Eah,k = 247.89 kN/m) Bv,k = 109.88 Summe V,k = 92.06 kN/m (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div><div>Mantelreibung <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>105.75</td><td>105.25</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.25</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table><div>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 242.00 / 1.40 = 172.86 kN/m Rd = Rb,d + Rs1,d = 1037.91 kN/m</div></div><div>Einwirkungen Vd = G,d - G',k + Eav,d + Pv,d = 186.20 - 0.00 + 53.78 + 0.00 = 239.98 kN/m ==> mu = Vd / Rd = 239.98 / 1037.91 = 0.23</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	105.75	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung															
105.75	105.25	0.00	S1: Auffüllungen															
105.25	102.45	0.00	S2: Auelehm															
102.45	98.05	55.00	s3: Flussskies, -sand															
Schnitt:	Anlage R2 Schnitt 9L	Seite Anlage R2/6																
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.:																
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025																

statistisch geprüft
für
Standsicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>2 LF 1.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 11_BS 9_LF1.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.25 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.75 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 2.20 5.11 1.43 1.08 2.04 2.70 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung $\mu_e = \tan(\beta) / \tan(\phi) * 1.25$ (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 5.11 106.25 106.25 106.25 101.42 98.99 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 17.80 103.16 99.07 Ständig 2 17.80 0.00 99.07 94.13 Ständig 3 0.00 92.20 99.04 96.26 Ständig 4 92.20 0.00 96.26 91.32 Ständig</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.20 m</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 179. für Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>105.75 105.25 5.000 5.000</div> <div>105.25 102.45 5.000 5.000</div> <div>102.45 80.00 50.000 50.000</div> <div>Ausnutzungsgrad $\mu_e = 378.230 / 1137.821 = 0.332$</div> <div>Bettungslager Bh,d = 378.230 kN/m</div> <div>Erdwiderstand Eph,d = 1137.821 kN/m</div> <div>Bodenkennwerte</div> <div>Schicht UK gam,k gam',k phi,k c(pas),k c(akt),k d(p)/phi d(a)/phi qc cu,k</div> <div>[-] [mNHN] [kN/m³] [kN/m³] [°] [kN/m²] [kN/m²] [-] [-] [MN/m²] [kN/m²]</div> <div>1 105.25 19.00 10.00 30.00 0.00 0.00 -0.667 0.667 0.00 0.00</div> <div>2 102.45 17.00 8.50 22.50 3.00 3.00 -0.667 0.667 0.00 40.00</div> <div>3 80.00 21.00 11.50 32.50 0.00 0.00 -0.667 0.667 7.50 0.00</div> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div>Schicht UK kagh kach phi,k delta theta kagh(40°)</div> <div>[-] [mNHN] [-] [-] [°] [°] [°] [-]</div> <div>1 105.25 0.390 0.461 30.000 10.00 57.80 0.179</div> <div>2 102.45 0.501 0.555 22.500 7.50 53.61 0.179</div> <div>3 80.00 0.357 0.433 32.500 10.84 59.19 0.179</div> <div>Aktive Erddruckordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>106.250 106.248 0.000 3.915 0.00 0.00</div> <div>106.248 105.750 3.915 7.599 0.00 0.00</div> <div>105.750 105.500 7.599 9.450 0.00 0.00</div> <div>105.500 105.250 9.450 10.424 0.00 2.50</div> <div>105.250 105.000 11.727 12.791 2.50 5.00</div> <div>105.000 104.220 12.791 16.859 5.00 5.00</div> <div>104.220 103.210 16.859 22.311 5.00 5.00</div> <div>103.210 103.160 22.311 22.584 5.00 5.00</div> <div>103.160 103.125 22.584 22.924 5.00 5.00</div> <div>103.125 102.450 22.924 32.904 5.00 5.00</div> <div>102.450 102.205 25.517 28.663 5.00 5.00</div> <div>102.205 101.520 28.663 37.472 5.00 5.00</div> <div>101.520 101.422 37.472 38.731 5.00 5.00</div> <div>101.422 101.217 38.731 41.061 5.00 5.00</div> <div>101.217 100.422 41.061 50.056 5.00 5.00</div> <div>100.422 100.222 50.056 51.456 5.00 5.00</div> <div>100.222 99.220 51.456 58.453 5.00 5.00</div> <div>99.220 99.070 58.453 59.503 5.00 5.00</div> <div>99.070 99.040 59.503 59.474 5.00 5.00</div> <div>99.040 98.988 59.474 61.144 5.00 5.00</div> <div>98.988 98.247 61.144 86.110 5.00 5.00</div> <div>98.247 98.049 86.110 92.767 5.00 5.00</div> <div>98.049 96.260 92.767 152.983 5.00 5.00</div> <div>96.260 94.130 152.983 114.290 5.00 5.00</div> <div>94.130 91.320 114.290 73.370 5.00 5.00</div> <div>91.320 80.000 73.370 119.800 5.00 5.00</div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div>w(oben) w(unten) z(oben) z(unten)</div> <div>[kN/m²] [kN/m²] [mNHN] [mNHN]</div> <div>0.00 0.00 106.25 105.75</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																			
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																			
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td></td></tr><tr><td>1</td><td>105.25</td><td>5.005</td><td>5.388</td><td>30.000</td><td>-20.01</td><td>18.10</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.25</td><td>105.75</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>105.50</td><td>0.00</td><td>-14.63</td></tr><tr><td>105.50</td><td>105.25</td><td>-14.63</td><td>-29.26</td></tr><tr><td>105.25</td><td>105.00</td><td>-24.95</td><td>-32.89</td></tr><tr><td>105.00</td><td>104.22</td><td>-32.89</td><td>-45.26</td></tr><tr><td>104.22</td><td>103.21</td><td>-45.26</td><td>-61.28</td></tr><tr><td>103.21</td><td>103.16</td><td>-61.28</td><td>-62.09</td></tr><tr><td>103.16</td><td>103.13</td><td>-62.09</td><td>-62.64</td></tr><tr><td>103.13</td><td>102.45</td><td>-62.64</td><td>-73.35</td></tr><tr><td>102.45</td><td>102.21</td><td>-130.93</td><td>-141.33</td></tr><tr><td>102.21</td><td>101.52</td><td>-141.33</td><td>-170.46</td></tr><tr><td>101.52</td><td>101.42</td><td>-170.46</td><td>-174.62</td></tr><tr><td>101.42</td><td>101.22</td><td>-174.62</td><td>-183.32</td></tr><tr><td>101.22</td><td>100.42</td><td>-183.32</td><td>-217.13</td></tr><tr><td>100.42</td><td>100.22</td><td>-217.13</td><td>-225.64</td></tr><tr><td>100.22</td><td>99.22</td><td>-225.64</td><td>-268.20</td></tr><tr><td>99.22</td><td>99.07</td><td>-268.20</td><td>-274.58</td></tr><tr><td>99.07</td><td>99.04</td><td>-274.58</td><td>-275.86</td></tr><tr><td>99.04</td><td>98.99</td><td>-275.86</td><td>-278.06</td></tr><tr><td>98.99</td><td>98.25</td><td>-278.06</td><td>-309.58</td></tr><tr><td>98.25</td><td>98.05</td><td>-309.58</td><td>-317.99</td></tr><tr><td>98.05</td><td>96.26</td><td>-317.99</td><td>-394.01</td></tr><tr><td>96.26</td><td>94.13</td><td>-394.01</td><td>-484.54</td></tr><tr><td>94.13</td><td>91.32</td><td>-484.54</td><td>-603.98</td></tr><tr><td>91.32</td><td>80.00</td><td>-603.98</td><td>-1085.10</td></tr></table> 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Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>101.220.00.00.0</div><div>100.420.00.00.0</div><div>100.220.00.00.0</div><div>99.220.00.00.0</div><div>99.070.00.00.0</div><div>99.040.00.00.0</div><div>98.990.00.00.0</div><div>98.250.00.00.0</div><div>98.050.00.00.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewksksig,Bh,keph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>106.25-3.1-0.00.00.0</div><div>106.25-3.1-0.00.00.0</div><div>106.25-3.1-0.00.00.0</div><div>106.20-3.1-0.00.00.0</div><div>105.80-3.0-0.00.00.0</div><div>105.75-2.90.000.000.00</div><div>105.75-2.90.000.000.00</div><div>105.70-2.90.000.004.75</div><div>105.55-2.95.0014.3119.02</div><div>105.50-2.85.0014.2123.77</div><div>105.50-2.85.0014.2123.77</div><div>105.45-2.85.0014.1128.53</div><div>105.30-2.85.0013.8342.79</div><div>105.25-2.75.0013.7347.55</div><div>105.25-2.75.0013.7340.55</div><div>105.20-2.75.0013.6343.13</div><div>105.05-2.75.0013.3550.87</div><div>105.00-2.65.0013.2553.44</div><div>105.00-2.65.0013.2553.44</div><div>104.94-2.65.0013.1355.03</div><div>104.27-2.45.0011.8672.25</div><div>104.22-2.45.0011.7673.55</div><div>104.22-2.45.0011.7673.55</div><div>104.17-2.35.0011.6774.85</div><div>103.26-2.05.009.9998.29</div><div>103.21-2.05.009.9099.59</div><div>103.21-2.05.009.9099.59</div><div>103.16-2.05.009.81100.89</div><div>103.16-2.05.009.81100.89</div><div>103.13-1.95.009.75101.79</div><div>103.13-1.95.009.75101.79</div><div>103.08-1.95.009.66103.03</div><div>102.50-1.75.008.69117.95</div><div>102.45-1.75.008.62119.20</div><div>102.45-1.750.0086.15212.75</div><div>102.40-1.750.0085.39216.13</div><div>102.25-1.750.0083.15226.28</div><div>102.21-1.650.0082.43229.66</div><div>102.21-1.650.0082.43229.66</div><div>102.16-1.650.0081.72233.04</div><div>101.57-1.550.0074.06273.61</div><div>101.52-1.550.0073.50276.99</div><div>101.52-1.550.0073.50276.99</div><div>101.47-1.550.0072.96280.37</div><div>101.47-1.550.0072.96280.37</div><div>101.42-1.450.0072.43283.76</div><div>101.42-1.450.0072.43283.76</div><div>101.37-1.450.0071.88287.29</div><div>101.27-1.450.0070.84294.36</div><div>101.22-1.450.0070.33297.89</div><div>101.22-1.450.0070.33297.89</div><div>101.17-1.450.0069.84301.42</div><div>100.46-1.350.0064.39350.10</div><div>100.42-1.350.0064.14352.84</div><div>100.42-1.350.0064.14352.84</div><div>100.37-1.350.0063.85356.29</div><div>100.27-1.350.0063.29363.21</div></div></div></div>					
Schnitt: Anlage R2 Schnitt 9L				Seite Anlage R2/11	
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																									
Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																									
<table><tr><td>100.22</td><td>-1.3</td><td>50.00</td><td>63.02</td><td>366.67</td></tr><tr><td>100.22</td><td>-1.3</td><td>50.00</td><td>63.02</td><td>366.67</td></tr><tr><td>100.17</td><td>-1.3</td><td>50.00</td><td>62.76</td><td>370.12</td></tr><tr><td>99.27</td><td>-1.2</td><td>50.00</td><td>59.40</td><td>432.37</td></tr><tr><td>99.22</td><td>-1.2</td><td>50.00</td><td>59.27</td><td>435.82</td></tr><tr><td>99.22</td><td>-1.2</td><td>50.00</td><td>59.27</td><td>435.82</td></tr><tr><td>99.17</td><td>-1.2</td><td>50.00</td><td>59.14</td><td>439.28</td></tr><tr><td>99.12</td><td>-1.2</td><td>50.00</td><td>59.01</td><td>442.74</td></tr><tr><td>99.07</td><td>-1.2</td><td>50.00</td><td>58.89</td><td>446.20</td></tr><tr><td>99.07</td><td>-1.2</td><td>50.00</td><td>58.89</td><td>446.20</td></tr><tr><td>99.04</td><td>-1.2</td><td>50.00</td><td>58.82</td><td>448.27</td></tr><tr><td>99.04</td><td>-1.2</td><td>50.00</td><td>58.82</td><td>448.27</td></tr><tr><td>98.99</td><td>-1.2</td><td>50.00</td><td>58.70</td><td>451.85</td></tr><tr><td>98.99</td><td>-1.2</td><td>50.00</td><td>58.70</td><td>451.85</td></tr><tr><td>98.94</td><td>-1.2</td><td>50.00</td><td>58.59</td><td>455.27</td></tr><tr><td>98.30</td><td>-1.1</td><td>50.00</td><td>57.28</td><td>499.66</td></tr><tr><td>98.25</td><td>-1.1</td><td>50.00</td><td>57.19</td><td>503.07</td></tr><tr><td>98.25</td><td>-1.1</td><td>50.00</td><td>57.19</td><td>503.07</td></tr><tr><td>98.20</td><td>-1.1</td><td>50.00</td><td>57.09</td><td>506.49</td></tr><tr><td>98.10</td><td>-1.1</td><td>50.00</td><td>56.90</td><td>513.32</td></tr><tr><td>98.05</td><td>-1.1</td><td>50.00</td><td>56.81</td><td>516.73</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] $\phi_{i,[g+q],k}$: -0.00219184 Theoretischer Fußpunkt = 98.049 m</p> <p>Einbindetiefe t_g = 7.70 m Profillänge = 8.20 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$ $G_{v,k}$ = 155.17 kN/m $G'_{v,k}$ = 0.00 kN/m $P_{v,k}$ = 0.00 kN/m $E_{av,k}$ = 54.21 kN/m ($E_{ah,k}$ = 291.32 kN/m) $B_{v,k}$ = 125.90 Summe $V_{v,k}$ = 83.47 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck $q_{c,m}$ = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> $q_{b,k}$ = 1.60 MN/m² $R_{b,d}$ = $A \cdot q_{b,k} / \gamma(q_{b,k})$ = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th>$q_{s,k}$ [kN/m²]</th><th>Bezeichnung</th></tr><tr><td>105.75</td><td>105.25</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.25</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.05 m = 1.000 m²/m ==> $R_{s1,d}$ $R_{s1,d}$ = $\eta(s) \cdot R_{s1,k} / \gamma(q_{s,k})$ = 1.000 · 242.00 / 1.40 = 172.86 kN/m R_{d} = $R_{b,d} + R_{s1,d}$ = 1037.91 kN/m</p> <p>Einwirkungen V_{d} = $G_{d} - G'_{d} + E_{av,d} + P_{v,d}$ = 186.20 - 0.00 + 62.34 + 0.00 = 248.54 kN/m ==> μ = V_{d} / R_{d} = 248.54 / 1037.91 = 0.24</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.22	-1.3	50.00	63.02	366.67	100.22	-1.3	50.00	63.02	366.67	100.17	-1.3	50.00	62.76	370.12	99.27	-1.2	50.00	59.40	432.37	99.22	-1.2	50.00	59.27	435.82	99.22	-1.2	50.00	59.27	435.82	99.17	-1.2	50.00	59.14	439.28	99.12	-1.2	50.00	59.01	442.74	99.07	-1.2	50.00	58.89	446.20	99.07	-1.2	50.00	58.89	446.20	99.04	-1.2	50.00	58.82	448.27	99.04	-1.2	50.00	58.82	448.27	98.99	-1.2	50.00	58.70	451.85	98.99	-1.2	50.00	58.70	451.85	98.94	-1.2	50.00	58.59	455.27	98.30	-1.1	50.00	57.28	499.66	98.25	-1.1	50.00	57.19	503.07	98.25	-1.1	50.00	57.19	503.07	98.20	-1.1	50.00	57.09	506.49	98.10	-1.1	50.00	56.90	513.32	98.05	-1.1	50.00	56.81	516.73	von	bis	$q_{s,k}$ [kN/m ²]	Bezeichnung	105.75	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flussskies, -sand
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Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/12																																																																																																																									
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2112																																																																																																																									
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																									

Statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):																																																																															
Auftraggeber:	Stadtverwaltung Leipzig	-																																																																															
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<div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand</p> <p>=====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 12_BS 9_LF2.1 (ohne Lasten).vrb Datum: 20.06.2024</p> <p>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</p> <p>Wandkopf = 106.25 mNHN</p> <p>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</p> <p>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</p> <p>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</p> <p>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <p>Bermen auf der Aktivseite</p> <table><tr><td>Nr.</td><td>x1</td><td>x2</td><td>dh</td><td>a</td><td>x</td><td>y</td><td>Auflast</td><td>Verkehr</td></tr><tr><td>[-]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[m]</td><td>[kN/m²]</td><td>[-]</td></tr><tr><td>1</td><td>2.20</td><td>5.11</td><td>1.43</td><td>1.08</td><td>2.04</td><td>2.70</td><td>0.00</td><td>nein</td></tr></table> <p>Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</p> <p>Zusatzdrücke</p> <table><tr><td>Nr.</td><td>e(oben)</td><td>e(unten)</td><td>z(oben)</td><td>z(unten)</td><td>Typ</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td>[-]</td></tr><tr><td>1</td><td>0.00</td><td>17.80</td><td>103.16</td><td>99.07</td><td>Ständig</td></tr><tr><td>2</td><td>17.80</td><td>0.00</td><td>99.07</td><td>94.13</td><td>Ständig</td></tr><tr><td>3</td><td>0.00</td><td>92.20</td><td>99.04</td><td>96.26</td><td>Ständig</td></tr><tr><td>4</td><td>92.20</td><td>0.00</td><td>96.26</td><td>91.32</td><td>Ständig</td></tr></table> <p>Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.40 m / eaho/eahu = 1.5)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.20 m</p> <p>Bettungsmodule</p> <table><tr><td>von</td><td>bis</td><td>ks(oben)</td><td>ks(unten)</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[MN/m³]</td><td>[MN/m³]</td></tr><tr><td>102.55</td><td>102.45</td><td>5.000</td><td>5.000</td></tr><tr><td>102.45</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table>			Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr	[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN/m²]	[-]	1	2.20	5.11	1.43	1.08	2.04	2.70	0.00	nein	Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ	[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]	1	0.00	17.80	103.16	99.07	Ständig	2	17.80	0.00	99.07	94.13	Ständig	3	0.00	92.20	99.04	96.26	Ständig	4	92.20	0.00	96.26	91.32	Ständig	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	102.45	5.000	5.000	102.45	80.00	50.000	50.000
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Statisch geprüft

für

Standsicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																	
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<div>Ausnutzungsgrad $\mu_{ue} = 288.432 / 425.902 = 0.677$ Bettungslager $B_{h,d} = 288.432 \text{ kN/m}$ Erdwiderstand $E_{ph,d} = 425.902 \text{ kN/m}$</div> <div>Anker und Steifen $N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th>$N_{d'}$</th><th>$N(g+q+w)_k$</th><th>$N(g+w)_k$</th><th>$N_{w,k}$</th><th>EA</th><th>EI</th><th>$N_{d'}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[°]</th><th>[m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m²/m]</th><th>[kN/m]</th></tr><tr><td>1</td><td>105.00</td><td>0.00</td><td>1.00</td><td>-39.85</td><td>-34.18</td><td>-34.18</td><td>-10.72</td><td>6.900E+4</td><td>2.100E+7</td><td>-43.59</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max $M_{d'}$ [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th>$w_{x,d}$</th><th>$w_{y,d}$</th><th>$N_{d'}$</th><th>$Q_{d'}$</th><th>$M_{d'}$</th></tr><tr><th>[m]</th><th>[m]</th><th>[mm]</th><th>[mm]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th></tr><tr><td>-1.00</td><td>105.00</td><td>-2.1</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-2.1</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-2.1</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>105.00</td><td>-2.2</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>105.00</td><td>-2.2</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>105.00</td><td>-2.3</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>105.00</td><td>-2.3</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>105.00</td><td>-2.4</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>105.00</td><td>-2.5</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>105.00</td><td>-2.5</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>105.00</td><td>-2.6</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>105.00</td><td>-2.6</td><td>0.0</td><td>-39.85</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden aus der Datei P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Linkes Ufer\10_BS 9_LF1.1 (ohne Lasten).vrb eingeliesen. Anker/Steife Tiefe Vorverformung</div> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>105.00</td><td>-0.0018</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>$\gamma_{m,k}$</th><th>$\gamma'_{m,k}$</th><th>$\phi_{i,k}$</th><th>$c(pas)_k$</th><th>$c(akt)_k$</th><th>$d(p)/\phi_i$</th><th>$d(a)/\phi_i$</th><th>q_c</th><th>$c_{u,k}$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m³]</th><th>[kN/m³]</th><th>[°]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[-]</th><th>[-]</th><th>[MN/m²]</th><th>[kN/m²]</th></tr><tr><td>1</td><td>105.25</td><td>19.00</td><td>10.00</td><td>30.00</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>0.00</td></tr><tr><td>2</td><td>102.45</td><td>17.00</td><td>8.50</td><td>22.50</td><td>3.00</td><td>3.00</td><td>-0.667</td><td>0.667</td><td>0.00</td><td>40.00</td></tr><tr><td>3</td><td>80.00</td><td>21.00</td><td>11.50</td><td>32.50</td><td>0.00</td><td>0.00</td><td>-0.667</td><td>0.667</td><td>7.50</td><td>0.00</td></tr></table> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$ Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit $\phi_i = 40^\circ$ Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0. Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table> <div>Aktive Erddruckordinaten ($[g+q]_k$) mit Zusatzdrücke</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th>Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.250</td><td>105.500</td><td>12.613</td><td>12.613</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>12.613</td><td>12.613</td><td>0.00</td></tr><tr><td>105.250</td><td>105.000</td><td>12.613</td><td>12.613</td><td>2.50</td></tr><tr><td>105.000</td><td>104.400</td><td>12.613</td><td>12.613</td><td>5.00</td></tr><tr><td>104.400</td><td>104.200</td><td>8.409</td><td>8.409</td><td>5.00</td></tr><tr><td>104.200</td><td>103.205</td><td>8.409</td><td>8.409</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w)_k$	$N(g+w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	105.00	0.00	1.00	-39.85	-34.18	-34.18	-10.72	6.900E+4	2.100E+7	-43.59	x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	105.00	-2.1	0.0	-39.85	0.00	0.00	-0.90	105.00	-2.1	0.0	-39.85	0.00	0.00	-0.90	105.00	-2.1	0.0	-39.85	0.00	0.00	-0.80	105.00	-2.2	0.0	-39.85	0.00	0.00	-0.70	105.00	-2.2	0.0	-39.85	0.00	0.00	-0.60	105.00	-2.3	0.0	-39.85	0.00	0.00	-0.50	105.00	-2.3	0.0	-39.85	0.00	0.00	-0.40	105.00	-2.4	0.0	-39.85	0.00	0.00	-0.30	105.00	-2.5	0.0	-39.85	0.00	0.00	-0.20	105.00	-2.5	0.0	-39.85	0.00	0.00	-0.10	105.00	-2.6	0.0	-39.85	0.00	0.00	0.00	105.00	-2.6	0.0	-39.85	0.00	0.00	[-]	[m]	[m]	1	105.00	-0.0018	Schicht	UK	$\gamma_{m,k}$	$\gamma'_{m,k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$	[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]	1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00	2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00	3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00	Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	106.250	105.500	12.613	12.613	0.00	105.500	105.250	12.613	12.613	0.00	105.250	105.000	12.613	12.613	2.50	105.000	104.400	12.613	12.613	5.00	104.400	104.200	8.409	8.409	5.00	104.200	103.205	8.409	8.409	5.00	<div>Statisch geprüft für Standssicherheit Dipl.-Ing. A. Forner</div>
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<table><tr><td>103.205</td><td>103.160</td><td>8.409</td><td>8.409</td><td>5.00</td><td>5.00</td></tr><tr><td>103.160</td><td>103.125</td><td>8.409</td><td>8.409</td><td>5.00</td><td>5.00</td></tr><tr><td>103.125</td><td>102.550</td><td>8.409</td><td>8.409</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>23.758</td><td>25.122</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.203</td><td>19.973</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>102.203</td><td>102.054</td><td>22.950</td><td>24.737</td><td>5.00</td><td>5.00</td></tr><tr><td>102.054</td><td>101.807</td><td>24.737</td><td>27.714</td><td>5.00</td><td>5.00</td></tr><tr><td>101.807</td><td>101.213</td><td>27.714</td><td>34.861</td><td>5.00</td><td>5.00</td></tr><tr><td>101.213</td><td>100.966</td><td>34.861</td><td>37.838</td><td>5.00</td><td>5.00</td></tr><tr><td>100.966</td><td>100.422</td><td>37.838</td><td>44.389</td><td>5.00</td><td>5.00</td></tr><tr><td>100.422</td><td>100.222</td><td>44.389</td><td>46.082</td><td>5.00</td><td>5.00</td></tr><tr><td>100.222</td><td>99.220</td><td>46.082</td><td>54.547</td><td>5.00</td><td>5.00</td></tr><tr><td>99.220</td><td>99.070</td><td>54.547</td><td>55.816</td><td>5.00</td><td>5.00</td></tr><tr><td>99.070</td><td>99.040</td><td>55.816</td><td>55.831</td><td>5.00</td><td>5.00</td></tr><tr><td>99.040</td><td>98.247</td><td>55.831</td><td>82.527</td><td>5.00</td><td>5.00</td></tr><tr><td>98.247</td><td>98.049</td><td>82.527</td><td>89.201</td><td>5.00</td><td>5.00</td></tr><tr><td>98.049</td><td>96.260</td><td>89.201</td><td>149.417</td><td>5.00</td><td>5.00</td></tr><tr><td>96.260</td><td>94.130</td><td>149.417</td><td>110.724</td><td>5.00</td><td>5.00</td></tr><tr><td>94.130</td><td>91.320</td><td>110.724</td><td>69.804</td><td>5.00</td><td>5.00</td></tr><tr><td>91.320</td><td>80.000</td><td>69.804</td><td>116.233</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.25</td><td>102.55</td></tr></table> <p>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</p> <table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td></td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table> <p>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</p> <table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.13</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>102.20</td><td>-3.14</td><td>-13.65</td></tr><tr><td>102.20</td><td>102.05</td><td>-13.65</td><td>-19.96</td></tr><tr><td>102.05</td><td>101.81</td><td>-19.96</td><td>-30.47</td></tr><tr><td>101.81</td><td>101.21</td><td>-30.47</td><td>-55.70</td></tr><tr><td>101.21</td><td>100.97</td><td>-55.70</td><td>-66.22</td></tr><tr><td>100.97</td><td>100.42</td><td>-66.22</td><td>-89.35</td></tr><tr><td>100.42</td><td>100.22</td><td>-89.35</td><td>-97.86</td></tr><tr><td>100.22</td><td>99.22</td><td>-97.86</td><td>-140.42</td></tr><tr><td>99.22</td><td>99.07</td><td>-140.42</td><td>-146.80</td></tr><tr><td>99.07</td><td>99.04</td><td>-146.80</td><td>-148.07</td></tr><tr><td>99.04</td><td>98.25</td><td>-148.07</td><td>-181.78</td></tr><tr><td>98.25</td><td>98.05</td><td>-181.78</td><td>-190.20</td></tr><tr><td>98.05</td><td>96.26</td><td>-190.20</td><td>-266.23</td></tr><tr><td>96.26</td><td>94.13</td><td>-266.23</td><td>-356.76</td></tr><tr><td>94.13</td><td>91.32</td><td>-356.76</td><td>-476.19</td></tr><tr><td>91.32</td><td>80.00</td><td>-476.19</td><td>-957.32</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-20.3</td><td>-10.9</td><td>-4.1</td><td></td></tr><tr><td>105.25</td><td>-27.0</td><td>-14.9</td><td>-7.3</td><td></td></tr><tr><td>105.00</td><td>-33.5</td><td>-19.6</td><td>-11.6</td><td>-39.8</td></tr><tr><td>105.00</td><td>-33.5</td><td>20.2</td><td>-11.6</td><td></td></tr><tr><td>104.40</td><td>-48.8</td><td>7.9</td><td>-3.1</td><td></td></tr><tr><td>104.20</td><td>-53.7</td><td>4.8</td><td>-1.9</td><td></td></tr><tr><td>103.20</td><td>-77.9</td><td>-10.8</td><td>-4.9</td><td></td></tr><tr><td>103.16</td><td>-79.0</td><td>-11.5</td><td>-5.4</td><td></td></tr><tr><td>103.13</td><td>-79.9</td><td>-12.1</td><td>-5.8</td><td></td></tr></table>								103.205	103.160	8.409	8.409	5.00	5.00	103.160	103.125	8.409	8.409	5.00	5.00	103.125	102.550	8.409	8.409	5.00	5.00	102.550	102.450	23.758	25.122	5.00	5.00	102.450	102.203	19.973	22.950	5.00	5.00	102.203	102.054	22.950	24.737	5.00	5.00	102.054	101.807	24.737	27.714	5.00	5.00	101.807	101.213	27.714	34.861	5.00	5.00	101.213	100.966	34.861	37.838	5.00	5.00	100.966	100.422	37.838	44.389	5.00	5.00	100.422	100.222	44.389	46.082	5.00	5.00	100.222	99.220	46.082	54.547	5.00	5.00	99.220	99.070	54.547	55.816	5.00	5.00	99.070	99.040	55.816	55.831	5.00	5.00	99.040	98.247	55.831	82.527	5.00	5.00	98.247	98.049	82.527	89.201	5.00	5.00	98.049	96.260	89.201	149.417	5.00	5.00	96.260	94.130	149.417	110.724	5.00	5.00	94.130	91.320	110.724	69.804	5.00	5.00	91.320	80.000	69.804	116.233	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.25	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]		[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.13	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	102.20	-3.14	-13.65	102.20	102.05	-13.65	-19.96	102.05	101.81	-19.96	-30.47	101.81	101.21	-30.47	-55.70	101.21	100.97	-55.70	-66.22	100.97	100.42	-66.22	-89.35	100.42	100.22	-89.35	-97.86	100.22	99.22	-97.86	-140.42	99.22	99.07	-140.42	-146.80	99.07	99.04	-146.80	-148.07	99.04	98.25	-148.07	-181.78	98.25	98.05	-181.78	-190.20	98.05	96.26	-190.20	-266.23	96.26	94.13	-266.23	-356.76	94.13	91.32	-356.76	-476.19	91.32	80.00	-476.19	-957.32	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.25	0.0	0.0	0.0		105.50	-20.3	-10.9	-4.1		105.25	-27.0	-14.9	-7.3		105.00	-33.5	-19.6	-11.6	-39.8	105.00	-33.5	20.2	-11.6		104.40	-48.8	7.9	-3.1		104.20	-53.7	4.8	-1.9		103.20	-77.9	-10.8	-4.9		103.16	-79.0	-11.5	-5.4		103.13	-79.9	-12.1	-5.8	
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Statisch geprüft
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Standicherheit
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>102.55 -93.9 -21.1 -15.3</div><div>102.45 -96.1 -24.0 -17.6</div><div>102.20 -100.1 -28.2 -24.1</div><div>102.05 -101.6 -28.8 -28.4</div><div>101.81 -102.6 -26.5 -35.3</div><div>101.21 -98.0 -7.3 -45.9</div><div>100.97 -95.6 0.6 -46.7</div><div>100.42 -91.0 13.2 -42.7</div><div>100.22 -89.5 16.3 -39.7</div><div>99.22 -83.3 23.0 -18.8</div><div>99.07 -82.5 22.9 -15.4</div><div>99.04 -82.4 22.8 -14.7</div><div>98.25 -78.7 7.8 -0.8</div><div>98.05 -77.9 0.0 0.0</div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-17.6</div><div>-9.5</div><div>-3.5</div><div></div></div><div><div>105.25</div><div>-23.5</div><div>-12.9</div><div>-6.3</div><div></div></div><div><div>105.00</div><div>-29.1</div><div>-17.0</div><div>-10.1</div><div>-34.2</div></div><div><div>105.00</div><div>-29.1</div><div>17.2</div><div>-10.1</div><div></div></div><div><div>104.40</div><div>-42.5</div><div>6.6</div><div>-2.9</div><div></div></div><div><div>104.20</div><div>-46.7</div><div>3.9</div><div>-1.9</div><div></div></div><div><div>103.20</div><div>-67.8</div><div>-9.4</div><div>-4.6</div><div></div></div><div><div>103.16</div><div>-68.7</div><div>-10.0</div><div>-5.1</div><div></div></div><div><div>103.13</div><div>-69.5</div><div>-10.5</div><div>-5.4</div><div></div></div><div><div>102.55</div><div>-81.7</div><div>-18.2</div><div>-13.7</div><div></div></div><div><div>102.45</div><div>-83.7</div><div>-20.7</div><div>-15.6</div><div></div></div><div><div>102.20</div><div>-87.2</div><div>-24.3</div><div>-21.3</div><div></div></div><div><div>102.05</div><div>-88.5</div><div>-24.8</div><div>-24.9</div><div></div></div><div><div>101.81</div><div>-89.3</div><div>-22.9</div><div>-30.9</div><div></div></div><div><div>101.21</div><div>-85.3</div><div>-6.2</div><div>-40.0</div><div></div></div><div><div>100.97</div><div>-83.2</div><div>0.6</div><div>-40.7</div><div></div></div><div><div>100.42</div><div>-79.2</div><div>11.5</div><div>-37.1</div><div></div></div><div><div>100.22</div><div>-77.9</div><div>14.2</div><div>-34.5</div><div></div></div><div><div>99.22</div><div>-72.6</div><div>20.0</div><div>-16.3</div><div></div></div><div><div>99.07</div><div>-71.9</div><div>19.9</div><div>-13.3</div><div></div></div><div><div>99.04</div><div>-71.8</div><div>19.8</div><div>-12.8</div><div></div></div><div><div>98.25</div><div>-68.6</div><div>6.8</div><div>-0.7</div><div></div></div><div><div>98.05</div><div>-67.8</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen 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Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 16
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																															
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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-1.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.7</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-1.7</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-1.7</td><td>5.00</td><td>8.33</td><td>13.02</td></tr><tr><td>102.45</td><td>-1.7</td><td>5.00</td><td>8.27</td><td>14.31</td></tr><tr><td>102.45</td><td>-1.7</td><td>3.09</td><td>5.11</td><td>5.10</td></tr><tr><td>102.40</td><td>-1.6</td><td>3.09</td><td>5.07</td><td>8.52</td></tr><tr><td>102.25</td><td>-1.6</td><td>11.67</td><td>18.77</td><td>18.77</td></tr><tr><td>102.20</td><td>-1.6</td><td>11.67</td><td>18.64</td><td>22.19</td></tr></tbody></table>			Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.25	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.25	0.0	0.0	0.0		105.00	0.0	0.0	0.0	0.0	104.40	0.0	0.0	0.0		104.20	0.0	0.0	0.0		103.20	0.0	0.0	0.0		103.16	0.0	0.0	0.0		103.13	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.45	0.0	0.0	0.0		102.20	0.0	0.0	0.0		102.05	0.0	0.0	0.0		101.81	0.0	0.0	0.0		101.21	0.0	0.0	0.0		100.97	0.0	0.0	0.0		100.42	0.0	0.0	0.0		100.22	0.0	0.0	0.0		99.22	0.0	0.0	0.0		99.07	0.0	0.0	0.0		99.04	0.0	0.0	0.0		98.25	0.0	0.0	0.0		98.05	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-2.6	-	-	-	106.20	-2.6	-	-	-	105.55	-2.4	-	-	-	105.50	-2.4	-	-	-	105.50	-2.4	-	-	-	105.45	-2.4	-	-	-	105.30	-2.4	-	-	-	105.25	-2.3	-	-	-	105.25	-2.3	-	-	-	105.20	-2.3	-	-	-	105.05	-2.3	-	-	-	105.00	-2.3	-	-	-	105.00	-2.3	-	-	-	104.95	-2.3	-	-	-	104.45	-2.1	-	-	-	104.40	-2.1	-	-	-	104.40	-2.1	-	-	-	104.35	-2.1	-	-	-	104.25	-2.1	-	-	-	104.20	-2.1	-	-	-	104.20	-2.1	-	-	-	104.15	-2.1	-	-	-	103.25	-1.8	-	-	-	103.20	-1.8	-	-	-	103.20	-1.8	-	-	-	103.16	-1.8	-	-	-	103.16	-1.8	-	-	-	103.13	-1.8	-	-	-	103.13	-1.8	-	-	-	103.08	-1.8	-	-	-	102.60	-1.7	-	-	-	102.55	-1.7	0.00	0.00	0.00	102.55	-1.7	0.00	0.00	11.73	102.50	-1.7	0.00	0.00	13.02	102.50	-1.7	5.00	8.33	13.02	102.45	-1.7	5.00	8.27	14.31	102.45	-1.7	3.09	5.11	5.10	102.40	-1.6	3.09	5.07	8.52	102.25	-1.6	11.67	18.77	18.77	102.20	-1.6	11.67	18.64	22.19
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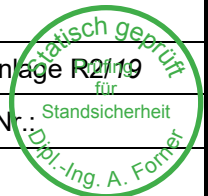
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Fortner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: $P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}$</div> <div>$G_{,k} = 155.17 \text{ kN/m}$</div> <div>$G'_{,k} = 0.00 \text{ kN/m}$</div> <div>$P_{v,k} = 0.00 \text{ kN/m}$</div> <div>$E_{av,k} = 46.77 \text{ kN/m}$ ($E_{ah,k} = 247.89 \text{ kN/m}$)</div> <div>$B_{v,k} = 99.20$</div> <div>Summe $V_{,k} = 102.73 \text{ kN/m}$ (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand $D = 0.88 \text{ m}$</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck $q_{c,m} = 7.50 \text{ MN/m}^2$</div> <div>(gemittelt von 98.93 bis 95.41 m) $\implies q_{b,k} = 1.60 \text{ MN/m}^2$</div> <div>$R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05 \text{ kN/m}$</div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td>$q_{s,k} [\text{kN/m}^2]$</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 98.05 m = $1.000 \text{ m}^2/\text{m}$ $\implies R_{s1,d}$</div> <div>$R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 242.00 / 1.40 = 172.86 \text{ kN/m}$</div> <div>$R_{,d} = R_{b,d} + R_{s1,d} = 1037.91 \text{ kN/m}$</div> <div>Einwirkungen</div> <div>$V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 186.20 - 0.00 + 53.78 + 0.00 = 239.98 \text{ kN/m}$</div> <div>$\implies \mu = V_{,d} / R_{,d} = 239.98 / 1037.91 = 0.23$</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung											
102.55	102.45	0.00	S2: Auelehm											
102.45	98.05	55.00	s3: Flussskies, -sand											
Schnitt:	Anlage R2 Schnitt 9L	Seite Anlage R2/19												
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 2004-0025												
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025												



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>4 LF 2.2 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 13_BS 9_LF2.2 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.25 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.00 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 2.20 5.11 1.43 1.08 2.04 2.70 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 5.11 106.25 106.25 106.25 101.42 98.99 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 17.80 103.16 99.07 Ständig 2 17.80 0.00 99.07 94.13 Ständig 3 0.00 92.20 99.04 96.26 Ständig 4 92.20 0.00 96.26 91.32 Ständig</div> <div>Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.40 m / eaho/eahu = 1.5)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.20 m</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/20
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.45	5.000	5.000
102.45	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 314.259 / 425.902 = 0.738$
 Bettungslager $B_{h,d} = 314.259 \text{ kN/m}$
 Erdwiderstand $E_{ph,d} = 425.902 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

Nr.	y	Neigung	Länge	$N_{d'}$	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-63.97	-55.15	-55.15	-10.89	6.900E+4	2.100E+7	-70.32

Zusätzlich für Steifen

Steife 1

Vertikallast [kN/m²/m]: 0.00
 max $M_{d'}$ [kN·m/m]: 0.00
 gelenkig an Verbauwand angeschlossen
 gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-2.1	0.0	-63.97	0.00	0.00
-0.90	105.00	-2.1	0.0	-63.97	0.00	0.00
-0.90	105.00	-2.1	0.0	-63.97	0.00	0.00
-0.80	105.00	-2.2	0.0	-63.97	0.00	0.00
-0.70	105.00	-2.3	0.0	-63.97	0.00	0.00
-0.60	105.00	-2.4	0.0	-63.97	0.00	0.00
-0.50	105.00	-2.5	0.0	-63.97	0.00	0.00
-0.40	105.00	-2.6	0.0	-63.97	0.00	0.00
-0.30	105.00	-2.7	0.0	-63.97	0.00	0.00
-0.20	105.00	-2.8	0.0	-63.97	0.00	0.00
-0.10	105.00	-2.9	0.0	-63.97	0.00	0.00
0.00	105.00	-3.0	0.0	-63.97	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
 Vorverformungen wurden aus der Datei
 P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Linkes Ufer\10_BS 9_LF1.1 (ohne Lasten).vrb
 eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0018

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Erhöhte aktive Erddruckbeiwerte
 Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$
 Faktor [-] = 0.50
 Ersatzerddruck-Beiwert mit $\phi = 40^\circ$
 Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion > 0.0 .
 Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.
 bestimmt nach:
 (Erddruckbeiwerte für horizontales Gelände)
 Wandreibung angepasst.

Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]
1	105.25	0.390	0.461	30.000	10.00	57.80	0.179
2	102.45	0.501	0.555	22.500	7.50	53.61	0.179
3	80.00	0.357	0.433	32.500	10.84	59.19	0.179

Schnitt: Anlage R2	Schnitt 9L	Seite Anlage R2/21
Kapitel: 4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

statisch geprüft
 für
 Standsicherheit
 Dipl.-Ing. A. Forner

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																	
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<div>Aktive Erddruckkoordinaten ([g+q],k) mit Zusatzdrücke</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.250</td><td>106.248</td><td>19.263</td><td>19.263</td><td>0.00</td><td>0.00</td></tr><tr><td>106.248</td><td>105.500</td><td>19.263</td><td>19.263</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>19.263</td><td>19.263</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>19.263</td><td>19.263</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>19.263</td><td>19.263</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.200</td><td>12.842</td><td>12.842</td><td>5.00</td><td>5.00</td></tr><tr><td>104.200</td><td>103.205</td><td>12.842</td><td>12.842</td><td>5.00</td><td>5.00</td></tr><tr><td>103.205</td><td>103.160</td><td>12.842</td><td>12.842</td><td>5.00</td><td>5.00</td></tr><tr><td>103.160</td><td>103.125</td><td>12.842</td><td>12.842</td><td>5.00</td><td>5.00</td></tr><tr><td>103.125</td><td>102.550</td><td>12.842</td><td>12.842</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>31.426</td><td>32.904</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.205</td><td>25.517</td><td>28.663</td><td>5.00</td><td>5.00</td></tr><tr><td>102.205</td><td>101.814</td><td>28.663</td><td>33.697</td><td>5.00</td><td>5.00</td></tr><tr><td>101.814</td><td>101.422</td><td>33.697</td><td>38.731</td><td>5.00</td><td>5.00</td></tr><tr><td>101.422</td><td>101.217</td><td>38.731</td><td>41.061</td><td>5.00</td><td>5.00</td></tr><tr><td>101.217</td><td>100.808</td><td>41.061</td><td>45.722</td><td>5.00</td><td>5.00</td></tr><tr><td>100.808</td><td>100.422</td><td>45.722</td><td>50.056</td><td>5.00</td><td>5.00</td></tr><tr><td>100.422</td><td>100.222</td><td>50.056</td><td>51.456</td><td>5.00</td><td>5.00</td></tr><tr><td>100.222</td><td>99.220</td><td>51.456</td><td>58.453</td><td>5.00</td><td>5.00</td></tr><tr><td>99.220</td><td>99.070</td><td>58.453</td><td>59.503</td><td>5.00</td><td>5.00</td></tr><tr><td>99.070</td><td>99.040</td><td>59.503</td><td>59.474</td><td>5.00</td><td>5.00</td></tr><tr><td>99.040</td><td>98.988</td><td>59.474</td><td>61.144</td><td>5.00</td><td>5.00</td></tr><tr><td>98.988</td><td>98.247</td><td>61.144</td><td>86.110</td><td>5.00</td><td>5.00</td></tr><tr><td>98.247</td><td>98.049</td><td>86.110</td><td>92.767</td><td>5.00</td><td>5.00</td></tr><tr><td>98.049</td><td>96.260</td><td>92.767</td><td>152.983</td><td>5.00</td><td>5.00</td></tr><tr><td>96.260</td><td>94.130</td><td>152.983</td><td>114.290</td><td>5.00</td><td>5.00</td></tr><tr><td>94.130</td><td>91.320</td><td>114.290</td><td>73.370</td><td>5.00</td><td>5.00</td></tr><tr><td>91.320</td><td>80.000</td><td>73.370</td><td>119.800</td><td>5.00</td><td>5.00</td></tr></tbody></table> <div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <table><thead><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr></thead><tbody><tr><td>0.00</td><td>0.00</td><td>106.25</td><td>102.55</td></tr></tbody></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>kpgh</th><th>kpch</th><th>phi,k</th><th>delta</th><th>theta</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr></thead><tbody><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></tbody></table> <div>Passive Erddruckkoordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <table><thead><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>103.13</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>102.21</td><td>-3.14</td><td>-13.54</td></tr><tr><td>102.21</td><td>101.81</td><td>-13.54</td><td>-30.19</td></tr><tr><td>101.81</td><td>101.42</td><td>-30.19</td><td>-46.83</td></tr><tr><td>101.42</td><td>101.22</td><td>-46.83</td><td>-55.53</td></tr><tr><td>101.22</td><td>100.81</td><td>-55.53</td><td>-72.93</td></tr><tr><td>100.81</td><td>100.42</td><td>-72.93</td><td>-89.35</td></tr><tr><td>100.42</td><td>100.22</td><td>-89.35</td><td>-97.86</td></tr><tr><td>100.22</td><td>99.22</td><td>-97.86</td><td>-140.42</td></tr><tr><td>99.22</td><td>99.07</td><td>-140.42</td><td>-146.80</td></tr><tr><td>99.07</td><td>99.04</td><td>-146.80</td><td>-148.07</td></tr><tr><td>99.04</td><td>98.99</td><td>-148.07</td><td>-150.28</td></tr><tr><td>98.99</td><td>98.25</td><td>-150.28</td><td>-181.80</td></tr><tr><td>98.25</td><td>98.05</td><td>-181.80</td><td>-190.20</td></tr><tr><td>98.05</td><td>96.26</td><td>-190.20</td><td>-266.23</td></tr><tr><td>96.26</td><td>94.13</td><td>-266.23</td><td>-356.76</td></tr><tr><td>94.13</td><td>91.32</td><td>-356.76</td><td>-476.19</td></tr><tr><td>91.32</td><td>80.00</td><td>-476.19</td><td>-957.32</td></tr></tbody></table>						von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.250	106.248	19.263	19.263	0.00	0.00	106.248	105.500	19.263	19.263	0.00	0.00	105.500	105.250	19.263	19.263	0.00	2.50	105.250	105.000	19.263	19.263	2.50	5.00	105.000	104.400	19.263	19.263	5.00	5.00	104.400	104.200	12.842	12.842	5.00	5.00	104.200	103.205	12.842	12.842	5.00	5.00	103.205	103.160	12.842	12.842	5.00	5.00	103.160	103.125	12.842	12.842	5.00	5.00	103.125	102.550	12.842	12.842	5.00	5.00	102.550	102.450	31.426	32.904	5.00	5.00	102.450	102.205	25.517	28.663	5.00	5.00	102.205	101.814	28.663	33.697	5.00	5.00	101.814	101.422	33.697	38.731	5.00	5.00	101.422	101.217	38.731	41.061	5.00	5.00	101.217	100.808	41.061	45.722	5.00	5.00	100.808	100.422	45.722	50.056	5.00	5.00	100.422	100.222	50.056	51.456	5.00	5.00	100.222	99.220	51.456	58.453	5.00	5.00	99.220	99.070	58.453	59.503	5.00	5.00	99.070	99.040	59.503	59.474	5.00	5.00	99.040	98.988	59.474	61.144	5.00	5.00	98.988	98.247	61.144	86.110	5.00	5.00	98.247	98.049	86.110	92.767	5.00	5.00	98.049	96.260	92.767	152.983	5.00	5.00	96.260	94.130	152.983	114.290	5.00	5.00	94.130	91.320	114.290	73.370	5.00	5.00	91.320	80.000	73.370	119.800	5.00	5.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.25	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.13	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	102.21	-3.14	-13.54	102.21	101.81	-13.54	-30.19	101.81	101.42	-30.19	-46.83	101.42	101.22	-46.83	-55.53	101.22	100.81	-55.53	-72.93	100.81	100.42	-72.93	-89.35	100.42	100.22	-89.35	-97.86	100.22	99.22	-97.86	-140.42	99.22	99.07	-140.42	-146.80	99.07	99.04	-146.80	-148.07	99.04	98.99	-148.07	-150.28	98.99	98.25	-150.28	-181.80	98.25	98.05	-181.80	-190.20	98.05	96.26	-190.20	-266.23	96.26	94.13	-266.23	-356.76	94.13	91.32	-356.76	-476.19	91.32	80.00	-476.19	-957.32
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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<div>Schnittgrößen (Bemessungswerte)</div> <table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th><th></th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th><th></th></tr></thead><tbody><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.25</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-22.4</td><td>-16.6</td><td>-6.2</td><td></td><td></td></tr><tr><td>105.25</td><td>-29.8</td><td>-22.5</td><td>-11.1</td><td></td><td></td></tr><tr><td>105.00</td><td>-36.8</td><td>-29.2</td><td>-17.6</td><td>-64.0</td><td></td></tr><tr><td>105.00</td><td>-36.8</td><td>34.8</td><td>-17.6</td><td></td><td></td></tr><tr><td>104.40</td><td>-53.4</td><td>17.9</td><td>-1.8</td><td></td><td></td></tr><tr><td>104.20</td><td>-58.5</td><td>13.7</td><td>1.4</td><td></td><td></td></tr><tr><td>103.20</td><td>-84.1</td><td>-6.9</td><td>4.8</td><td></td><td></td></tr><tr><td>103.16</td><td>-85.3</td><td>-7.9</td><td>4.5</td><td></td><td></td></tr><tr><td>103.13</td><td>-86.2</td><td>-8.6</td><td>4.2</td><td></td><td></td></tr><tr><td>102.55</td><td>-101.0</td><td>-20.5</td><td>-4.2</td><td></td><td></td></tr><tr><td>102.45</td><td>-103.2</td><td>-24.3</td><td>-6.5</td><td></td><td></td></tr><tr><td>102.21</td><td>-107.2</td><td>-30.0</td><td>-13.2</td><td></td><td></td></tr><tr><td>101.81</td><td>-109.7</td><td>-31.2</td><td>-25.5</td><td></td><td></td></tr><tr><td>101.42</td><td>-107.4</td><td>-22.4</td><td>-36.3</td><td></td><td></td></tr><tr><td>101.22</td><td>-104.4</td><td>-14.2</td><td>-40.0</td><td></td><td></td></tr><tr><td>100.81</td><td>-98.6</td><td>0.0</td><td>-42.8</td><td></td><td></td></tr><tr><td>100.42</td><td>-93.8</td><td>9.7</td><td>-40.8</td><td></td><td></td></tr><tr><td>100.22</td><td>-91.6</td><td>13.5</td><td>-38.5</td><td></td><td></td></tr><tr><td>99.22</td><td>-82.3</td><td>22.7</td><td>-19.0</td><td></td><td></td></tr><tr><td>99.07</td><td>-81.2</td><td>22.8</td><td>-15.6</td><td></td><td></td></tr><tr><td>99.04</td><td>-80.9</td><td>22.7</td><td>-14.9</td><td></td><td></td></tr><tr><td>98.99</td><td>-80.6</td><td>22.6</td><td>-13.7</td><td></td><td></td></tr><tr><td>98.25</td><td>-75.8</td><td>8.0</td><td>-0.8</td><td></td><td></td></tr><tr><td>98.05</td><td>-74.8</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table> <div>Schnittgrößen ([g+q+w],k)</div> 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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



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<p>Schnittgrößen (q,k)</p> <table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td><td>A(h)</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td><td>[kN/m]</td></tr><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.16</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.13</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.21</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.81</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.42</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.81</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.42</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.07</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.04</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.99</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.05</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table> <p>Weggrößen ([g+q],k)</p> <p>berechnet mit EI = 5.887E+5 kN·m²/m</p> <table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig.Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.25</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-2.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.94</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr></table>						103.20	-73.1	-6.1	3.8	103.16	-74.1	-6.9	3.5	103.13	-74.9	-7.5	3.2	102.55	-87.8	-17.7	-4.0	102.45	-89.9	-21.0	-6.0	102.21	-93.4	-25.9	-11.8	101.81	-95.5	-26.9	-22.4	101.42	-93.5	-19.3	-31.7	101.22	-90.9	-12.2	-34.9	100.81	-85.9	0.1	-37.3	100.42	-81.7	8.5	-35.5	100.22	-79.7	11.8	-33.5	99.22	-71.7	19.7	-16.5	99.07	-70.7	19.8	-13.5	99.04	-70.5	19.8	-12.9	98.99	-70.2	19.7	-11.9	98.25	-66.1	7.0	-0.7	98.05	-65.2	0.0	0.0	Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]	106.25	0.0	0.0	0.0		106.25	0.0	0.0	0.0		105.50	0.0	0.0	0.0		105.25	0.0	0.0	0.0		105.00	0.0	0.0	0.0	0.0	104.40	0.0	0.0	0.0		104.20	0.0	0.0	0.0		103.20	0.0	0.0	0.0		103.16	0.0	0.0	0.0		103.13	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.45	0.0	0.0	0.0		102.21	0.0	0.0	0.0		101.81	0.0	0.0	0.0		101.42	0.0	0.0	0.0		101.22	0.0	0.0	0.0		100.81	0.0	0.0	0.0		100.42	0.0	0.0	0.0		100.22	0.0	0.0	0.0		99.22	0.0	0.0	0.0		99.07	0.0	0.0	0.0		99.04	0.0	0.0	0.0		98.99	0.0	0.0	0.0		98.25	0.0	0.0	0.0		98.05	0.0	0.0	0.0		Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-2.9	-	-	-	106.25	-2.9	-	-	-	106.25	-2.9	-	-	-	106.20	-2.9	-	-	-	105.55	-2.7	-	-	-	105.50	-2.7	-	-	-	105.50	-2.7	-	-	-	105.45	-2.7	-	-	-	105.30	-2.7	-	-	-	105.25	-2.6	-	-	-	105.25	-2.6	-	-	-	105.20	-2.6	-	-	-	105.05	-2.6	-	-	-	105.00	-2.6	-	-	-	105.00	-2.6	-	-	-	104.94	-2.6	-	-	-	104.45	-2.4	-	-	-	104.40	-2.4	-	-	-	104.40	-2.4	-	-	-
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102.21	-1.9	11.88	22.01	22.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
102.16	-1.8	11.88	21.86	25.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.86	-1.8	25.87	45.68	45.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.81	-1.8	25.87	45.36	49.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.81	-1.8	27.98	49.06	49.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.76	-1.7	27.98	48.72	52.44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.47	-1.7	43.52	72.73	72.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.42	-1.7	43.52	72.23	76.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.42	-1.7	45.86	76.11	76.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.37	-1.6	45.86	75.57	79.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.27	-1.6	50.00	81.25	86.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.22	-1.6	50.00	80.69	90.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.22	-1.6	50.00	80.69	90.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
101.17	-1.6	50.00	80.14	93.77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.86	-1.5	50.00	76.98	114.97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.81	-1.5	50.00	76.48	118.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.81	-1.5	50.00	76.48	118.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.76	-1.5	50.00	75.99	122.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.46	-1.5	50.00	73.33	142.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.42	-1.5	50.00	72.99	145.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.42	-1.5	50.00	72.99	145.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.37	-1.5	50.00	72.57	148.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.27	-1.4	50.00	71.76	155.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.22	-1.4	50.00	71.36	159.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.22	-1.4	50.00	71.36	159.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
100.17	-1.4	50.00	70.97	162.48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.27	-1.3	50.00	65.00	224.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.22	-1.3	50.00	64.72	228.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.22	-1.3	50.00	64.72	228.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.17	-1.3	50.00	64.43	231.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.12	-1.3	50.00	64.16	235.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.07	-1.3	50.00	63.88	238.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.07	-1.3	50.00	63.88	238.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.04	-1.3	50.00	63.72	240.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99.04	-1.3	50.00	63.72	240.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.99	-1.3	50.00	63.43	244.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.99	-1.3	50.00	63.43	244.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.94	-1.3	50.00	63.17	247.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.30	-1.2	50.00	59.86	292.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.25	-1.2	50.00	59.61	295.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.25	-1.2	50.00	59.61	295.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.20	-1.2	50.00	59.36	298.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.10	-1.2	50.00	58.86	305.67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
98.05	-1.2	50.00	58.62	309.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Schnitt:		Anlage R2 Schnitt 9L			Seite Anlage R2/25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Kapitel:		4 LF 2.2 (BS-T, mit Lasten)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Statisch geprüft für Standsicherheit

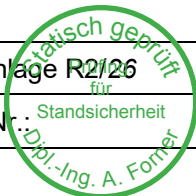
Dipl.-Ing. A. Forner



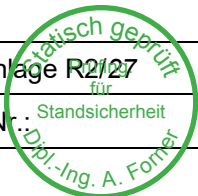
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.00577137 Theoretischer Fußpunkt = 98.049 m</div> <div>Einbindetiefe tg = 4.50 m Profillänge = 8.20 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 155.17 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 54.21 kN/m (Eah,k = 291.32 kN/m) Bv,k = 108.13 Summe V,k = 101.25 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung<table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 242.00 / 1.40 = 172.86 kN/m R,d = Rb,d + R,s1,d = 1037.91 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 186.20 - 0.00 + 62.34 + 0.00 = 248.54 kN/m ==> µ = V,d / R,d = 248.54 / 1037.91 = 0.24</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flusskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.45	0.00	S2: Auelehm											
102.45	98.05	55.00	s3: Flusskies, -sand											
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/26												
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 14_BS 9_LF3 (mit Lasten).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.25 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 2.20 5.11 1.43 1.08 2.04 2.70 10.00 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 10.00 0.00 5.11 106.25 106.25 106.25 101.42 98.99 nein Steuerparameter = 0.50</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 17.80 103.16 99.07 Ständig 2 17.80 0.00 99.07 94.13 Ständig 3 0.00 92.20 99.04 96.26 Ständig 4 92.20 0.00 96.26 91.32 Ständig 5 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/27
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024

Kraftränder
Momente (entgegen dem Uhrzeigersinn positiv)
Horizontalkräfte (nach Erdseite positiv)
Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.50	-13.40	0.00	0.00	0.00	21.00	0.00

Art des Fußlagers:
Profillänge automatisch und Fuß gebettet
Profillänge = 8.20 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.45	5.000	5.000
102.45	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 277.888 / 425.902 = 0.652$
Bettungslager $B_{h,d} = 277.888 \text{ kN/m}$
Erdwiderstand $E_{ph,d} = 425.902 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)
 $N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N,d	$N(g+q+w),k$	$N(g+w),k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-109.15	-93.13	-93.13	-45.03	3.900E+7	2.100E+7	-118.74

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00
max $M_{d'}$ [kN·m/m]: 0.00
gelenkig an Verbauwand angeschlossen
gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	N,d	Q,d	M,d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-2.3	0.0	-109.35	0.00	0.00
-7.47	103.72	-2.3	0.0	-109.35	0.00	0.00
-7.47	103.72	-2.3	0.0	-109.35	0.00	0.00
-6.64	103.72	-2.3	0.0	-109.35	0.00	0.00
-5.81	103.72	-2.3	0.0	-109.35	0.00	0.00
-4.98	103.72	-2.3	0.0	-109.35	0.00	0.00
-4.15	103.72	-2.3	0.0	-109.35	0.00	0.00
-3.32	103.72	-2.3	0.0	-109.35	0.00	0.00
-2.49	103.72	-2.3	0.0	-109.35	0.00	0.00
-1.66	103.72	-2.3	0.0	-109.35	0.00	0.00
-0.83	103.72	-2.3	0.0	-109.35	0.00	0.00
0.00	103.72	-2.3	0.0	-109.35	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt
Vorverformungen wurden aus der Datei
P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS_9\Linkes Ufer\12_BS_9_LF2.1 (ohne Lasten).vrb
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0020

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Schnitt: Anlage R2	Schnitt 9L	Seite Anlage R2/28
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	

statisch geprüft
für
Standicherheit
Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																														
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																														
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit $\phi = 40^\circ$</div> <div>Ersatzerddruck-Beiwert k_{ah} wird angewendet, wenn Kohäsion < 0.0.</div> <div>Ersatzerddruck-Beiwert k_{ah} wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div><table><tr><th>Schicht</th><th>UK</th><th>k_{agh}</th><th>k_{ach}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th><th>$k_{agh}(40^\circ)$</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th><th>[-]</th></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div><div>Aktive Erddruckordinaten ($[g+q],k$)</div><div>mit Zusatzdrücke</div><div><table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>106.250</td><td>106.248</td><td>0.000</td><td>3.915</td><td>0.00</td><td>0.00</td></tr><tr><td>106.248</td><td>105.500</td><td>3.915</td><td>9.450</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>9.450</td><td>10.424</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>104.250</td><td>11.727</td><td>16.699</td><td>2.50</td><td>12.50</td></tr><tr><td>104.250</td><td>103.720</td><td>16.699</td><td>19.561</td><td>12.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.250</td><td>19.561</td><td>22.098</td><td>17.80</td><td>22.50</td></tr><tr><td>103.250</td><td>103.160</td><td>22.098</td><td>22.584</td><td>22.50</td><td>23.40</td></tr><tr><td>103.160</td><td>103.125</td><td>22.584</td><td>22.924</td><td>23.40</td><td>23.75</td></tr><tr><td>103.125</td><td>102.550</td><td>22.924</td><td>31.426</td><td>23.75</td><td>29.50</td></tr><tr><td>102.550</td><td>102.450</td><td>31.426</td><td>32.904</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.205</td><td>25.517</td><td>28.663</td><td>0.00</td><td>0.00</td></tr><tr><td>102.205</td><td>101.814</td><td>28.663</td><td>33.697</td><td>0.00</td><td>0.00</td></tr><tr><td>101.814</td><td>101.422</td><td>33.697</td><td>38.731</td><td>0.00</td><td>0.00</td></tr><tr><td>101.422</td><td>101.217</td><td>38.731</td><td>41.061</td><td>0.00</td><td>0.00</td></tr><tr><td>101.217</td><td>100.422</td><td>41.061</td><td>50.056</td><td>0.00</td><td>0.00</td></tr><tr><td>100.422</td><td>100.222</td><td>50.056</td><td>51.456</td><td>0.00</td><td>0.00</td></tr><tr><td>100.222</td><td>99.220</td><td>51.456</td><td>58.453</td><td>0.00</td><td>0.00</td></tr><tr><td>99.220</td><td>99.070</td><td>58.453</td><td>59.503</td><td>0.00</td><td>0.00</td></tr><tr><td>99.070</td><td>99.040</td><td>59.503</td><td>59.474</td><td>0.00</td><td>0.00</td></tr><tr><td>99.040</td><td>98.988</td><td>59.474</td><td>61.144</td><td>0.00</td><td>0.00</td></tr><tr><td>98.988</td><td>98.247</td><td>61.144</td><td>86.110</td><td>0.00</td><td>0.00</td></tr><tr><td>98.247</td><td>98.049</td><td>86.110</td><td>92.767</td><td>0.00</td><td>0.00</td></tr><tr><td>98.049</td><td>96.260</td><td>92.767</td><td>152.983</td><td>0.00</td><td>0.00</td></tr><tr><td>96.260</td><td>94.130</td><td>152.983</td><td>114.290</td><td>0.00</td><td>0.00</td></tr><tr><td>94.130</td><td>91.320</td><td>114.290</td><td>73.370</td><td>0.00</td><td>0.00</td></tr><tr><td>91.320</td><td>80.000</td><td>73.370</td><td>119.800</td><td>0.00</td><td>0.00</td></tr></table></div><div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><div><table><tr><th>w(oben)</th><th>w(unten)</th><th>z(oben)</th><th>z(unten)</th></tr><tr><th>[kN/m²]</th><th>[kN/m²]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>0.00</td><td>0.00</td><td>106.25</td><td>102.55</td></tr></table></div></div><div><div>Passive Erddruckbeiwerte</div><div>bestimmt nach: DIN 4085:2017</div><div><table><tr><th>Schicht</th><th>UK</th><th>k_{pgh}</th><th>k_{pch}</th><th>$\phi_{i,k}$</th><th>δ</th><th>θ</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table></div></div><div><div>Passive Erddruckordinaten (Bemessungswerte)</div><div>Teilsicherheit Erdwiderstand = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div><table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th></tr><tr><th>[mNHN]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr><tr><td>103.13</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-7.22</td><td>-8.81</td></tr><tr><td>102.45</td><td>102.21</td><td>-3.14</td><td>-13.54</td></tr><tr><td>102.21</td><td>101.81</td><td>-13.54</td><td>-30.19</td></tr><tr><td>101.81</td><td>101.42</td><td>-30.19</td><td>-46.83</td></tr><tr><td>101.42</td><td>101.22</td><td>-46.83</td><td>-55.53</td></tr><tr><td>101.22</td><td>100.42</td><td>-55.53</td><td>-89.35</td></tr></table></div></div></div>			Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.250	106.248	0.000	3.915	0.00	0.00	106.248	105.500	3.915	9.450	0.00	0.00	105.500	105.250	9.450	10.424	0.00	2.50	105.250	104.250	11.727	16.699	2.50	12.50	104.250	103.720	16.699	19.561	12.50	17.80	103.720	103.250	19.561	22.098	17.80	22.50	103.250	103.160	22.098	22.584	22.50	23.40	103.160	103.125	22.584	22.924	23.40	23.75	103.125	102.550	22.924	31.426	23.75	29.50	102.550	102.450	31.426	32.904	0.00	0.00	102.450	102.205	25.517	28.663	0.00	0.00	102.205	101.814	28.663	33.697	0.00	0.00	101.814	101.422	33.697	38.731	0.00	0.00	101.422	101.217	38.731	41.061	0.00	0.00	101.217	100.422	41.061	50.056	0.00	0.00	100.422	100.222	50.056	51.456	0.00	0.00	100.222	99.220	51.456	58.453	0.00	0.00	99.220	99.070	58.453	59.503	0.00	0.00	99.070	99.040	59.503	59.474	0.00	0.00	99.040	98.988	59.474	61.144	0.00	0.00	98.988	98.247	61.144	86.110	0.00	0.00	98.247	98.049	86.110	92.767	0.00	0.00	98.049	96.260	92.767	152.983	0.00	0.00	96.260	94.130	152.983	114.290	0.00	0.00	94.130	91.320	114.290	73.370	0.00	0.00	91.320	80.000	73.370	119.800	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.25	102.55	Schicht	UK	k_{pgh}	k_{pch}	$\phi_{i,k}$	δ	θ	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.13	102.55	0.00	0.00	102.55	102.45	-7.22	-8.81	102.45	102.21	-3.14	-13.54	102.21	101.81	-13.54	-30.19	101.81	101.42	-30.19	-46.83	101.42	101.22	-46.83	-55.53	101.22	100.42	-55.53	-89.35	<div>Statisch geprüft</div> <div>für</div> <div>Standicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Seite Anlage R2/29
Schicht	UK	k_{agh}	k_{ach}	$\phi_{i,k}$	δ	θ	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																									
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.42100.22-89.35-97.86</div><div>100.2299.22-97.86-140.42</div><div>99.2299.07-140.42-146.80</div><div>99.0799.04-146.80-148.07</div><div>99.0498.99-148.07-150.28</div><div>98.9998.25-150.28-181.80</div><div>98.2598.05-181.80-190.20</div><div>98.0596.26-190.20-266.23</div><div>96.2694.13-266.23-356.76</div><div>94.1391.32-356.76-476.19</div><div>91.3280.00-476.19-957.32</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div><div>TiefeNQM</div><div>A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div></div><div><div>106.250.00.00.0</div><div>106.25-0.10.00.0</div><div>105.50-18.4-5.8-1.9</div><div>105.50-43.6-5.8-17.9</div><div>105.25-50.1-9.0-19.8</div><div>104.25-76.2-34.2-39.8</div><div>103.72-90.7-54.9-63.2-109.3</div><div>103.72-90.754.5-63.2</div><div>103.25-103.931.9-42.8</div><div>103.16-106.527.1-40.1</div><div>103.13-107.525.2-39.2</div><div>102.55-124.9-11.2-34.7</div><div>102.45-127.1-14.4-36.0</div><div>102.21-131.1-18.7-40.1</div><div>101.81-133.6-17.6-47.5</div><div>101.42-131.3-6.7-52.6</div><div>101.22-129.4-0.1-53.3</div><div>100.42-123.317.1-45.6</div><div>100.22-122.019.5-41.9</div><div>99.22-116.923.8-19.2</div><div>99.07-116.323.5-15.6</div><div>99.04-116.223.4-14.9</div><div>98.99-115.923.2-13.7</div><div>98.25-113.27.9-0.8</div><div>98.05-112.50.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>TiefeNQM</div><div>A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div></div><div><div>106.250.00.00.0</div><div>106.250.00.00.0</div><div>105.50-16.0-5.0-1.6</div><div>105.50-37.0-5.0-15.0</div><div>105.25-42.6-7.8-16.6</div><div>104.25-65.3-29.4-33.9</div><div>103.72-78.0-47.0-54.0-93.1</div><div>103.72-78.046.1-54.0</div><div>103.25-89.526.9-36.7</div><div>103.16-91.722.8-34.5</div><div>103.13-92.621.2-33.7</div><div>102.55-107.7-9.8-30.0</div><div>102.45-109.8-12.6-31.2</div><div>102.21-113.2-16.3-34.8</div><div>101.81-115.4-15.3-41.2</div><div>101.42-113.4-5.9-45.6</div><div>101.22-111.7-0.1-46.2</div><div>100.42-106.414.8-39.6</div><div>100.22-105.416.9-36.4</div><div>99.22-100.920.7-16.7</div><div>99.07-100.420.4-13.6</div><div>99.04-100.320.3-13.0</div><div>98.99-100.120.1-11.9</div><div>98.25-97.76.9-0.7</div><div>98.05-97.10.00.0</div></div></div></div></div></div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/30
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																							
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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th><th></th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th><th></th></tr></thead><tbody><tr><td>106.25</td><td>-3.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.25</td><td>-3.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.25</td><td>-3.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.20</td><td>-3.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.55</td><td>-2.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-2.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.50</td><td>-2.7</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.45</td><td>-2.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.30</td><td>-2.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>105.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td><td></td></tr></tbody></table>						Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.25	0.0	0.0	0.0			106.25	0.0	0.0	0.0			105.50	-16.0	-5.0	-1.6			105.50	-37.0	-5.0	-15.0			105.25	-42.6	-7.8	-16.6			104.25	-65.3	-29.4	-33.9			103.72	-78.0	-47.0	-54.0	-93.1		103.72	-78.0	46.1	-54.0			103.25	-89.5	26.9	-36.7			103.16	-91.7	22.8	-34.5			103.13	-92.6	21.2	-33.7			102.55	-107.7	-9.8	-30.0			102.45	-109.8	-12.6	-31.2			102.21	-113.2	-16.3	-34.8			101.81	-115.4	-15.3	-41.2			101.42	-113.4	-5.9	-45.6			101.22	-111.7	-0.1	-46.2			100.42	-106.4	14.8	-39.6			100.22	-105.4	16.9	-36.4			99.22	-100.9	20.7	-16.7			99.07	-100.4	20.4	-13.6			99.04	-100.3	20.3	-13.0			98.99	-100.1	20.1	-11.9			98.25	-97.7	6.9	-0.7			98.05	-97.1	0.0	0.0			Tiefe	N	Q	M	A(h)		[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]		106.25	0.0	0.0	0.0			106.25	0.0	0.0	0.0			105.50	0.0	0.0	0.0			105.25	0.0	0.0	0.0			104.25	0.0	0.0	0.0			103.72	0.0	0.0	0.0	-4.1		103.25	0.0	0.0	0.0			103.16	0.0	0.0	0.0			103.13	0.0	0.0	0.0			102.55	0.0	0.0	0.0			102.45	0.0	0.0	0.0			102.21	0.0	0.0	0.0			101.81	0.0	0.0	0.0			101.42	0.0	0.0	0.0			101.22	0.0	0.0	0.0			100.42	0.0	0.0	0.0			100.22	0.0	0.0	0.0			99.22	0.0	0.0	0.0			99.07	0.0	0.0	0.0			99.04	0.0	0.0	0.0			98.99	0.0	0.0	0.0			98.25	0.0	0.0	0.0			98.05	0.0	0.0	0.0			Tiefe	w	ks	sig,Bh,k	eph,k		[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]		106.25	-3.0	-	-	-		106.25	-3.0	-	-	-		106.25	-3.0	-	-	-		106.20	-3.0	-	-	-		105.55	-2.7	-	-	-		105.50	-2.7	-	-	-		105.50	-2.7	-	-	-		105.45	-2.6	-	-	-		105.30	-2.6	-	-	-		105.25	-2.6	-	-	-		105.25	-2.6	-	-	-	
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103.13	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
103.13	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
103.08	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.60	-1.7	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.55	-1.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.55	-1.6	0.00	0.00	0.00	11.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
102.50	-1.6	0.00	0.00	0.00	13.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
102.50	-1.6	5.00	8.13	13.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.45	-1.6	5.00	8.06	14.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.45	-1.6	3.17	5.11	5.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.40	-1.6	3.17	5.07	8.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.25	-1.6	11.91	18.63	18.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.21	-1.6	11.91	18.49	22.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.21	-1.6	14.18	22.01	22.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
102.16	-1.5	14.18	21.85	25.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.86	-1.5	31.01	45.68	45.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.81	-1.5	31.01	45.35	49.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.81	-1.5	33.55	49.06	49.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.76	-1.5	33.55	48.71	52.44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.47	-1.4	50.00	69.64	72.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.42	-1.4	50.00	69.18	76.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.42	-1.4	50.00	69.18	76.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.37	-1.4	50.00	68.70	79.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.27	-1.4	50.00	67.79	86.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.22	-1.3	50.00	67.35	90.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.22	-1.3	50.00	67.35	90.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
101.17	-1.3	50.00	66.92	93.77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.46	-1.2	50.00	62.00	142.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.42	-1.2	50.00	61.78	145.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.42	-1.2	50.00	61.78	145.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.37	-1.2	50.00	61.51	148.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.27	-1.2	50.00	60.98	155.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.22	-1.2	50.00	60.73	159.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.22	-1.2	50.00	60.73	159.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
100.17	-1.2	50.00	60.49	162.48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.27	-1.1	50.00	57.24	224.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.22	-1.1	50.00	57.10	228.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.22	-1.1	50.00	57.10	228.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.17	-1.1	50.00	56.97	231.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.12	-1.1	50.00	56.85	235.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.07	-1.1	50.00	56.72	238.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.07	-1.1	50.00	56.72	238.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.04	-1.1	50.00	56.65	240.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
99.04	-1.1	50.00	56.65	240.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.99	-1.1	50.00	56.53	244.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.99	-1.1	50.00	56.53	244.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.94	-1.1	50.00	56.41	247.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.30	-1.1	50.00	55.06	292.01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.25	-1.1	50.00	54.96	295.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.25	-1.1	50.00	54.96	295.42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.20	-1.1	50.00	54.87	298.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.10	-1.1	50.00	54.67	305.67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
98.05	-1.1	50.00	54.57	309.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage R2 Schnitt 9L			Seite Anlage R2/32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Kapitel:		5 LF 3 (BS-T, mit Lasten)			Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Vorgang:		Genehmigungsstatik			Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

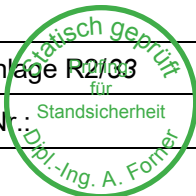
Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner

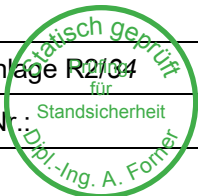


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.00228345 Theoretischer Fußpunkt = 98.049 m</div> <div>Einbindetiefe tg = 4.50 m Profillänge = 8.20 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 155.17 kN/m G',k = 0.00 kN/m Pv,k = 21.00 kN/m Eav,k = 54.21 kN/m (Eah,k = 291.32 kN/m) Bv,k = 96.02 Summe V,k = 134.35 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 102.45 0.00 S2: Auelehm 102.45 98.05 55.00 s3: Flusskies, -sand Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 242.00 / 1.40 = 172.86 kN/m R,d = Rb,d + R,s1,d = 1037.91 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 186.20 - 0.00 + 62.34 + 25.20 = 273.74 kN/m ==> µ = V,d / R,d = 273.74 / 1037.91 = 0.26</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/33
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft
für
Standssicherheit
Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 15_BS 9_LF4 (5 kN_m², BS-P).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.25 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-P gamma(G) = 1.35 gamma(G,Ruhe) = 1.20 gamma(Q) = 1.50 gamma(Ep) = 1.40 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 2.20 5.11 1.43 1.08 2.04 2.70 18.20 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 18.20 0.00 5.11 106.25 106.25 106.25 101.42 98.99 nein 2 93.90 0.00 0.33 106.25 106.25 106.25 105.91 105.76 nein Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 17.80 103.16 99.07 Ständig 2 17.80 0.00 99.07 94.13 Ständig 3 0.00 92.20 99.04 96.26 Ständig 4 92.20 0.00 96.26 91.32 Ständig 5 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/34
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftträger

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.50	-13.40	0.00	0.00	0.00	21.00	0.00

Art des Fußlagers:

Profillänge automatisch und Fuß gebettet

Profillänge = 8.20 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.45	5.000	5.000
102.45	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 322.648 / 445.612 = 0.724$

Bettungslager $B_{h,d} = 322.648 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 445.612 \text{ kN/m}$

Anker und Steifen

$N_{d'}$ = Bemessungswert (Steifen) mit BS-P (1.275/1.50)

$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N_d	$N(g+q+w)_k$	$N(w)_k$	$N_{w,k}$	EA	EI	$N_{d'}$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-171.84	-132.37	-132.37	-45.08	3.900E+7	2.100E+7	-168.77

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00

max $M_{d'}$ [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	N_d	Q_d	M_d
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-2.5	0.0	-172.15	0.00	0.00
-7.47	103.72	-2.5	0.0	-172.15	0.00	0.00
-7.47	103.72	-2.5	0.0	-172.15	0.00	0.00
-6.64	103.72	-2.5	0.0	-172.15	0.00	0.00
-5.81	103.72	-2.5	0.0	-172.15	0.00	0.00
-4.98	103.72	-2.5	0.0	-172.15	0.00	0.00
-4.15	103.72	-2.5	0.0	-172.15	0.00	0.00
-3.32	103.72	-2.5	0.0	-172.15	0.00	0.00
-2.49	103.72	-2.5	0.0	-172.15	0.00	0.00
-1.66	103.72	-2.5	0.0	-172.15	0.00	0.00
-0.83	103.72	-2.5	0.0	-172.15	0.00	0.00
0.00	103.72	-2.5	0.0	-172.15	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden aus der Datei

P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Linkes Ufer\12_BS 9_LF2.1 (ohne Lasten).vrb

eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0020

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas)_k$	$c(akt)_k$	$d(p)/\phi_i$	$d(a)/\phi_i$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Schnitt:	Anlage R2	Schnitt 9L	Seite Anlage R2/35
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																	
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																			
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																	
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.250</td><td>106.248</td><td>0.000</td><td>43.702</td><td>0.00</td><td>0.00</td></tr><tr><td>106.248</td><td>105.913</td><td>43.702</td><td>46.180</td><td>0.00</td><td>0.00</td></tr><tr><td>105.913</td><td>105.761</td><td>46.180</td><td>10.712</td><td>0.00</td><td>0.00</td></tr><tr><td>105.761</td><td>105.500</td><td>10.712</td><td>12.645</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>12.645</td><td>13.619</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>104.250</td><td>15.832</td><td>21.392</td><td>2.50</td><td>12.50</td></tr><tr><td>104.250</td><td>103.720</td><td>21.392</td><td>24.751</td><td>12.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.250</td><td>24.751</td><td>27.729</td><td>17.80</td><td>22.50</td></tr><tr><td>103.250</td><td>103.160</td><td>27.729</td><td>28.299</td><td>22.50</td><td>23.40</td></tr><tr><td>103.160</td><td>103.125</td><td>28.299</td><td>28.672</td><td>23.40</td><td>23.75</td></tr><tr><td>103.125</td><td>102.550</td><td>28.672</td><td>37.713</td><td>23.75</td><td>29.50</td></tr><tr><td>102.550</td><td>102.450</td><td>37.714</td><td>39.285</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.205</td><td>30.064</td><td>33.374</td><td>0.00</td><td>0.00</td></tr><tr><td>102.205</td><td>102.107</td><td>33.374</td><td>34.697</td><td>0.00</td><td>0.00</td></tr><tr><td>102.107</td><td>101.422</td><td>34.697</td><td>43.964</td><td>0.00</td><td>0.00</td></tr><tr><td>101.422</td><td>101.217</td><td>43.965</td><td>46.186</td><td>0.00</td><td>0.00</td></tr><tr><td>101.217</td><td>100.422</td><td>46.186</td><td>54.704</td><td>0.00</td><td>0.00</td></tr><tr><td>100.422</td><td>100.222</td><td>54.704</td><td>55.862</td><td>0.00</td><td>0.00</td></tr><tr><td>100.222</td><td>99.220</td><td>55.862</td><td>61.657</td><td>0.00</td><td>0.00</td></tr><tr><td>99.220</td><td>99.070</td><td>61.657</td><td>62.526</td><td>0.00</td><td>0.00</td></tr><tr><td>99.070</td><td>99.040</td><td>62.526</td><td>62.461</td><td>0.00</td><td>0.00</td></tr><tr><td>99.040</td><td>98.988</td><td>62.461</td><td>64.068</td><td>0.00</td><td>0.00</td></tr><tr><td>98.988</td><td>98.247</td><td>64.068</td><td>89.034</td><td>0.00</td><td>0.00</td></tr><tr><td>98.247</td><td>98.049</td><td>89.034</td><td>95.692</td><td>0.00</td><td>0.00</td></tr><tr><td>98.049</td><td>96.260</td><td>95.692</td><td>155.908</td><td>0.00</td><td>0.00</td></tr><tr><td>96.260</td><td>94.130</td><td>155.908</td><td>117.215</td><td>0.00</td><td>0.00</td></tr><tr><td>94.130</td><td>91.320</td><td>117.215</td><td>76.295</td><td>0.00</td><td>0.00</td></tr><tr><td>91.320</td><td>80.000</td><td>76.295</td><td>122.725</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.25</td><td>102.55</td></tr></table></div> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table></div> <div>Passive Erddruckkoordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.40</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.13</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-12.42</td><td>-13.90</td></tr><tr><td>102.45</td><td>102.21</td><td>-14.24</td><td>-23.90</td></tr><tr><td>102.21</td><td>102.11</td><td>-23.90</td><td>-27.77</td></tr><tr><td>102.11</td><td>101.42</td><td>-27.77</td><td>-54.81</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.250	106.248	0.000	43.702	0.00	0.00	106.248	105.913	43.702	46.180	0.00	0.00	105.913	105.761	46.180	10.712	0.00	0.00	105.761	105.500	10.712	12.645	0.00	0.00	105.500	105.250	12.645	13.619	0.00	2.50	105.250	104.250	15.832	21.392	2.50	12.50	104.250	103.720	21.392	24.751	12.50	17.80	103.720	103.250	24.751	27.729	17.80	22.50	103.250	103.160	27.729	28.299	22.50	23.40	103.160	103.125	28.299	28.672	23.40	23.75	103.125	102.550	28.672	37.713	23.75	29.50	102.550	102.450	37.714	39.285	0.00	0.00	102.450	102.205	30.064	33.374	0.00	0.00	102.205	102.107	33.374	34.697	0.00	0.00	102.107	101.422	34.697	43.964	0.00	0.00	101.422	101.217	43.965	46.186	0.00	0.00	101.217	100.422	46.186	54.704	0.00	0.00	100.422	100.222	54.704	55.862	0.00	0.00	100.222	99.220	55.862	61.657	0.00	0.00	99.220	99.070	61.657	62.526	0.00	0.00	99.070	99.040	62.526	62.461	0.00	0.00	99.040	98.988	62.461	64.068	0.00	0.00	98.988	98.247	64.068	89.034	0.00	0.00	98.247	98.049	89.034	95.692	0.00	0.00	98.049	96.260	95.692	155.908	0.00	0.00	96.260	94.130	155.908	117.215	0.00	0.00	94.130	91.320	117.215	76.295	0.00	0.00	91.320	80.000	76.295	122.725	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.25	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.13	102.55	0.00	0.00	102.55	102.45	-12.42	-13.90	102.45	102.21	-14.24	-23.90	102.21	102.11	-23.90	-27.77	102.11	101.42	-27.77	-54.81	<div>Seite Anlage R2/36</div> <div>Archiv Nr.:</div>
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																												
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[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																													
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3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																													
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[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																
103.13	102.55	0.00	0.00																																																																																																																																																																																																																																																																																																
102.55	102.45	-12.42	-13.90																																																																																																																																																																																																																																																																																																
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102.21	102.11	-23.90	-27.77																																																																																																																																																																																																																																																																																																
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Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																		

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> 101.42 101.22 -54.81 -62.89 101.22 100.42 -62.89 -94.29 100.42 100.22 -94.29 -102.19 100.22 99.22 -102.19 -141.71 99.22 99.07 -141.71 -147.64 99.07 99.04 -147.64 -148.82 99.04 98.99 -148.82 -150.87 98.99 98.25 -150.87 -180.14 98.25 98.05 -180.14 -187.94 98.05 96.26 -187.94 -258.54 96.26 94.13 -258.54 -342.60 94.13 91.32 -342.60 -453.50 91.32 80.00 -453.50 -900.26 </div> <div> Schnittgrößen (Bemessungswerte) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.25 0.0 0.0 0.0 106.25 -0.1 -0.1 0.0 105.91 -15.1 -19.2 -3.2 105.76 -20.8 -24.8 -6.6 105.50 -28.5 -28.6 -13.6 105.50 -56.9 -28.6 -31.7 105.25 -64.4 -33.2 -39.4 104.25 -94.8 -66.8 -87.7 103.72 -111.8 -93.2 -129.8 -172.2 103.72 -111.8 78.9 -129.8 103.25 -127.4 50.4 -99.2 103.16 -130.4 44.4 -95.0 103.13 -131.6 42.0 -93.4 102.55 -152.0 -3.0 -81.7 102.45 -154.4 -7.4 -82.2 102.21 -156.4 -7.4 -84.1 102.11 -156.6 -6.3 -84.8 101.42 -151.4 14.0 -82.5 101.22 -149.7 19.0 -79.1 100.42 -144.2 29.6 -58.9 100.22 -143.1 30.5 -52.9 99.22 -138.0 29.0 -22.4 99.07 -137.3 28.0 -18.1 99.04 -137.1 27.8 -17.2 98.99 -136.9 27.4 -15.8 98.25 -133.3 8.9 -0.9 98.05 -132.4 0.0 0.0 </div> <div> Schnittgrößen ([g+q+w],k) Tiefe N Q M A(h) [mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m] 106.25 0.0 0.0 0.0 106.25 -0.1 -0.1 0.0 105.91 -11.9 -15.1 -2.5 105.76 -16.3 -19.4 -5.2 105.50 -22.4 -22.5 -10.7 105.50 -43.4 -22.5 -24.1 105.25 -49.3 -26.1 -30.1 104.25 -73.1 -51.9 -67.8 103.72 -86.5 -72.2 -100.5 -132.4 103.72 -86.5 60.2 -100.5 103.25 -98.7 38.4 -77.2 103.16 -101.0 33.8 -73.9 103.13 -102.0 32.0 -72.8 102.55 -118.0 -2.4 -63.9 102.45 -120.1 -5.9 -64.3 102.21 -121.6 -5.9 -65.8 102.11 -121.8 -5.0 -66.3 101.42 -117.7 10.9 -64.6 101.22 -116.4 14.8 -62.0 100.42 -112.1 23.2 -46.2 100.22 -111.3 23.9 -41.5 99.22 -107.3 22.7 -17.5 99.07 -106.7 21.9 -14.2 </div>		
Schnitt:	Anlage R2 Schnitt 9L	Seite Anlage R2/37
Kapitel:	6 LF 4 (BS-P, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



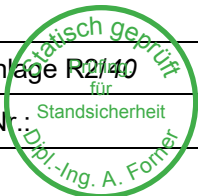
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.04 -106.6 21.8 -13.5</div><div>98.99 -106.4 21.5 -12.4</div><div>98.25 -103.6 7.0 -0.7</div><div>98.05 -102.9 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.25</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>105.91</div><div>-11.9</div><div>-15.1</div><div>-2.5</div><div></div></div><div><div>105.76</div><div>-16.3</div><div>-19.4</div><div>-5.2</div><div></div></div><div><div>105.50</div><div>-22.4</div><div>-22.5</div><div>-10.7</div><div></div></div><div><div>105.50</div><div>-43.4</div><div>-22.5</div><div>-24.1</div><div></div></div><div><div>105.25</div><div>-49.3</div><div>-26.1</div><div>-30.1</div><div></div></div><div><div>104.25</div><div>-73.1</div><div>-51.9</div><div>-67.8</div><div></div></div><div><div>103.72</div><div>-86.5</div><div>-72.2</div><div>-100.5</div><div>-132.4</div></div><div><div>103.72</div><div>-86.5</div><div>60.2</div><div>-100.5</div><div></div></div><div><div>103.25</div><div>-98.7</div><div>38.4</div><div>-77.2</div><div></div></div><div><div>103.16</div><div>-101.0</div><div>33.8</div><div>-73.9</div><div></div></div><div><div>103.13</div><div>-102.0</div><div>32.0</div><div>-72.8</div><div></div></div><div><div>102.55</div><div>-118.0</div><div>-2.4</div><div>-63.9</div><div></div></div><div><div>102.45</div><div>-120.1</div><div>-5.9</div><div>-64.3</div><div></div></div><div><div>102.21</div><div>-121.6</div><div>-5.9</div><div>-65.8</div><div></div></div><div><div>102.11</div><div>-121.8</div><div>-5.0</div><div>-66.3</div><div></div></div><div><div>101.42</div><div>-117.7</div><div>10.9</div><div>-64.6</div><div></div></div><div><div>101.22</div><div>-116.4</div><div>14.8</div><div>-62.0</div><div></div></div><div><div>100.42</div><div>-112.1</div><div>23.2</div><div>-46.2</div><div></div></div><div><div>100.22</div><div>-111.3</div><div>23.9</div><div>-41.5</div><div></div></div><div><div>99.22</div><div>-107.3</div><div>22.7</div><div>-17.5</div><div></div></div><div><div>99.07</div><div>-106.7</div><div>21.9</div><div>-14.2</div><div></div></div><div><div>99.04</div><div>-106.6</div><div>21.8</div><div>-13.5</div><div></div></div><div><div>98.99</div><div>-106.4</div><div>21.5</div><div>-12.4</div><div></div></div><div><div>98.25</div><div>-103.6</div><div>7.0</div><div>-0.7</div><div></div></div><div><div>98.05</div><div>-102.9</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div><div>[kN/m]</div></div></div><div><div>106.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.91</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.76</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.72</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-4.2</div></div><div><div>103.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.13</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.21</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.11</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.42</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.22</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.42</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.22</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.22</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.07</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.04</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.99</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.25</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>98.05</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div></div></div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/38
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																									
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.96</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.30</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-1.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.6</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.50</td><td>-1.5</td><td>0.00</td><td>0.00</td><td>23.03</td></tr><tr><td>102.50</td><td>-1.5</td><td>5.00</td><td>7.74</td><td>23.03</td></tr><tr><td>102.45</td><td>-1.5</td><td>5.00</td><td>7.67</td><td>24.32</td></tr><tr><td>102.45</td><td>-1.5</td><td>16.25</td><td>24.92</td><td>24.92</td></tr><tr><td>102.40</td><td>-1.5</td><td>16.25</td><td>24.70</td><td>28.30</td></tr><tr><td>102.25</td><td>-1.5</td><td>25.98</td><td>38.45</td><td>38.45</td></tr><tr><td>102.21</td><td>-1.5</td><td>25.98</td><td>38.12</td><td>41.83</td></tr><tr><td>102.21</td><td>-1.5</td><td>28.51</td><td>41.83</td><td>41.83</td></tr><tr><td>102.16</td><td>-1.5</td><td>28.51</td><td>41.48</td><td>45.21</td></tr><tr><td>102.16</td><td>-1.5</td><td>31.08</td><td>45.21</td><td>45.21</td></tr><tr><td>102.11</td><td>-1.4</td><td>31.08</td><td>44.83</td><td>48.59</td></tr><tr><td>102.11</td><td>-1.4</td><td>33.68</td><td>48.59</td><td>48.59</td></tr><tr><td>102.06</td><td>-1.4</td><td>33.68</td><td>48.19</td><td>51.97</td></tr><tr><td>101.47</td><td>-1.3</td><td>50.00</td><td>65.46</td><td>92.54</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>65.04</td><td>95.93</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>65.04</td><td>95.93</td></tr><tr><td>101.37</td><td>-1.3</td><td>50.00</td><td>64.62</td><td>99.46</td></tr><tr><td>101.27</td><td>-1.3</td><td>50.00</td><td>63.81</td><td>106.53</td></tr><tr><td>101.22</td><td>-1.3</td><td>50.00</td><td>63.43</td><td>110.06</td></tr><tr><td>101.22</td><td>-1.3</td><td>50.00</td><td>63.43</td><td>110.06</td></tr><tr><td>101.17</td><td>-1.3</td><td>50.00</td><td>63.06</td><td>113.59</td></tr><tr><td>100.46</td><td>-1.2</td><td>50.00</td><td>59.30</td><td>162.27</td></tr><tr><td>100.42</td><td>-1.2</td><td>50.00</td><td>59.15</td><td>165.01</td></tr><tr><td>100.42</td><td>-1.2</td><td>50.00</td><td>59.15</td><td>165.01</td></tr><tr><td>100.37</td><td>-1.2</td><td>50.00</td><td>58.97</td><td>168.46</td></tr><tr><td>100.27</td><td>-1.2</td><td>50.00</td><td>58.65</td><td>175.38</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-3.4	-	-	-	106.25	-3.4	-	-	-	106.25	-3.4	-	-	-	106.20	-3.4	-	-	-	105.96	-3.2	-	-	-	105.91	-3.2	-	-	-	105.91	-3.2	-	-	-	105.86	-3.2	-	-	-	105.81	-3.2	-	-	-	105.76	-3.1	-	-	-	105.76	-3.1	-	-	-	105.75	-3.1	-	-	-	105.55	-3.0	-	-	-	105.50	-3.0	-	-	-	105.50	-3.0	-	-	-	105.45	-2.9	-	-	-	105.30	-2.8	-	-	-	105.25	-2.8	-	-	-	105.25	-2.8	-	-	-	105.20	-2.8	-	-	-	104.30	-2.3	-	-	-	104.25	-2.2	-	-	-	104.25	-2.2	-	-	-	104.20	-2.2	-	-	-	103.75	-2.0	-	-	-	103.72	-2.0	-	-	-	103.72	-2.0	-	-	-	103.67	-2.0	-	-	-	103.30	-1.8	-	-	-	103.25	-1.8	-	-	-	103.25	-1.8	-	-	-	103.20	-1.8	-	-	-	103.20	-1.8	-	-	-	103.16	-1.8	-	-	-	103.16	-1.8	-	-	-	103.13	-1.8	-	-	-	103.13	-1.8	-	-	-	103.08	-1.7	-	-	-	102.60	-1.6	-	-	-	102.55	-1.6	0.00	0.00	0.00	102.55	-1.6	0.00	0.00	21.74	102.50	-1.5	0.00	0.00	23.03	102.50	-1.5	5.00	7.74	23.03	102.45	-1.5	5.00	7.67	24.32	102.45	-1.5	16.25	24.92	24.92	102.40	-1.5	16.25	24.70	28.30	102.25	-1.5	25.98	38.45	38.45	102.21	-1.5	25.98	38.12	41.83	102.21	-1.5	28.51	41.83	41.83	102.16	-1.5	28.51	41.48	45.21	102.16	-1.5	31.08	45.21	45.21	102.11	-1.4	31.08	44.83	48.59	102.11	-1.4	33.68	48.59	48.59	102.06	-1.4	33.68	48.19	51.97	101.47	-1.3	50.00	65.46	92.54	101.42	-1.3	50.00	65.04	95.93	101.42	-1.3	50.00	65.04	95.93	101.37	-1.3	50.00	64.62	99.46	101.27	-1.3	50.00	63.81	106.53	101.22	-1.3	50.00	63.43	110.06	101.22	-1.3	50.00	63.43	110.06	101.17	-1.3	50.00	63.06	113.59	100.46	-1.2	50.00	59.30	162.27	100.42	-1.2	50.00	59.15	165.01	100.42	-1.2	50.00	59.15	165.01	100.37	-1.2	50.00	58.97	168.46	100.27	-1.2	50.00	58.65	175.38
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100.42	-1.2	50.00	59.15	165.01																																																																																																																																																																																																																																																																																																																																																							
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100.37	-1.2	50.00	58.97	168.46																																																																																																																																																																																																																																																																																																																																																							
100.27	-1.2	50.00	58.65	175.38																																																																																																																																																																																																																																																																																																																																																							
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/39																																																																																																																																																																																																																																																																																																																																																									
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 210624																																																																																																																																																																																																																																																																																																																																																									
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																									



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																					
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																							
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																					
<table><tr><td>100.22</td><td>-1.2</td><td>50.00</td><td>58.50</td><td>178.84</td></tr><tr><td>100.22</td><td>-1.2</td><td>50.00</td><td>58.50</td><td>178.84</td></tr><tr><td>100.17</td><td>-1.2</td><td>50.00</td><td>58.36</td><td>182.29</td></tr><tr><td>99.27</td><td>-1.1</td><td>50.00</td><td>57.06</td><td>244.54</td></tr><tr><td>99.22</td><td>-1.1</td><td>50.00</td><td>57.04</td><td>247.99</td></tr><tr><td>99.22</td><td>-1.1</td><td>50.00</td><td>57.04</td><td>247.99</td></tr><tr><td>99.17</td><td>-1.1</td><td>50.00</td><td>57.02</td><td>251.45</td></tr><tr><td>99.12</td><td>-1.1</td><td>50.00</td><td>57.01</td><td>254.91</td></tr><tr><td>99.07</td><td>-1.1</td><td>50.00</td><td>57.00</td><td>258.37</td></tr><tr><td>99.07</td><td>-1.1</td><td>50.00</td><td>57.00</td><td>258.37</td></tr><tr><td>99.04</td><td>-1.1</td><td>50.00</td><td>56.99</td><td>260.44</td></tr><tr><td>99.04</td><td>-1.1</td><td>50.00</td><td>56.99</td><td>260.44</td></tr><tr><td>98.99</td><td>-1.1</td><td>50.00</td><td>56.99</td><td>264.02</td></tr><tr><td>98.99</td><td>-1.1</td><td>50.00</td><td>56.99</td><td>264.02</td></tr><tr><td>98.94</td><td>-1.1</td><td>50.00</td><td>56.98</td><td>267.44</td></tr><tr><td>98.30</td><td>-1.1</td><td>50.00</td><td>57.09</td><td>311.83</td></tr><tr><td>98.25</td><td>-1.1</td><td>50.00</td><td>57.10</td><td>315.24</td></tr><tr><td>98.25</td><td>-1.1</td><td>50.00</td><td>57.10</td><td>315.24</td></tr><tr><td>98.20</td><td>-1.1</td><td>50.00</td><td>57.11</td><td>318.66</td></tr><tr><td>98.10</td><td>-1.1</td><td>50.00</td><td>57.14</td><td>325.49</td></tr><tr><td>98.05</td><td>-1.1</td><td>50.00</td><td>57.15</td><td>328.90</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00031316 Theoretischer Fußpunkt = 98.049 m</p> <p>Einbindetiefe tg = 4.50 m Profillänge = 8.20 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k G,k = 155.17 kN/m G',k = 0.00 kN/m Pv,k = 21.00 kN/m Eav,k = 63.05 kN/m (Eah,k = 342.01 kN/m) Bv,k = 100.58 Summe V,k = 138.65 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m² Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 242.00 / 1.40 = 172.86 kN/m Rd = Rb,d + Rs1,d = 1037.91 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 209.48 - 0.00 + 80.39 + 28.35 = 318.22 kN/m ==> µ = V,d / Rd = 318.22 / 1037.91 = 0.31</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.22	-1.2	50.00	58.50	178.84	100.22	-1.2	50.00	58.50	178.84	100.17	-1.2	50.00	58.36	182.29	99.27	-1.1	50.00	57.06	244.54	99.22	-1.1	50.00	57.04	247.99	99.22	-1.1	50.00	57.04	247.99	99.17	-1.1	50.00	57.02	251.45	99.12	-1.1	50.00	57.01	254.91	99.07	-1.1	50.00	57.00	258.37	99.07	-1.1	50.00	57.00	258.37	99.04	-1.1	50.00	56.99	260.44	99.04	-1.1	50.00	56.99	260.44	98.99	-1.1	50.00	56.99	264.02	98.99	-1.1	50.00	56.99	264.02	98.94	-1.1	50.00	56.98	267.44	98.30	-1.1	50.00	57.09	311.83	98.25	-1.1	50.00	57.10	315.24	98.25	-1.1	50.00	57.10	315.24	98.20	-1.1	50.00	57.11	318.66	98.10	-1.1	50.00	57.14	325.49	98.05	-1.1	50.00	57.15	328.90	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flussskies, -sand
100.22	-1.2	50.00	58.50	178.84																																																																																																																			
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Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/40																																																																																																																					
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 21.06.2024																																																																																																																					
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>7 LF 5 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 16_BS 9_LF5 (10 kN_m², BS-T).vrb Datum: 20.06.2024</div> <div>Indices: d = Bemessungswert k = charakteristisch g = Ständig, einschließlich Wasserdruck q = Veränderlich g+q = Ständig + Veränderlich, einschließlich Wasserdruck w = Wasserdruck</div> <div>Wandkopf = 106.25 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 102.55 mNHN Bohrpfahldurchmesser = 0.88 m Bohrpfahlabstand = 1.50 m Anzahl unbew. Pfähle = 1</div> <div>Grundwasserstand (Erdseite) = 105.50 mNHN Grundwasserstand (Luftseite) = 105.50 mNHN Wasserdruck auf "0.0" gesetzt, wenn zur Erdseite gerichtet.</div> <div>Teilsicherheiten BS: DIN EN 1997-1: BS-T gamma(G) = 1.20 gamma(G,Ruhe) = 1.10 gamma(Q) = 1.30 gamma(Ep) = 1.30 Anpassungsfaktor Erdwiderstand = 0.80</div> <div>Bermen auf der Aktivseite Nr. x1 x2 dh a x y Auflast Verkehr [-] [m] [m] [m] [m] [m] [m] [kN/m²] [-] 1 2.20 5.11 1.43 1.08 2.04 2.70 23.20 nein Der Einfluss von Aktivbermen auf den aktiven Erddruck wird gemäß den Beziehungen in "Spundwand-Handbuch Berechnung (1977) Abschnitt 4.9.2.2" berechnet. Bei steilen Bermen ist gegebenenfalls ein getrennter Nachweis der Standsicherheit der Berme erforderlich. Bei Bermen ohne Kohäsion gilt: Ausnutzung mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Lasten (zweiseitig begrenzt) Nr. sig(v) x(Luftseite) x(Erdseite) Tiefe y(1) y(2) y(3) y(4) Verkehrslast [-] [kN/m²] [m] [m] [mNHN] [mNHN] [mNHN] [mNHN] [mNHN] [-] 1 23.20 0.00 5.11 106.25 106.25 106.25 101.42 98.99 nein 2 93.90 0.00 0.33 106.25 106.25 106.25 105.91 105.76 nein Steuerparameter = 0.50</div> <div>Passivseite Lasten (einseitig begrenzt) Nr. sigma x(Luftseite) Tiefe y(oben) [-] [kN/m²] [m] [mNHN] [mNHN] 1 3.30 0.00 102.55 102.55</div> <div>Zusatzdrücke Nr. e(oben) e(unten) z(oben) z(unten) Typ [-] [kN/m²] [kN/m²] [mNHN] [mNHN] [-] 1 0.00 17.80 103.16 99.07 Ständig 2 17.80 0.00 99.07 94.13 Ständig 3 0.00 92.20 99.04 96.26 Ständig 4 92.20 0.00 96.26 91.32 Ständig 5 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/41
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Kraftträger

Momente (entgegen dem Uhrzeigersinn positiv)

Horizontalkräfte (nach Erdseite positiv)

Vertikalkräfte (nach unten positiv)

Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k
[-]	[mNHN]	[kN·m/m]	[kN·m/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
1	105.50	-13.40	0.00	0.00	0.00	21.00	0.00

Art des Fußlagers:

Profillänge automatisch und Fuß gebettet

Profillänge = 8.20 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	102.45	5.000	5.000
102.45	80.00	50.000	50.000

Ausnutzungsgrad $\mu_e = 300.134 / 479.889 = 0.625$

Bettungslager $B_{h,d} = 300.134 \text{ kN/m}$

Erdwiderstand $E_{ph,d} = 479.889 \text{ kN/m}$

Anker und Steifen

$N_{,d}' = \text{ Bemessungswert (Steifen) mit BS-P (1.275/1.50)}$

$N_{w,k}$ kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	$N_{,d}$	$N(g+q+w),k$	$N(q+w),k$	$N_{w,k}$	EA	EI	$N_{,d}'$
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	103.72	0.00	8.30	-170.15	-146.18	-146.18	-45.08	3.900E+7	2.100E+7	-186.38

Zusätzlich für Steifen

Steife I

Vertikallast [kN/m²/m]: 0.00

max $M_{,d}$ [kN·m/m]: 0.00

gelenkig an Verbauwand angeschlossen

gegenüberliegende Seite gelenkig

x	y	$w_{x,d}$	$w_{y,d}$	$N_{,d}$	$Q_{,d}$	$M_{,d}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-2.3	0.0	-170.36	0.00	0.00
-7.47	103.72	-2.3	0.0	-170.36	0.00	0.00
-7.47	103.72	-2.3	0.0	-170.36	0.00	0.00
-6.64	103.72	-2.3	0.0	-170.36	0.00	0.00
-5.81	103.72	-2.3	0.0	-170.36	0.00	0.00
-4.98	103.72	-2.3	0.0	-170.36	0.00	0.00
-4.15	103.72	-2.3	0.0	-170.36	0.00	0.00
-3.32	103.72	-2.3	0.0	-170.36	0.00	0.00
-2.49	103.72	-2.3	0.0	-170.36	0.00	0.00
-1.66	103.72	-2.3	0.0	-170.36	0.00	0.00
-0.83	103.72	-2.3	0.0	-170.36	0.00	0.00
0.00	103.72	-2.3	0.0	-170.36	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden aus der Datei

P:\2004\2004-0025\Planung\Elstermühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 9\Linkes Ufer\12_BS 9_LF2.1 (ohne Lasten).vrb

eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0020

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	q_c	$c_{u,k}$
[-]	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[kN/m²]	[-]	[-]	[MN/m²]	[kN/m²]
1	105.25	19.00	10.00	30.00	0.00	0.00	-0.667	0.667	0.00	0.00
2	102.45	17.00	8.50	22.50	3.00	3.00	-0.667	0.667	0.00	40.00
3	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00

Schnitt:	Anlage R2	Schnitt 9L	Seite Anlage R2/42
Kapitel:	7	LF 5 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																	
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion <> 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kagh</td><td>kach</td><td>phi,k</td><td>delta</td><td>theta</td><td>kagh(40°)</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td><td>[-]</td></tr><tr><td>1</td><td>105.25</td><td>0.390</td><td>0.461</td><td>30.000</td><td>10.00</td><td>57.80</td><td>0.179</td></tr><tr><td>2</td><td>102.45</td><td>0.501</td><td>0.555</td><td>22.500</td><td>7.50</td><td>53.61</td><td>0.179</td></tr><tr><td>3</td><td>80.00</td><td>0.357</td><td>0.433</td><td>32.500</td><td>10.84</td><td>59.19</td><td>0.179</td></tr></table></div> <div>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td><td colspan="2">Wasserdruck</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>106.250</td><td>106.248</td><td>0.000</td><td>45.650</td><td>0.00</td><td>0.00</td></tr><tr><td>106.248</td><td>105.913</td><td>45.650</td><td>48.128</td><td>0.00</td><td>0.00</td></tr><tr><td>105.913</td><td>105.761</td><td>48.128</td><td>12.661</td><td>0.00</td><td>0.00</td></tr><tr><td>105.761</td><td>105.500</td><td>12.661</td><td>14.594</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>14.594</td><td>15.568</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>104.250</td><td>18.335</td><td>24.253</td><td>2.50</td><td>12.50</td></tr><tr><td>104.250</td><td>103.720</td><td>24.253</td><td>27.915</td><td>12.50</td><td>17.80</td></tr><tr><td>103.720</td><td>103.250</td><td>27.915</td><td>31.163</td><td>17.80</td><td>22.50</td></tr><tr><td>103.250</td><td>103.160</td><td>31.163</td><td>31.784</td><td>22.50</td><td>23.40</td></tr><tr><td>103.160</td><td>103.125</td><td>31.784</td><td>32.177</td><td>23.40</td><td>23.75</td></tr><tr><td>103.125</td><td>102.550</td><td>32.177</td><td>41.547</td><td>23.75</td><td>29.50</td></tr><tr><td>102.550</td><td>102.450</td><td>41.548</td><td>43.177</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.205</td><td>32.836</td><td>36.246</td><td>0.00</td><td>0.00</td></tr><tr><td>102.205</td><td>102.107</td><td>36.246</td><td>37.609</td><td>0.00</td><td>0.00</td></tr><tr><td>102.107</td><td>101.422</td><td>37.609</td><td>47.156</td><td>0.00</td><td>0.00</td></tr><tr><td>101.422</td><td>101.217</td><td>47.156</td><td>49.311</td><td>0.00</td><td>0.00</td></tr><tr><td>101.217</td><td>100.422</td><td>49.311</td><td>57.537</td><td>0.00</td><td>0.00</td></tr><tr><td>100.422</td><td>100.222</td><td>57.537</td><td>58.549</td><td>0.00</td><td>0.00</td></tr><tr><td>100.222</td><td>99.220</td><td>58.549</td><td>63.610</td><td>0.00</td><td>0.00</td></tr><tr><td>99.220</td><td>99.070</td><td>63.610</td><td>64.369</td><td>0.00</td><td>0.00</td></tr><tr><td>99.070</td><td>99.040</td><td>64.369</td><td>64.282</td><td>0.00</td><td>0.00</td></tr><tr><td>99.040</td><td>98.988</td><td>64.282</td><td>65.851</td><td>0.00</td><td>0.00</td></tr><tr><td>98.988</td><td>98.247</td><td>65.851</td><td>90.817</td><td>0.00</td><td>0.00</td></tr><tr><td>98.247</td><td>98.049</td><td>90.817</td><td>97.475</td><td>0.00</td><td>0.00</td></tr><tr><td>98.049</td><td>96.260</td><td>97.475</td><td>157.691</td><td>0.00</td><td>0.00</td></tr><tr><td>96.260</td><td>94.130</td><td>157.691</td><td>118.998</td><td>0.00</td><td>0.00</td></tr><tr><td>94.130</td><td>91.320</td><td>118.998</td><td>78.078</td><td>0.00</td><td>0.00</td></tr><tr><td>91.320</td><td>80.000</td><td>78.078</td><td>124.508</td><td>0.00</td><td>0.00</td></tr></table></div> <div>Hydrodynamische Wasserdruckspannung</div> <div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div> <div><table><tr><td>w(oben)</td><td>w(unten)</td><td>z(oben)</td><td>z(unten)</td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td></tr><tr><td>0.00</td><td>0.00</td><td>106.25</td><td>102.55</td></tr></table></div> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div><table><tr><td>Schicht</td><td>UK</td><td>kpgh</td><td>kpch</td><td>phi,k</td><td>delta</td><td>theta</td></tr><tr><td>[-]</td><td>[mNHN]</td><td>[-]</td><td>[-]</td><td>[°]</td><td>[°]</td><td>[°]</td></tr><tr><td>2</td><td>102.45</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>3</td><td>80.00</td><td>6.006</td><td>6.054</td><td>32.500</td><td>-21.68</td><td>16.35</td></tr></table></div> <div>Passive Erddruckkoordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> <div><table><tr><td>von</td><td>bis</td><td>oben</td><td>unten</td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>103.13</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.45</td><td>-13.38</td><td>-14.97</td></tr><tr><td>102.45</td><td>102.21</td><td>-15.34</td><td>-25.74</td></tr><tr><td>102.21</td><td>102.11</td><td>-25.74</td><td>-29.90</td></tr><tr><td>102.11</td><td>101.42</td><td>-29.90</td><td>-59.03</td></tr></table></div>			Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]	1	105.25	0.390	0.461	30.000	10.00	57.80	0.179	2	102.45	0.501	0.555	22.500	7.50	53.61	0.179	3	80.00	0.357	0.433	32.500	10.84	59.19	0.179	von	bis	oben	unten	Wasserdruck		[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	[kN/m²]	106.250	106.248	0.000	45.650	0.00	0.00	106.248	105.913	45.650	48.128	0.00	0.00	105.913	105.761	48.128	12.661	0.00	0.00	105.761	105.500	12.661	14.594	0.00	0.00	105.500	105.250	14.594	15.568	0.00	2.50	105.250	104.250	18.335	24.253	2.50	12.50	104.250	103.720	24.253	27.915	12.50	17.80	103.720	103.250	27.915	31.163	17.80	22.50	103.250	103.160	31.163	31.784	22.50	23.40	103.160	103.125	31.784	32.177	23.40	23.75	103.125	102.550	32.177	41.547	23.75	29.50	102.550	102.450	41.548	43.177	0.00	0.00	102.450	102.205	32.836	36.246	0.00	0.00	102.205	102.107	36.246	37.609	0.00	0.00	102.107	101.422	37.609	47.156	0.00	0.00	101.422	101.217	47.156	49.311	0.00	0.00	101.217	100.422	49.311	57.537	0.00	0.00	100.422	100.222	57.537	58.549	0.00	0.00	100.222	99.220	58.549	63.610	0.00	0.00	99.220	99.070	63.610	64.369	0.00	0.00	99.070	99.040	64.369	64.282	0.00	0.00	99.040	98.988	64.282	65.851	0.00	0.00	98.988	98.247	65.851	90.817	0.00	0.00	98.247	98.049	90.817	97.475	0.00	0.00	98.049	96.260	97.475	157.691	0.00	0.00	96.260	94.130	157.691	118.998	0.00	0.00	94.130	91.320	118.998	78.078	0.00	0.00	91.320	80.000	78.078	124.508	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	106.25	102.55	Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	2	102.45	3.034	3.911	22.500	-15.01	23.23	3	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	103.13	102.55	0.00	0.00	102.55	102.45	-13.38	-14.97	102.45	102.21	-15.34	-25.74	102.21	102.11	-25.74	-29.90	102.11	101.42	-29.90	-59.03	<div>Seite Anlage R2/43</div> <div>Archiv Nr.:</div>
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>101.42101.22-59.03-67.73</div><div>101.22100.42-67.73-101.54</div><div>100.42100.22-101.54-110.05</div><div>100.2299.22-110.05-152.61</div><div>99.2299.07-152.61-159.00</div><div>99.0799.04-159.00-160.27</div><div>99.0498.99-160.27-162.47</div><div>98.9998.25-162.47-194.00</div><div>98.2598.05-194.00-202.40</div><div>98.0596.26-202.40-278.43</div><div>96.2694.13-278.43-368.96</div><div>94.1391.32-368.96-488.39</div><div>91.3280.00-488.39-969.51</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>106.250.00.00.0</div><div>106.25-0.1-0.10.0</div><div>105.91-13.9-18.1-3.0</div><div>105.76-19.2-23.4-6.2</div><div>105.50-26.3-27.5-12.9</div><div>105.50-51.5-27.5-29.0</div><div>105.25-58.6-32.2-36.4</div><div>104.25-86.8-65.4-83.6</div><div>103.72-102.6-90.9-124.8-170.4</div><div>103.72-102.679.5-124.8</div><div>103.25-117.152.2-93.7</div><div>103.16-119.946.4-89.2</div><div>103.13-121.044.1-87.6</div><div>102.55-140.11.4-74.1</div><div>102.45-142.3-3.0-74.1</div><div>102.21-144.1-3.9-75.1</div><div>102.11-144.3-3.2-75.4</div><div>101.42-139.413.3-72.4</div><div>101.22-137.717.4-69.2</div><div>100.42-132.126.0-51.2</div><div>100.22-130.926.6-46.0</div><div>99.22-125.325.1-19.5</div><div>99.07-124.524.3-15.8</div><div>99.04-124.324.1-15.1</div><div>98.99-124.023.8-13.8</div><div>98.25-120.07.8-0.8</div><div>98.05-118.90.00.0</div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div>TiefeNQM A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>106.250.00.00.0</div><div>106.25-0.1-0.10.0</div><div>105.91-12.1-15.8-2.6</div><div>105.76-16.7-20.4-5.4</div><div>105.50-22.9-23.9-11.2</div><div>105.50-43.9-23.9-24.6</div><div>105.25-50.0-28.0-31.1</div><div>104.25-74.6-56.5-72.0</div><div>103.72-88.3-78.3-107.5-146.2</div><div>103.72-88.367.8-107.5</div><div>103.25-100.944.5-81.0</div><div>103.16-103.439.6-77.2</div><div>103.13-104.337.7-75.8</div><div>102.55-120.91.1-64.2</div><div>102.45-123.1-2.7-64.3</div><div>102.21-124.6-3.4-65.2</div><div>102.11-124.8-2.8-65.5</div><div>101.42-120.511.5-62.9</div><div>101.22-119.015.1-60.1</div><div>100.42-114.222.5-44.5</div><div>100.22-113.223.1-39.9</div><div>99.22-108.321.8-16.9</div><div>99.07-107.621.1-13.7</div></div></div></div>					
Schnitt:		Anlage R2 Schnitt 9L		Seite Anlage R2/44	
Kapitel:		7 LF 5 (BS-T, mit Lasten)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>99.04 -107.5 21.0 -13.1</div><div>98.99 -107.2 20.7 -12.0</div><div>98.25 -103.7 6.8 -0.7</div><div>98.05 -102.7 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>106.25 0.0 0.0 0.0</div><div>106.25 -0.1 -0.1 0.0</div><div>105.91 -12.1 -15.8 -2.6</div><div>105.76 -16.7 -20.4 -5.4</div><div>105.50 -22.9 -23.9 -11.2</div><div>105.50 -43.9 -23.9 -24.6</div><div>105.25 -50.0 -28.0 -31.1</div><div>104.25 -74.6 -56.5 -72.0</div><div>103.72 -88.3 -78.3 -107.5 -146.2</div><div>103.72 -88.3 67.8 -107.5</div><div>103.25 -100.9 44.5 -81.0</div><div>103.16 -103.4 39.6 -77.2</div><div>103.13 -104.3 37.7 -75.8</div><div>102.55 -120.9 1.1 -64.2</div><div>102.45 -123.1 -2.7 -64.3</div><div>102.21 -124.6 -3.4 -65.2</div><div>102.11 -124.8 -2.8 -65.5</div><div>101.42 -120.5 11.5 -62.9</div><div>101.22 -119.0 15.1 -60.1</div><div>100.42 -114.2 22.5 -44.5</div><div>100.22 -113.2 23.1 -39.9</div><div>99.22 -108.3 21.8 -16.9</div><div>99.07 -107.6 21.1 -13.7</div><div>99.04 -107.5 21.0 -13.1</div><div>98.99 -107.2 20.7 -12.0</div><div>98.25 -103.7 6.8 -0.7</div><div>98.05 -102.7 0.0 0.0</div></div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div></div><div><div>106.25 0.0 0.0 0.0</div><div>106.25 0.0 0.0 0.0</div><div>105.91 0.0 0.0 0.0</div><div>105.76 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.25 0.0 0.0 0.0</div><div>104.25 0.0 0.0 0.0</div><div>103.72 0.0 0.0 0.0 -4.2</div><div>103.25 0.0 0.0 0.0</div><div>103.16 0.0 0.0 0.0</div><div>103.13 0.0 0.0 0.0</div><div>102.55 0.0 0.0 0.0</div><div>102.45 0.0 0.0 0.0</div><div>102.21 0.0 0.0 0.0</div><div>102.11 0.0 0.0 0.0</div><div>101.42 0.0 0.0 0.0</div><div>101.22 0.0 0.0 0.0</div><div>100.42 0.0 0.0 0.0</div><div>100.22 0.0 0.0 0.0</div><div>99.22 0.0 0.0 0.0</div><div>99.07 0.0 0.0 0.0</div><div>99.04 0.0 0.0 0.0</div><div>98.99 0.0 0.0 0.0</div><div>98.25 0.0 0.0 0.0</div><div>98.05 0.0 0.0 0.0</div></div></div></div></div></div>		
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/45
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																									
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<div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</div> <table><thead><tr><th>Tiefe</th><th>w</th><th>ks</th><th>sig,Bh,k</th><th>eph,k</th></tr><tr><th>[m]</th><th>[mm]</th><th>[kN/m³]</th><th>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.96</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.30</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-1.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.6</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.50</td><td>-1.6</td><td>0.00</td><td>0.00</td><td>23.03</td></tr><tr><td>102.50</td><td>-1.6</td><td>5.00</td><td>7.82</td><td>23.03</td></tr><tr><td>102.45</td><td>-1.6</td><td>5.00</td><td>7.75</td><td>24.32</td></tr><tr><td>102.45</td><td>-1.6</td><td>16.08</td><td>24.92</td><td>24.92</td></tr><tr><td>102.40</td><td>-1.5</td><td>16.08</td><td>24.71</td><td>28.30</td></tr><tr><td>102.25</td><td>-1.5</td><td>25.64</td><td>38.45</td><td>38.45</td></tr><tr><td>102.21</td><td>-1.5</td><td>25.64</td><td>38.14</td><td>41.83</td></tr><tr><td>102.21</td><td>-1.5</td><td>28.12</td><td>41.83</td><td>41.83</td></tr><tr><td>102.16</td><td>-1.5</td><td>28.12</td><td>41.50</td><td>45.21</td></tr><tr><td>102.16</td><td>-1.5</td><td>30.64</td><td>45.21</td><td>45.21</td></tr><tr><td>102.11</td><td>-1.5</td><td>30.64</td><td>44.86</td><td>48.59</td></tr><tr><td>102.11</td><td>-1.5</td><td>33.19</td><td>48.59</td><td>48.59</td></tr><tr><td>102.06</td><td>-1.5</td><td>33.19</td><td>48.22</td><td>51.97</td></tr><tr><td>101.47</td><td>-1.3</td><td>50.00</td><td>66.93</td><td>92.54</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>66.54</td><td>95.93</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>66.54</td><td>95.93</td></tr><tr><td>101.37</td><td>-1.3</td><td>50.00</td><td>66.14</td><td>99.46</td></tr><tr><td>101.27</td><td>-1.3</td><td>50.00</td><td>65.40</td><td>106.53</td></tr><tr><td>101.22</td><td>-1.3</td><td>50.00</td><td>65.04</td><td>110.06</td></tr><tr><td>101.22</td><td>-1.3</td><td>50.00</td><td>65.04</td><td>110.06</td></tr><tr><td>101.17</td><td>-1.3</td><td>50.00</td><td>64.70</td><td>113.59</td></tr><tr><td>100.46</td><td>-1.2</td><td>50.00</td><td>61.27</td><td>162.27</td></tr><tr><td>100.42</td><td>-1.2</td><td>50.00</td><td>61.14</td><td>165.01</td></tr><tr><td>100.42</td><td>-1.2</td><td>50.00</td><td>61.14</td><td>165.01</td></tr><tr><td>100.37</td><td>-1.2</td><td>50.00</td><td>60.98</td><td>168.46</td></tr><tr><td>100.27</td><td>-1.2</td><td>50.00</td><td>60.69</td><td>175.38</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-3.4	-	-	-	106.25	-3.4	-	-	-	106.25	-3.4	-	-	-	106.20	-3.4	-	-	-	105.96	-3.2	-	-	-	105.91	-3.2	-	-	-	105.91	-3.2	-	-	-	105.86	-3.2	-	-	-	105.81	-3.2	-	-	-	105.76	-3.1	-	-	-	105.76	-3.1	-	-	-	105.75	-3.1	-	-	-	105.55	-3.0	-	-	-	105.50	-3.0	-	-	-	105.50	-3.0	-	-	-	105.45	-2.9	-	-	-	105.30	-2.8	-	-	-	105.25	-2.8	-	-	-	105.25	-2.8	-	-	-	105.20	-2.8	-	-	-	104.30	-2.3	-	-	-	104.25	-2.2	-	-	-	104.25	-2.2	-	-	-	104.20	-2.2	-	-	-	103.75	-2.0	-	-	-	103.72	-2.0	-	-	-	103.72	-2.0	-	-	-	103.67	-2.0	-	-	-	103.30	-1.8	-	-	-	103.25	-1.8	-	-	-	103.25	-1.8	-	-	-	103.20	-1.8	-	-	-	103.20	-1.8	-	-	-	103.16	-1.8	-	-	-	103.16	-1.8	-	-	-	103.13	-1.8	-	-	-	103.13	-1.8	-	-	-	103.08	-1.7	-	-	-	102.60	-1.6	-	-	-	102.55	-1.6	0.00	0.00	0.00	102.55	-1.6	0.00	0.00	21.74	102.50	-1.6	0.00	0.00	23.03	102.50	-1.6	5.00	7.82	23.03	102.45	-1.6	5.00	7.75	24.32	102.45	-1.6	16.08	24.92	24.92	102.40	-1.5	16.08	24.71	28.30	102.25	-1.5	25.64	38.45	38.45	102.21	-1.5	25.64	38.14	41.83	102.21	-1.5	28.12	41.83	41.83	102.16	-1.5	28.12	41.50	45.21	102.16	-1.5	30.64	45.21	45.21	102.11	-1.5	30.64	44.86	48.59	102.11	-1.5	33.19	48.59	48.59	102.06	-1.5	33.19	48.22	51.97	101.47	-1.3	50.00	66.93	92.54	101.42	-1.3	50.00	66.54	95.93	101.42	-1.3	50.00	66.54	95.93	101.37	-1.3	50.00	66.14	99.46	101.27	-1.3	50.00	65.40	106.53	101.22	-1.3	50.00	65.04	110.06	101.22	-1.3	50.00	65.04	110.06	101.17	-1.3	50.00	64.70	113.59	100.46	-1.2	50.00	61.27	162.27	100.42	-1.2	50.00	61.14	165.01	100.42	-1.2	50.00	61.14	165.01	100.37	-1.2	50.00	60.98	168.46	100.27	-1.2	50.00	60.69	175.38
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105.45	-2.9	-	-	-																																																																																																																																																																																																																																																																																																																																																							
105.30	-2.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
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104.30	-2.3	-	-	-																																																																																																																																																																																																																																																																																																																																																							
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103.72	-2.0	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.72	-2.0	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.67	-2.0	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.30	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
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103.20	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.16	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.16	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
103.13	-1.8	-	-	-																																																																																																																																																																																																																																																																																																																																																							
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103.08	-1.7	-	-	-																																																																																																																																																																																																																																																																																																																																																							
102.60	-1.6	-	-	-																																																																																																																																																																																																																																																																																																																																																							
102.55	-1.6	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																							
102.55	-1.6	0.00	0.00	21.74																																																																																																																																																																																																																																																																																																																																																							
102.50	-1.6	0.00	0.00	23.03																																																																																																																																																																																																																																																																																																																																																							
102.50	-1.6	5.00	7.82	23.03																																																																																																																																																																																																																																																																																																																																																							
102.45	-1.6	5.00	7.75	24.32																																																																																																																																																																																																																																																																																																																																																							
102.45	-1.6	16.08	24.92	24.92																																																																																																																																																																																																																																																																																																																																																							
102.40	-1.5	16.08	24.71	28.30																																																																																																																																																																																																																																																																																																																																																							
102.25	-1.5	25.64	38.45	38.45																																																																																																																																																																																																																																																																																																																																																							
102.21	-1.5	25.64	38.14	41.83																																																																																																																																																																																																																																																																																																																																																							
102.21	-1.5	28.12	41.83	41.83																																																																																																																																																																																																																																																																																																																																																							
102.16	-1.5	28.12	41.50	45.21																																																																																																																																																																																																																																																																																																																																																							
102.16	-1.5	30.64	45.21	45.21																																																																																																																																																																																																																																																																																																																																																							
102.11	-1.5	30.64	44.86	48.59																																																																																																																																																																																																																																																																																																																																																							
102.11	-1.5	33.19	48.59	48.59																																																																																																																																																																																																																																																																																																																																																							
102.06	-1.5	33.19	48.22	51.97																																																																																																																																																																																																																																																																																																																																																							
101.47	-1.3	50.00	66.93	92.54																																																																																																																																																																																																																																																																																																																																																							
101.42	-1.3	50.00	66.54	95.93																																																																																																																																																																																																																																																																																																																																																							
101.42	-1.3	50.00	66.54	95.93																																																																																																																																																																																																																																																																																																																																																							
101.37	-1.3	50.00	66.14	99.46																																																																																																																																																																																																																																																																																																																																																							
101.27	-1.3	50.00	65.40	106.53																																																																																																																																																																																																																																																																																																																																																							
101.22	-1.3	50.00	65.04	110.06																																																																																																																																																																																																																																																																																																																																																							
101.22	-1.3	50.00	65.04	110.06																																																																																																																																																																																																																																																																																																																																																							
101.17	-1.3	50.00	64.70	113.59																																																																																																																																																																																																																																																																																																																																																							
100.46	-1.2	50.00	61.27	162.27																																																																																																																																																																																																																																																																																																																																																							
100.42	-1.2	50.00	61.14	165.01																																																																																																																																																																																																																																																																																																																																																							
100.42	-1.2	50.00	61.14	165.01																																																																																																																																																																																																																																																																																																																																																							
100.37	-1.2	50.00	60.98	168.46																																																																																																																																																																																																																																																																																																																																																							
100.27	-1.2	50.00	60.69	175.38																																																																																																																																																																																																																																																																																																																																																							
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/46																																																																																																																																																																																																																																																																																																																																																									
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 21.06.2024																																																																																																																																																																																																																																																																																																																																																									
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																									

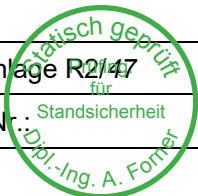
Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):												
Auftraggeber: Stadtverwaltung Leipzig														
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024												
<div>100.22 -1.2 50.00 60.57 178.84</div> <div>100.22 -1.2 50.00 60.57 178.84</div> <div>100.17 -1.2 50.00 60.44 182.29</div> <div>99.27 -1.2 50.00 59.44 244.54</div> <div>99.22 -1.2 50.00 59.44 247.99</div> <div>99.22 -1.2 50.00 59.44 247.99</div> <div>99.17 -1.2 50.00 59.43 251.45</div> <div>99.12 -1.2 50.00 59.43 254.91</div> <div>99.07 -1.2 50.00 59.44 258.37</div> <div>99.07 -1.2 50.00 59.44 258.37</div> <div>99.04 -1.2 50.00 59.44 260.44</div> <div>99.04 -1.2 50.00 59.44 260.44</div> <div>98.99 -1.2 50.00 59.45 264.02</div> <div>98.99 -1.2 50.00 59.45 264.02</div> <div>98.94 -1.2 50.00 59.46 267.44</div> <div>98.30 -1.2 50.00 59.74 311.83</div> <div>98.25 -1.2 50.00 59.77 315.24</div> <div>98.25 -1.2 50.00 59.77 315.24</div> <div>98.20 -1.2 50.00 59.80 318.66</div> <div>98.10 -1.2 50.00 59.85 325.49</div> <div>98.05 -1.2 50.00 59.88 328.90</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: 0.00062813</div> <div>Theoretischer Fußpunkt = 98.049 m</div> <div>Einbindetiefe tg = 4.50 m</div> <div>Profillänge = 8.20 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: Pv,k + G,k - G',k + Eav,k >= Bv,k</div> <div>G,k = 155.17 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 21.00 kN/m</div> <div>Eav,k = 66.78 kN/m (Eah,k = 363.72 kN/m)</div> <div>Bv,k = 103.72</div> <div>Summe V,k = 139.23 kN/m (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit</div> <div>(Erfahrungswerte nach EA Pfähle)</div> <div>Verfahren 2: EAU Bild E 4-3 (rechts)</div> <div>Bohrpfahlwand D = 0.88 m</div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck qc,m = 7.50 MN/m²</div> <div>(gemittelt von 98.93 bis 95.41 m) ==> qb,k = 1.60 MN/m²</div> <div>Rb,d = A · qb,k / gamma(qb,k) = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</div> <div>Mantelreibung</div> <div><table><tr><td>von</td><td>bis</td><td>qs,k [kN/m²]</td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.45</td><td>98.05</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div> <div>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==> Rs1,d</div> <div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 242.00 / 1.40 = 172.86 kN/m</div> <div>Rd = Rb,d + Rs1,d = 1037.91 kN/m</div> <div>Einwirkungen</div> <div>V,d = G,d - G',k + Eav,d + Pv,d = 186.20 - 0.00 + 76.79 + 25.20 = 288.19 kN/m</div> <div>==> µ = V,d / Rd = 288.19 / 1037.91 = 0.28</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.05	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.45	0.00	S2: Auelehm											
102.45	98.05	55.00	s3: Flussskies, -sand											
Schnitt: Anlage R2 Schnitt 9L		Seite Anlage R2/47												
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025												
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025												

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024

Anlage S2 Schnitt 10

Anlage S2 entfällt, da eine unverankerte Wand vorliegt, die Konstruktiun nicht durch zu berücksichtigende Bauzustände geprägt ist und die berechneten Lastfälle bereits die gewählte Absetztiefe durch die Anlage S1 ergaben.

Eine Schnittgrößenermittlung mit der gewählten Absetztiefe würde keine Änderungen in den Schnittgrößen hervorrufen, so dass auf eine erneute Berechnung verzichtet wurde.

Schnitt:	Anlage S2 Schnitt 10	Seite Anlage S2/19.
Kapitel:	7 LF 5 (BS-T, mit Lasten)	Archiv Nr.: 2004-0025
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025



Baumaßnahme:	Öffnung des Elstermühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<div>Schlussblatt</div>		
Schnitt: Anlage S2 Schnitt 10		Seite Anlage S2/2
Kapitel: 7 LF 5 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		

