

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p><b>Ausdruckprotokolle GGU RETAIN - Inhaltsverzeichnis</b></p> <p>- Berechnungsstufe 1: Ermittlung der Einbindetiefen -</p> <p><b><u>Inhaltsverzeichnis</u></b></p> <p><b>Anlage A1 Schnitt 1R..... A1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... A1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... A1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....A1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten).....A1/18</p> <p>5 LF 3 (BS-T, mit Lasten).....A1/25</p> <p>6 LF 4 (BS-P, mit Lasten) .....A1/31</p> <p><b>Anlage B1 Schnitt 2R..... B1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... B1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... B1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....B1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten).....B1/18</p> <p>5 LF 3 (BS-T, mit Lasten).....B1/24</p> <p>6 LF 4 (BS-P, mit Lasten) .....30</p> <p><b>Anlage C1 Schnitt 3R..... C1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... C1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... C1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... C1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... C1/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... C1/24</p> <p>6 LF 4 (BS-P, mit Lasten) ..... C1/30</p> <p><b>Anlage D1 Schnitt 4R..... D1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... D1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... D1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... D1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... D1/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... D1/24</p> <p>6 LF 4 (BS-P, mit Lasten) ..... D1/30</p>		
Schnitt: -		Seite 1
Kapitel: Inhaltsverzeichnis		Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p><b>Anlage E1 Schnitt 5R..... E1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... E1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... E1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....E1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten).....E1/18</p> <p>5 LF 3 (BS-T, mit Lasten).....E1/24</p> <p>6 LF 4 (BS-P, mit Lasten) .....E1/30</p> <p><b>Anlage F1 Schnitt 6R..... F1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... F1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten).....F1/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... F1/13</p> <p>4 LF 2.2 (BS-T, mit Lasten).....F1/19</p> <p>5 LF 3 (BS-T, mit Lasten)..... F1/26</p> <p>6 LF 4 (BS-P, mit Lasten) .....F1/32</p> <p><b>Anlage G1 Schnitt 7R..... G1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... G1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... G1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... G1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... G1/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... G1/24</p> <p>6 LF 4 (BS-P, mit Lasten) ..... G1/30</p> <p><b>Anlage H1 Schnitt 8R..... H1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... H1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... H1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... H1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... H1/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... H1/24</p> <p>6 LF 4 (BS-P, mit Lasten) ..... H1/30</p>		
Schnitt: -		Seite 2
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Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum: 21.06.2024
<p><b>Anlage I1 Schnitt 9R.....I1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten).....I1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten).....I1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....I1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten).....I1/18</p> <p>5 LF 3 (BS-T, mit Lasten).....I1/24</p> <p>6 LF 4 (BS-P, mit Lasten) .....I1/30</p> <p><b>Anlage J1 Schnitt 1L.....J1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... J1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... J1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... J1/11</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... J1/17</p> <p>5 LF 3 (BS-T, mit Lasten)..... J1/23</p> <p>6 LF 4 (BS-P, mit Lasten) ..... J1/29</p> <p><b>Anlage K1 Schnitt 2L..... K1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... K1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... K1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten).....K1/11</p> <p>4 LF 2.2 (BS-T, mit Lasten).....K1/17</p> <p>5 LF 3 (BS-T, mit Lasten).....K1/23</p> <p>6 LF 4 (BS-P, mit Lasten) .....K1/29</p> <p><b>Anlage L1 Schnitt 3L..... L1/1</b></p> <p>1 LF 1 (BS-T) ..... L1/1</p> <p>2 LF 2 (BS-T) ..... L1/10</p> <p>3 LF 3 (BS-T) ..... L1/19</p> <p>4 LF 4 (BS-P) ..... L1/28</p> <p><b>Anlage M1 Schnitt 4L.....M1/1</b></p> <p>1 LF 1 (BS-T) ..... M1/1</p> <p>2 LF 2 (BS-T) ..... M1/10</p> <p>3 LF 3 (BS-T) ..... M1/20</p> <p>4 LF 4 (BS-P) ..... M1/30</p>		
Schnitt:	-	Seite 3
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p><b>Anlage N1 Schnitt 5L..... N1/1</b></p> <p>1 LF 1 (BS-T) ..... N1/1</p> <p>2 LF 2 (BS-T) ..... N1/10</p> <p>3 LF 3 (BS-T) ..... N1/19</p> <p>4 LF 4 (BS-P) ..... N1/28</p> <p><b>Anlage O1 Schnitt 6L..... O1/1</b></p> <p>1 LF 1 (BS-T) ..... O1/1</p> <p>2 LF 2 (BS-T) ..... O1/10</p> <p>3 LF 3 (BS-T) ..... O1/19</p> <p>4 LF 4 (BS-P) ..... O1/28</p> <p><b>Anlage P1 Schnitt 7L..... P1/1</b></p> <p>1 LF 1 (BS-T) ..... P1/1</p> <p>2 LF 2 (BS-T) ..... P1/10</p> <p>3 LF 3 (BS-T) ..... P1/20</p> <p>4 LF 4 (BS-P) ..... P1/30</p> <p><b>Anlage Q1 Schnitt 8L..... Q1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... Q1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... Q1/7</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... Q1/14</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... Q1/21</p> <p>5 LF 3 (BS-T, mit Lasten)..... Q1/29</p> <p>6 LF 4 (BS-P, mit Lasten) ..... Q1/36</p> <p><b>Anlage R1 Schnitt 9L..... R1/1</b></p> <p>1 LF 1.1 (BS-T, ohne Lasten)..... R1/1</p> <p>2 LF 1.2 (BS-T, mit Lasten)..... R1/6</p> <p>3 LF 2.1 (BS-T, ohne Lasten)..... R1/12</p> <p>4 LF 2.2 (BS-T, mit Lasten)..... R1/18</p> <p>5 LF 3 (BS-T, mit Lasten)..... R1/24</p> <p>6 LF 4 (BS-P, mit Lasten) ..... R1/30</p>		
Schnitt: -		Seite 4
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<p><b>Anlage S1 Schnitt 10 ..... S1/1</b></p> <p>1 LF 1 (BS-T) ..... S1/1</p> <p>2 LF 2 (BS-P) ..... S1/7</p> <p><b>Schlussblatt ..... S1/13</b></p>		
Schnitt: -		Seite 5
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<div>Anlage A1 Schnitt 1R</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 1 Datei: 00_BS 1_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 = 7.11 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>103.94</td><td>10.000</td><td>10.000</td></tr><tr><td>103.94</td><td>102.84</td><td>5.000</td><td>5.000</td></tr><tr><td>102.84</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 233.770 / 679.866 = 0.344 Bettungslager Bh,d = 233.770 kN/m Erdwiderstand Eph,d = 679.866 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	103.94	10.000	10.000	103.94	102.84	5.000	5.000	102.84	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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von	bis	ks(oben)	ks(unten)																																														
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Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/19.																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 119. für Standsicherheit Dipl.-Ing. A. Forner																																															
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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 &gt; 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>102.790</td><td>32.752</td><td>32.957</td><td>5.00</td><td>5.00</td></tr><tr><td>102.790</td><td>102.440</td><td>32.957</td><td>34.393</td><td>5.00</td><td>5.00</td></tr><tr><td>102.440</td><td>102.140</td><td>34.393</td><td>35.625</td><td>5.00</td><td>5.00</td></tr><tr><td>102.140</td><td>101.439</td><td>35.625</td><td>38.497</td><td>5.00</td><td>5.00</td></tr><tr><td>101.439</td><td>100.439</td><td>38.497</td><td>42.601</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>100.339</td><td>42.601</td><td>43.011</td><td>5.00</td><td>5.00</td></tr><tr><td>100.339</td><td>80.000</td><td>43.011</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><tr><td>103.94</td><td>103.45</td><td>-62.48</td><td>-70.29</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	102.790	32.752	32.957	5.00	5.00	102.790	102.440	32.957	34.393	5.00	5.00	102.440	102.140	34.393	35.625	5.00	5.00	102.140	101.439	35.625	38.497	5.00	5.00	101.439	100.439	38.497	42.601	5.00	5.00	100.439	100.339	42.601	43.011	5.00	5.00	100.339	80.000	43.011	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	103.94	103.45	-62.48	-70.29	<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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<table> <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>102.79</td><td>-143.95</td><td>-146.08</td></tr> <tr><td>102.79</td><td>102.44</td><td>-146.08</td><td>-160.96</td></tr> <tr><td>102.44</td><td>102.14</td><td>-160.96</td><td>-173.72</td></tr> <tr><td>102.14</td><td>101.44</td><td>-173.72</td><td>-203.49</td></tr> <tr><td>101.44</td><td>100.44</td><td>-203.49</td><td>-246.01</td></tr> <tr><td>100.44</td><td>100.34</td><td>-246.01</td><td>-250.26</td></tr> <tr><td>100.34</td><td>80.00</td><td>-250.26</td><td>-1114.70</td></tr> </table> <p>Schnittgrößen (Bemessungswerte)</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>106.45</td><td>-23.3</td><td>-4.3</td><td>-1.4</td></tr> <tr><td>106.00</td><td>-34.8</td><td>-9.0</td><td>-4.3</td></tr> <tr><td>105.50</td><td>-41.6</td><td>-4.5</td><td>-8.6</td></tr> <tr><td>105.45</td><td>-42.0</td><td>-3.3</td><td>-8.8</td></tr> <tr><td>105.00</td><td>-45.5</td><td>4.5</td><td>-8.3</td></tr> <tr><td>104.41</td><td>-50.9</td><td>9.5</td><td>-4.0</td></tr> <tr><td>104.07</td><td>-54.5</td><td>10.5</td><td>-0.6</td></tr> <tr><td>103.94</td><td>-55.9</td><td>10.4</td><td>0.8</td></tr> <tr><td>103.45</td><td>-64.8</td><td>-4.0</td><td>2.7</td></tr> <tr><td>103.20</td><td>-69.4</td><td>-13.7</td><td>0.5</td></tr> <tr><td>102.84</td><td>-76.1</td><td>-29.9</td><td>-7.4</td></tr> <tr><td>102.79</td><td>-77.0</td><td>-31.6</td><td>-8.9</td></tr> <tr><td>102.44</td><td>-71.0</td><td>-12.7</td><td>-16.5</td></tr> <tr><td>102.14</td><td>-67.1</td><td>-0.4</td><td>-18.4</td></tr> <tr><td>101.44</td><td>-63.0</td><td>14.6</td><td>-12.3</td></tr> <tr><td>100.44</td><td>-68.4</td><td>3.2</td><td>-0.2</td></tr> 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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> 102.14 -58.4 -0.3 -15.9  101.44 -54.8 12.7 -10.6  100.44 -59.5 2.8 -0.1  100.34 -60.7 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  106.45 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  104.41 0.0 0.0 0.0  104.07 0.0 0.0 0.0  103.94 0.0 0.0 0.0  103.45 0.0 0.0 0.0  103.20 0.0 0.0 0.0  102.84 0.0 0.0 0.0  102.79 0.0 0.0 0.0  102.44 0.0 0.0 0.0  102.14 0.0 0.0 0.0  101.44 0.0 0.0 0.0  100.44 0.0 0.0 0.0  100.34 0.0 0.0 0.0 </div> </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]  107.45 -4.7 - - -  107.40 -4.7 - - -  106.50 -4.1 - - -  106.45 -4.1 - - -  106.45 -4.1 - - -  106.40 -4.1 - - -  106.05 -3.8 - - -  106.00 -3.8 0.00 0.00 0.00  106.00 -3.8 0.00 0.00 0.00  105.95 -3.8 0.00 0.00 4.75  105.55 -3.5 10.00 35.25 42.79  105.50 -3.5 10.00 34.93 47.55  105.50 -3.5 10.00 34.93 47.55  105.45 -3.5 10.00 34.62 52.30  105.45 -3.5 10.00 34.62 52.30  105.40 -3.4 10.00 34.30 57.06  105.05 -3.2 10.00 32.11 90.34  105.00 -3.2 10.00 31.80 95.10  105.00 -3.2 10.00 31.80 95.10  104.95 -3.1 10.00 31.50 97.56  104.46 -2.8 10.00 28.45 122.16  104.41 -2.8 10.00 28.15 124.62  104.41 -2.8 10.00 28.15 124.62  104.36 -2.8 10.00 27.85 127.08  104.12 -2.6 10.00 26.33 139.38  104.07 -2.6 10.00 26.03 141.84  104.07 -2.6 10.00 26.03 141.84  104.02 -2.6 10.00 25.77 143.94  103.98 -2.6 10.00 25.51 146.05  103.94 -2.5 10.00 25.25 148.15  103.94 -2.5 5.00 12.63 101.53  103.89 -2.5 5.00 12.47 102.80  103.50 -2.3 5.00 11.26 112.95  103.45 -2.2 5.00 11.11 114.22  103.45 -2.2 5.00 11.11 114.22  103.40 -2.2 5.00 10.96 115.49  103.25 -2.1 5.00 10.50 119.29  103.20 -2.1 5.00 10.35 120.56  103.20 -2.1 5.00 10.35 120.56  103.15 -2.0 5.00 10.19 121.90 </div>			
Schnitt:	Anlage A1	Schnitt 1R	Seite Anlage A1/4
Kapitel:	1	LF 1.1 (BS-T, ohne Lasten)	Archiv Nr. 114
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>102.89</div><div>-1.9</div><div>5.00</div><div>9.39</div><div>128.56</div></div><div><div>102.84</div><div>-1.8</div><div>5.00</div><div>9.23</div><div>129.89</div></div><div><div>102.84</div><div>-1.8</div><div>5.00</div><div>9.23</div><div>233.92</div></div><div><div>102.79</div><div>-1.8</div><div>5.00</div><div>9.08</div><div>237.38</div></div><div><div>102.79</div><div>-1.8</div><div>50.00</div><div>90.77</div><div>237.38</div></div><div><div>102.74</div><div>-1.8</div><div>50.00</div><div>89.23</div><div>240.83</div></div><div><div>102.49</div><div>-1.6</div><div>50.00</div><div>81.57</div><div>258.11</div></div><div><div>102.44</div><div>-1.6</div><div>50.00</div><div>80.04</div><div>261.56</div></div><div><div>102.44</div><div>-1.6</div><div>50.00</div><div>80.04</div><div>261.56</div></div><div><div>102.39</div><div>-1.6</div><div>50.00</div><div>78.52</div><div>265.02</div></div><div><div>102.19</div><div>-1.4</div><div>50.00</div><div>72.46</div><div>278.84</div></div><div><div>102.14</div><div>-1.4</div><div>50.00</div><div>70.96</div><div>282.29</div></div><div><div>102.14</div><div>-1.4</div><div>50.00</div><div>70.96</div><div>282.29</div></div><div><div>102.09</div><div>-1.4</div><div>50.00</div><div>69.46</div><div>285.75</div></div><div><div>101.49</div><div>-1.0</div><div>50.00</div><div>51.68</div><div>327.21</div></div><div><div>101.44</div><div>-1.0</div><div>50.00</div><div>50.22</div><div>330.67</div></div><div><div>101.44</div><div>-1.0</div><div>50.00</div><div>50.22</div><div>330.67</div></div><div><div>101.39</div><div>-1.0</div><div>50.00</div><div>48.76</div><div>334.12</div></div><div><div>100.49</div><div>-0.5</div><div>50.00</div><div>22.69</div><div>396.31</div></div><div><div>100.44</div><div>-0.4</div><div>50.00</div><div>21.25</div><div>399.77</div></div><div><div>100.44</div><div>-0.4</div><div>50.00</div><div>21.25</div><div>399.77</div></div><div><div>100.39</div><div>-0.4</div><div>50.00</div><div>19.81</div><div>403.22</div></div><div><div>100.39</div><div>-0.4</div><div>50.00</div><div>19.81</div><div>403.22</div></div><div><div>100.34</div><div>-0.4</div><div>50.00</div><div>18.37</div><div>406.68</div></div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03304414 Theoretischer Fußpunkt = 100.339 m</div><div>Einbindetiefe tg = 5.66 m Profillänge = 7.11 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 134.54 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 31.94 kN/m (Eah,k = 177.65 kN/m) Bv,k = 76.92 Summe V,k = 89.56 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 101.22 bis 97.70 m) ==&gt; 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>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>100.34</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table>Mantelfläche bis 100.34 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 137.50 / 1.40 = 98.21 kN/m Rd = Rb,d + Rs1,d = 963.26 kN/m</div><div>Einwirkungen Vd = G,d - G',k + Eav,d + Pv,d = 161.45 - 0.00 + 36.73 + 0.00 = 198.18 kN/m ==&gt; µ = Vd / Rd = 198.18 / 963.26 = 0.21</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			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	100.34	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung															
106.00	103.94	0.00	S1: Auffüllungen															
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Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/5																
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 115																
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>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: 01_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 = 7.50 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 A1 Schnitt 1R		Seite Anlage A1/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft  
für  
Standsicherheit  
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																						
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<div>Ausnutzungsgrad <math>\mu_e = 532.671 / 539.895 = 0.987</math> Bettungslager <math>B_{h,d} = 532.671 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 539.895 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{a,k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>c &gt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>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>102.645</td><td>39.509</td><td>40.486</td><td>5.00</td><td>5.00</td></tr><tr><td>102.645</td><td>102.596</td><td>40.486</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>101.426</td><td>41.306</td><td>43.714</td><td>5.00</td><td>5.00</td></tr><tr><td>101.426</td><td>101.326</td><td>43.714</td><td>43.955</td><td>5.00</td><td>5.00</td></tr><tr><td>101.326</td><td>100.479</td><td>43.955</td><td>46.002</td><td>5.00</td><td>5.00</td></tr><tr><td>100.479</td><td>100.431</td><td>46.002</td><td>46.200</td><td>5.00</td><td>5.00</td></tr><tr><td>100.431</td><td>99.949</td><td>46.200</td><td>48.177</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>48.177</td><td>129.999</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><math>w(oben)</math></th><th><math>w(unten)</math></th><th><math>z(oben)</math></th><th><math>z(unten)</math></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> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></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>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></tbody></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	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	0.000	46.780	0.00	0.00	107.448	106.450	46.780	54.166	0.00	0.00	106.450	106.000	54.166	57.873	0.00	0.00	106.000	105.500	57.873	62.067	0.00	0.00	105.500	105.447	62.067	62.327	0.00	0.53	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	102.645	39.509	40.486	5.00	5.00	102.645	102.596	40.486	40.730	5.00	5.00	102.596	102.422	40.730	41.306	5.00	5.00	102.422	101.426	41.306	43.714	5.00	5.00	101.426	101.326	43.714	43.955	5.00	5.00	101.326	100.479	43.955	46.002	5.00	5.00	100.479	100.431	46.002	46.200	5.00	5.00	100.431	99.949	46.200	48.177	5.00	5.00	99.949	80.000	48.177	129.999	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	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	
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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103.448	103.202	46.183	51.792	5.00	5.00																																																																																																																																																																																																																																																																																																					
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Dipl.-Ing. A. Forner



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Auftraggeber: Stadtverwaltung Leipzig		-									
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024									
<div><div><div>102.84-47.9-31.6-223.8</div><div>102.64-37.3-4.3-228.0</div><div>102.60-33.55.4-228.0</div><div>102.42-21.236.6-224.3</div><div>101.4314.6126.6-130.6</div><div>101.3315.0127.6-117.9</div><div>100.488.880.1-23.0</div><div>100.439.274.4-19.2</div><div>99.9519.60.00.0</div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.45</div><div>-21.7</div><div>-7.6</div><div>-3.2</div></div><div><div>106.00</div><div>-32.4</div><div>-13.5</div><div>-7.9</div></div><div><div>105.50</div><div>-40.5</div><div>-17.8</div><div>-16.0</div></div><div><div>105.45</div><div>-41.2</div><div>-17.9</div><div>-16.9</div></div><div><div>105.39</div><div>-41.8</div><div>-17.8</div><div>-17.9</div></div><div><div>105.00</div><div>-44.9</div><div>-15.4</div><div>-24.6</div></div><div><div>104.49</div><div>-46.4</div><div>-7.0</div><div>-30.5</div></div><div><div>104.43</div><div>-46.4</div><div>-6.0</div><div>-30.8</div></div><div><div>104.07</div><div>-47.2</div><div>-0.2</div><div>-31.9</div></div><div><div>103.94</div><div>-47.7</div><div>1.1</div><div>-31.8</div></div><div><div>103.45</div><div>-54.4</div><div>-11.8</div><div>-34.2</div></div><div><div>103.20</div><div>-57.9</div><div>-20.8</div><div>-38.2</div></div><div><div>102.84</div><div>-63.3</div><div>-36.2</div><div>-48.4</div></div><div><div>102.64</div><div>-59.5</div><div>-26.0</div><div>-54.9</div></div><div><div>102.60</div><div>-57.9</div><div>-21.9</div><div>-56.1</div></div><div><div>102.42</div><div>-52.6</div><div>-8.4</div><div>-58.7</div></div><div><div>101.43</div><div>-35.3</div><div>35.3</div><div>-40.5</div></div><div><div>101.33</div><div>-34.7</div><div>36.7</div><div>-37.0</div></div><div><div>100.48</div><div>-38.0</div><div>26.2</div><div>-7.6</div></div><div><div>100.43</div><div>-38.7</div><div>24.4</div><div>-6.4</div></div><div><div>99.95</div><div>-46.6</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><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>107.45</div><div>0.0</div><div>-0.1</div><div>0.0</div></div><div><div>106.45</div><div>-15.6</div><div>-42.8</div><div>-21.4</div></div><div><div>106.00</div><div>-22.6</div><div>-62.1</div><div>-45.0</div></div><div><div>105.50</div><div>-21.1</div><div>-77.1</div><div>-80.4</div></div><div><div>105.45</div><div>-20.5</div><div>-77.9</div><div>-84.5</div></div><div><div>105.39</div><div>-19.9</div><div>-78.5</div><div>-88.7</div></div><div><div>105.00</div><div>-13.7</div><div>-74.6</div><div>-119.3</div></div><div><div>104.49</div><div>-2.2</div><div>-49.3</div><div>-151.9</div></div><div><div>104.43</div><div>-0.9</div><div>-45.9</div><div>-154.4</div></div><div><div>104.07</div><div>7.1</div><div>-23.9</div><div>-167.1</div></div><div><div>103.94</div><div>9.5</div><div>-17.1</div><div>-169.7</div></div><div><div>103.45</div><div>12.6</div><div>-5.7</div><div>-175.2</div></div><div><div>103.20</div><div>13.8</div><div>-1.1</div><div>-176.0</div></div><div><div>102.84</div><div>15.3</div><div>4.6</div><div>-175.3</div></div><div><div>102.64</div><div>22.2</div><div>21.7</div><div>-173.1</div></div><div><div>102.60</div><div>24.4</div><div>27.3</div><div>-171.9</div></div><div><div>102.42</div><div>31.4</div><div>45.0</div><div>-165.6</div></div><div><div>101.43</div><div>49.8</div><div>91.3</div><div>-90.1</div></div><div><div>101.33</div><div>49.7</div><div>91.0</div><div>-81.0</div></div><div><div>100.48</div><div>46.9</div><div>53.9</div><div>-15.3</div></div><div><div>100.43</div><div>47.8</div><div>50.0</div><div>-12.8</div></div><div><div>99.95</div><div>66.2</div><div>0.0</div><div>0.0</div></div></div></div> <tr><td colspan="2">Schnitt: Anlage A1 Schnitt 1R</td><td>Seite Anlage A1/9</td></tr> <tr><td colspan="2">Kapitel: 2 LF 1.2 (BS-T, mit Lasten)</td><td>Archiv Nr.: 119</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/9	Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 119	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/9									
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 119									
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>107.45</td><td>-23.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-23.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-23.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-23.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-17.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-17.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-17.4</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-15.7</td><td>2.72</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-15.5</td><td>2.72</td><td>42.24</td><td>47.55</td></tr><tr><td>105.50</td><td>-15.5</td><td>3.07</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-15.3</td><td>3.07</td><td>46.89</td><td>52.61</td></tr><tr><td>105.45</td><td>-15.3</td><td>3.44</td><td>52.61</td><td>52.61</td></tr><tr><td>105.39</td><td>-15.1</td><td>3.44</td><td>51.87</td><td>57.67</td></tr><tr><td>105.39</td><td>-15.1</td><td>3.83</td><td>57.67</td><td>57.67</td></tr><tr><td>105.34</td><td>-14.9</td><td>3.83</td><td>56.91</td><td>62.35</td></tr><tr><td>105.05</td><td>-13.7</td><td>6.61</td><td>90.43</td><td>90.42</td></tr><tr><td>105.00</td><td>-13.5</td><td>6.61</td><td>89.13</td><td>95.10</td></tr><tr><td>105.00</td><td>-13.5</td><td>7.05</td><td>95.11</td><td>95.10</td></tr><tr><td>104.95</td><td>-13.3</td><td>7.05</td><td>93.66</td><td>97.67</td></tr><tr><td>104.54</td><td>-11.7</td><td>10.00</td><td>116.65</td><td>118.21</td></tr><tr><td>104.49</td><td>-11.5</td><td>10.00</td><td>114.67</td><td>120.78</td></tr><tr><td>104.49</td><td>-11.5</td><td>10.00</td><td>114.67</td><td>120.78</td></tr><tr><td>104.43</td><td>-11.3</td><td>10.00</td><td>112.65</td><td>123.41</td></tr><tr><td>104.43</td><td>-11.3</td><td>10.00</td><td>112.65</td><td>123.41</td></tr><tr><td>104.38</td><td>-11.1</td><td>10.00</td><td>110.64</td><td>126.05</td></tr><tr><td>104.12</td><td>-10.1</td><td>10.00</td><td>100.71</td><td>139.20</td></tr><tr><td>104.07</td><td>-9.9</td><td>10.00</td><td>98.76</td><td>141.84</td></tr><tr><td>104.07</td><td>-9.9</td><td>10.00</td><td>98.76</td><td>141.84</td></tr><tr><td>104.02</td><td>-9.7</td><td>10.00</td><td>97.20</td><td>143.94</td></tr><tr><td>103.98</td><td>-9.6</td><td>10.00</td><td>95.64</td><td>146.05</td></tr><tr><td>103.94</td><td>-9.4</td><td>10.00</td><td>94.10</td><td>148.15</td></tr><tr><td>103.94</td><td>-9.4</td><td>5.00</td><td>47.05</td><td>101.53</td></tr><tr><td>103.89</td><td>-9.2</td><td>5.00</td><td>46.15</td><td>102.80</td></tr><tr><td>103.50</td><td>-7.8</td><td>5.00</td><td>39.09</td><td>112.95</td></tr><tr><td>103.45</td><td>-7.6</td><td>5.00</td><td>38.23</td><td>114.22</td></tr><tr><td>103.45</td><td>-7.6</td><td>5.00</td><td>38.23</td><td>114.22</td></tr><tr><td>103.40</td><td>-7.5</td><td>5.00</td><td>37.37</td><td>115.49</td></tr><tr><td>103.25</td><td>-7.0</td><td>5.00</td><td>34.82</td><td>119.29</td></tr><tr><td>103.20</td><td>-6.8</td><td>5.00</td><td>33.97</td><td>120.56</td></tr><tr><td>103.20</td><td>-6.8</td><td>5.00</td><td>33.97</td><td>120.56</td></tr><tr><td>103.15</td><td>-6.6</td><td>5.00</td><td>33.10</td><td>121.90</td></tr><tr><td>102.89</td><td>-5.8</td><td>5.00</td><td>28.78</td><td>128.56</td></tr><tr><td>102.84</td><td>-5.6</td><td>5.00</td><td>27.93</td><td>129.89</td></tr><tr><td>102.84</td><td>-5.6</td><td>5.00</td><td>27.93</td><td>233.92</td></tr><tr><td>102.79</td><td>-5.4</td><td>5.00</td><td>27.13</td><td>237.30</td></tr><tr><td>102.69</td><td>-5.1</td><td>47.77</td><td>244.07</td><td>244.04</td></tr><tr><td>102.64</td><td>-5.0</td><td>47.77</td><td>236.58</td><td>247.42</td></tr><tr><td>102.64</td><td>-5.0</td><td>49.96</td><td>247.44</td><td>247.42</td></tr><tr><td>102.60</td><td>-4.8</td><td>49.96</td><td>239.65</td><td>250.79</td></tr><tr><td>102.60</td><td>-4.8</td><td>50.00</td><td>239.84</td><td>250.79</td></tr><tr><td>102.54</td><td>-4.6</td><td>50.00</td><td>230.67</td><td>254.78</td></tr><tr><td>102.48</td><td>-4.4</td><td>50.00</td><td>221.56</td><td>258.78</td></tr><tr><td>102.42</td><td>-4.3</td><td>50.00</td><td>212.51</td><td>262.78</td></tr><tr><td>102.42</td><td>-4.3</td><td>50.00</td><td>212.51</td><td>262.78</td></tr><tr><td>102.37</td><td>-4.1</td><td>50.00</td><td>204.78</td><td>266.22</td></tr><tr><td>101.48</td><td>-1.5</td><td>50.00</td><td>72.76</td><td>328.16</td></tr><tr><td>101.43</td><td>-1.3</td><td>50.00</td><td>65.76</td><td>331.60</td></tr><tr><td>101.43</td><td>-1.3</td><td>50.00</td><td>65.76</td><td>331.60</td></tr><tr><td>101.38</td><td>-1.2</td><td>50.00</td><td>58.79</td><td>335.04</td></tr><tr><td>101.38</td><td>-1.2</td><td>50.00</td><td>58.79</td><td>335.04</td></tr><tr><td>101.33</td><td>-1.0</td><td>50.00</td><td>51.85</td><td>338.48</td></tr><tr><td>101.33</td><td>-1.0</td><td>50.00</td><td>51.85</td><td>338.48</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-23.6	-	-	-	107.45	-23.6	-	-	-	107.45	-23.6	-	-	-	107.40	-23.4	-	-	-	106.50	-19.7	-	-	-	106.45	-19.4	-	-	-	106.45	-19.4	-	-	-	106.38	-19.2	-	-	-	106.05	-17.8	-	-	-	106.00	-17.6	0.00	0.00	0.00	106.00	-17.6	0.00	0.00	0.00	105.95	-17.4	0.00	0.00	4.75	105.55	-15.7	2.72	42.80	42.79	105.50	-15.5	2.72	42.24	47.55	105.50	-15.5	3.07	47.55	47.55	105.45	-15.3	3.07	46.89	52.61	105.45	-15.3	3.44	52.61	52.61	105.39	-15.1	3.44	51.87	57.67	105.39	-15.1	3.83	57.67	57.67	105.34	-14.9	3.83	56.91	62.35	105.05	-13.7	6.61	90.43	90.42	105.00	-13.5	6.61	89.13	95.10	105.00	-13.5	7.05	95.11	95.10	104.95	-13.3	7.05	93.66	97.67	104.54	-11.7	10.00	116.65	118.21	104.49	-11.5	10.00	114.67	120.78	104.49	-11.5	10.00	114.67	120.78	104.43	-11.3	10.00	112.65	123.41	104.43	-11.3	10.00	112.65	123.41	104.38	-11.1	10.00	110.64	126.05	104.12	-10.1	10.00	100.71	139.20	104.07	-9.9	10.00	98.76	141.84	104.07	-9.9	10.00	98.76	141.84	104.02	-9.7	10.00	97.20	143.94	103.98	-9.6	10.00	95.64	146.05	103.94	-9.4	10.00	94.10	148.15	103.94	-9.4	5.00	47.05	101.53	103.89	-9.2	5.00	46.15	102.80	103.50	-7.8	5.00	39.09	112.95	103.45	-7.6	5.00	38.23	114.22	103.45	-7.6	5.00	38.23	114.22	103.40	-7.5	5.00	37.37	115.49	103.25	-7.0	5.00	34.82	119.29	103.20	-6.8	5.00	33.97	120.56	103.20	-6.8	5.00	33.97	120.56	103.15	-6.6	5.00	33.10	121.90	102.89	-5.8	5.00	28.78	128.56	102.84	-5.6	5.00	27.93	129.89	102.84	-5.6	5.00	27.93	233.92	102.79	-5.4	5.00	27.13	237.30	102.69	-5.1	47.77	244.07	244.04	102.64	-5.0	47.77	236.58	247.42	102.64	-5.0	49.96	247.44	247.42	102.60	-4.8	49.96	239.65	250.79	102.60	-4.8	50.00	239.84	250.79	102.54	-4.6	50.00	230.67	254.78	102.48	-4.4	50.00	221.56	258.78	102.42	-4.3	50.00	212.51	262.78	102.42	-4.3	50.00	212.51	262.78	102.37	-4.1	50.00	204.78	266.22	101.48	-1.5	50.00	72.76	328.16	101.43	-1.3	50.00	65.76	331.60	101.43	-1.3	50.00	65.76	331.60	101.38	-1.2	50.00	58.79	335.04	101.38	-1.2	50.00	58.79	335.04	101.33	-1.0	50.00	51.85	338.48	101.33	-1.0	50.00	51.85	338.48
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105.45	-15.3	3.07	46.89	52.61																																																																																																																																																																																																																																																																																																																																																										
105.45	-15.3	3.44	52.61	52.61																																																																																																																																																																																																																																																																																																																																																										
105.39	-15.1	3.44	51.87	57.67																																																																																																																																																																																																																																																																																																																																																										
105.39	-15.1	3.83	57.67	57.67																																																																																																																																																																																																																																																																																																																																																										
105.34	-14.9	3.83	56.91	62.35																																																																																																																																																																																																																																																																																																																																																										
105.05	-13.7	6.61	90.43	90.42																																																																																																																																																																																																																																																																																																																																																										
105.00	-13.5	6.61	89.13	95.10																																																																																																																																																																																																																																																																																																																																																										
105.00	-13.5	7.05	95.11	95.10																																																																																																																																																																																																																																																																																																																																																										
104.95	-13.3	7.05	93.66	97.67																																																																																																																																																																																																																																																																																																																																																										
104.54	-11.7	10.00	116.65	118.21																																																																																																																																																																																																																																																																																																																																																										
104.49	-11.5	10.00	114.67	120.78																																																																																																																																																																																																																																																																																																																																																										
104.49	-11.5	10.00	114.67	120.78																																																																																																																																																																																																																																																																																																																																																										
104.43	-11.3	10.00	112.65	123.41																																																																																																																																																																																																																																																																																																																																																										
104.43	-11.3	10.00	112.65	123.41																																																																																																																																																																																																																																																																																																																																																										
104.38	-11.1	10.00	110.64	126.05																																																																																																																																																																																																																																																																																																																																																										
104.12	-10.1	10.00	100.71	139.20																																																																																																																																																																																																																																																																																																																																																										
104.07	-9.9	10.00	98.76	141.84																																																																																																																																																																																																																																																																																																																																																										
104.07	-9.9	10.00	98.76	141.84																																																																																																																																																																																																																																																																																																																																																										
104.02	-9.7	10.00	97.20	143.94																																																																																																																																																																																																																																																																																																																																																										
103.98	-9.6	10.00	95.64	146.05																																																																																																																																																																																																																																																																																																																																																										
103.94	-9.4	10.00	94.10	148.15																																																																																																																																																																																																																																																																																																																																																										
103.94	-9.4	5.00	47.05	101.53																																																																																																																																																																																																																																																																																																																																																										
103.89	-9.2	5.00	46.15	102.80																																																																																																																																																																																																																																																																																																																																																										
103.50	-7.8	5.00	39.09	112.95																																																																																																																																																																																																																																																																																																																																																										
103.45	-7.6	5.00	38.23	114.22																																																																																																																																																																																																																																																																																																																																																										
103.45	-7.6	5.00	38.23	114.22																																																																																																																																																																																																																																																																																																																																																										
103.40	-7.5	5.00	37.37	115.49																																																																																																																																																																																																																																																																																																																																																										
103.25	-7.0	5.00	34.82	119.29																																																																																																																																																																																																																																																																																																																																																										
103.20	-6.8	5.00	33.97	120.56																																																																																																																																																																																																																																																																																																																																																										
103.20	-6.8	5.00	33.97	120.56																																																																																																																																																																																																																																																																																																																																																										
103.15	-6.6	5.00	33.10	121.90																																																																																																																																																																																																																																																																																																																																																										
102.89	-5.8	5.00	28.78	128.56																																																																																																																																																																																																																																																																																																																																																										
102.84	-5.6	5.00	27.93	129.89																																																																																																																																																																																																																																																																																																																																																										
102.84	-5.6	5.00	27.93	233.92																																																																																																																																																																																																																																																																																																																																																										
102.79	-5.4	5.00	27.13	237.30																																																																																																																																																																																																																																																																																																																																																										
102.69	-5.1	47.77	244.07	244.04																																																																																																																																																																																																																																																																																																																																																										
102.64	-5.0	47.77	236.58	247.42																																																																																																																																																																																																																																																																																																																																																										
102.64	-5.0	49.96	247.44	247.42																																																																																																																																																																																																																																																																																																																																																										
102.60	-4.8	49.96	239.65	250.79																																																																																																																																																																																																																																																																																																																																																										
102.60	-4.8	50.00	239.84	250.79																																																																																																																																																																																																																																																																																																																																																										
102.54	-4.6	50.00	230.67	254.78																																																																																																																																																																																																																																																																																																																																																										
102.48	-4.4	50.00	221.56	258.78																																																																																																																																																																																																																																																																																																																																																										
102.42	-4.3	50.00	212.51	262.78																																																																																																																																																																																																																																																																																																																																																										
102.42	-4.3	50.00	212.51	262.78																																																																																																																																																																																																																																																																																																																																																										
102.37	-4.1	50.00	204.78	266.22																																																																																																																																																																																																																																																																																																																																																										
101.48	-1.5	50.00	72.76	328.16																																																																																																																																																																																																																																																																																																																																																										
101.43	-1.3	50.00	65.76	331.60																																																																																																																																																																																																																																																																																																																																																										
101.43	-1.3	50.00	65.76	331.60																																																																																																																																																																																																																																																																																																																																																										
101.38	-1.2	50.00	58.79	335.04																																																																																																																																																																																																																																																																																																																																																										
101.38	-1.2	50.00	58.79	335.04																																																																																																																																																																																																																																																																																																																																																										
101.33	-1.0	50.00	51.85	338.48																																																																																																																																																																																																																																																																																																																																																										
101.33	-1.0	50.00	51.85	338.48																																																																																																																																																																																																																																																																																																																																																										
Schnitt: Anlage A1 Schnitt 1R				Seite Anlage A1/10																																																																																																																																																																																																																																																																																																																																																										
Kapitel: 2 LF 1.2 (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):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div><div><div>101.28</div><div>-0.9</div><div>50.00</div><div>44.93</div><div>341.93</div></div><div><div>100.53</div><div>1.1</div><div>50.00</div><div>-56.72</div><div>393.54</div></div><div><div>100.48</div><div>1.3</div><div>50.00</div><div>-63.41</div><div>396.99</div></div><div><div>100.48</div><div>1.3</div><div>50.00</div><div>-63.41</div><div>396.99</div></div><div><div>100.43</div><div>1.4</div><div>50.00</div><div>-69.88</div><div>400.32</div></div><div><div>100.43</div><div>1.4</div><div>50.00</div><div>-69.88</div><div>400.32</div></div><div><div>100.38</div><div>1.5</div><div>50.00</div><div>-76.35</div><div>403.65</div></div><div><div>100.00</div><div>2.6</div><div>50.00</div><div>-128.01</div><div>430.28</div></div><div><div>99.95</div><div>2.7</div><div>50.00</div><div>-134.46</div><div>433.61</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.15342140 Theoretischer Fußpunkt = 99.949 m</div><div>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 141.92 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 62.19 kN/m (Eah,k = 343.42 kN/m) Bv,k = 163.32 Summe V,k = 40.78 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 100.83 bis 97.31 m) ==&gt; 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<div><div><div>von</div><div>bis</div><div>qs,k [kN/m²]</div><div>Bezeichnung</div></div><div><div>106.00</div><div>103.94</div><div>0.00</div><div>S1: Auffüllungen</div></div><div><div>103.94</div><div>102.84</div><div>0.00</div><div>S2: Auelehm</div></div><div><div>102.84</div><div>99.95</div><div>55.00</div><div>s3: Flussskies, -sand</div></div></div><div>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 158.95 / 1.40 = 113.54 kN/m R,d = Rb,d + Rs1,d = 978.58 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 170.31 - 0.00 + 74.45 + 0.00 = 244.76 kN/m ==&gt; µ = V,d / R,d = 244.76 / 978.58 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div></div></div>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/11
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 11/19
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
<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 1 Datei: 02_BS 1_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 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>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.00 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 = 201.631 / 204.335 = 0.987 Bettungslager Bh,d = 201.631 kN/m Erdwiderstand Eph,d = 204.335 kN/m</div>		
Schnitt:	Anlage A1 Schnitt 1R	Seite Anlage A1/12
Kapitel:	3 LF 2.1 (BS-T, ohne 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>Anker und Steifen</div> <div>N<sub>d</sub>' = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><div>Nr.</div><div>y</div><div>Neigung</div><div>Länge</div><div>N<sub>d</sub></div><div>N(g+q+w)<sub>k</sub></div><div>N(g+w)<sub>k</sub></div><div>N<sub>w,k</sub></div><div>EA</div><div>EI</div><div>N<sub>d</sub>'</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>106.95</div><div>0.00</div><div>1.00</div><div>-83.37</div><div>-72.17</div><div>-72.17</div><div>-7.56</div><div>6.900E+4</div><div>2.100E+7</div><div>-92.01</div><div>Steife</div></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div><div>x</div><div>y</div><div>w<sub>x,d</sub></div><div>w<sub>y,d</sub></div><div>N<sub>d</sub></div><div>Q<sub>d</sub></div><div>M<sub>d</sub></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>-1.00</div><div>106.95</div><div>-5.1</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.90</div><div>106.95</div><div>-5.2</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.90</div><div>106.95</div><div>-5.2</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.80</div><div>106.95</div><div>-5.3</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.70</div><div>106.95</div><div>-5.4</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.60</div><div>106.95</div><div>-5.6</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.50</div><div>106.95</div><div>-5.7</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.40</div><div>106.95</div><div>-5.8</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.30</div><div>106.95</div><div>-5.9</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.20</div><div>106.95</div><div>-6.0</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>-0.10</div><div>106.95</div><div>-6.2</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div><div>0.00</div><div>106.95</div><div>-6.3</div><div>0.0</div><div>-83.37</div><div>0.00</div><div>0.00</div></div> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden aus der Datei</div> <div>P:\2004\2004-0025\Planung\Elsternmühlgraben\Tragwerksplanung\Phase_4\TBA3.2\05_GGU\BS 1\Rechtes Ufer\00_BS 1_LF1.1 (ohne Lasten).vrb</div> <div>eingelesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div><div>[-]</div><div>[m]</div><div>[m]</div></div> <div><div>1</div><div>106.95</div><div>-0.0044</div></div> <div>Bodenkennwerte</div> <div><div>Schicht</div><div>UK</div><div>gam<sub>k</sub></div><div>gam'<sub>k</sub></div><div>phi<sub>k</sub></div><div>c(pas)<sub>k</sub></div><div>c(akt)<sub>k</sub></div><div>d(p)/phi</div><div>d(a)/phi</div><div>qc</div><div>cu<sub>k</sub></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>103.94</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>102.84</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>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 &lt; 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><div>Schicht</div><div>UK</div><div>kagh</div><div>kach</div><div>phi<sub>k</sub></div><div>delta</div><div>theta</div><div>kagh(40°)</div></div> <div><div>[-]</div><div>[mNHN]</div><div>[-]</div><div>[-]</div><div>[°]</div><div>[°]</div><div>[°]</div><div>[-]</div></div> <div><div>1</div><div>103.94</div><div>0.390</div><div>0.461</div><div>30.000</div><div>10.00</div><div>57.80</div><div>0.179</div></div> <div><div>2</div><div>102.84</div><div>0.501</div><div>0.555</div><div>22.500</div><div>7.50</div><div>53.61</div><div>0.179</div></div> <div><div>3</div><div>80.00</div><div>0.357</div><div>0.433</div><div>32.500</div><div>10.84</div><div>59.19</div><div>0.179</div></div> <div>Aktive Erddruckordinaten ([g+q]<sub>k</sub>)</div> <div><div>von</div><div>bis</div><div>oben</div><div>unten</div><div>Wasserdruck</div></div> <div><div>[mNHN]</div><div>[mNHN]</div><div>[kN/m²]</div><div>[kN/m²]</div><div>[kN/m²]</div></div> <div><div>107.450</div><div>106.950</div><div>20.610</div><div>20.610</div><div>0.00</div><div>0.00</div></div> <div><div>106.950</div><div>106.450</div><div>20.610</div><div>20.610</div><div>0.00</div><div>0.00</div></div> <div><div>106.450</div><div>105.500</div><div>20.610</div><div>20.610</div><div>0.00</div><div>0.00</div></div> <div><div>105.500</div><div>105.450</div><div>20.610</div><div>20.610</div><div>0.00</div><div>0.50</div></div> <div><div>105.450</div><div>105.000</div><div>20.610</div><div>20.610</div><div>0.50</div><div>5.00</div></div> <div><div>105.000</div><div>104.402</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div> <div><div>104.402</div><div>104.066</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div> <div><div>104.066</div><div>103.940</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div> <div><div>103.940</div><div>103.400</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div> <div><div>103.400</div><div>103.202</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div> <div><div>103.202</div><div>102.840</div><div>17.175</div><div>17.175</div><div>5.00</div><div>5.00</div></div>								Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/13	
Kapitel: 3		LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1113							
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025									

Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																									
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																													
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<table><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>36.814</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>36.814</td><td>38.455</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>38.455</td><td>42.558</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>42.558</td><td>46.662</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>80.000</td><td>46.662</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.81</td></tr><tr><td>99.45</td><td>80.00</td><td>-131.81</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>-83.4</td></tr><tr><td>106.95</td><td>-15.2</td><td>71.5</td><td>-3.0</td><td></td></tr><tr><td>106.45</td><td>-30.4</td><td>59.7</td><td>29.8</td><td></td></tr><tr><td>105.50</td><td>-59.3</td><td>37.2</td><td>75.8</td><td></td></tr><tr><td>105.45</td><td>-60.8</td><td>36.0</td><td>77.6</td><td></td></tr><tr><td>105.00</td><td>-74.5</td><td>23.8</td><td>91.2</td><td></td></tr><tr><td>104.40</td><td>-91.8</td><td>8.4</td><td>100.8</td><td></td></tr><tr><td>104.07</td><td>-101.5</td><td>-0.2</td><td>102.2</td><td></td></tr><tr><td>103.94</td><td>-105.2</td><td>-3.5</td><td>101.9</td><td></td></tr><tr><td>103.40</td><td>-119.8</td><td>-17.4</td><td>96.3</td><td></td></tr><tr><td>103.20</td><td>-125.1</td><td>-22.5</td><td>92.3</td><td></td></tr><tr><td>102.84</td><td>-134.9</td><td>-31.8</td><td>82.5</td><td></td></tr><tr><td>102.55</td><td>-143.5</td><td>-39.3</td><td>72.2</td><td></td></tr><tr><td>102.45</td><td>-146.3</td><td>-43.6</td><td>68.1</td><td></td></tr><tr><td>101.85</td><td>-152.3</td><td>-54.0</td><td>37.4</td><td></td></tr><tr><td>101.45</td><td>-150.1</td><td>-46.0</td><td>17.1</td><td></td></tr><tr><td>100.45</td><td>-132.8</td><td>0.1</td><td>-4.6</td><td></td></tr><tr><td>99.45</td><td>-132.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>								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	36.814	5.00	5.00	101.850	101.450	36.814	38.455	5.00	5.00	101.450	100.449	38.455	42.558	5.00	5.00	100.449	99.449	42.558	46.662	5.00	5.00	99.449	80.000	46.662	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	-89.29	100.45	99.45	-89.29	-131.81	99.45	80.00	-131.81	-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	-83.4	106.95	-15.2	71.5	-3.0		106.45	-30.4	59.7	29.8		105.50	-59.3	37.2	75.8		105.45	-60.8	36.0	77.6		105.00	-74.5	23.8	91.2		104.40	-91.8	8.4	100.8		104.07	-101.5	-0.2	102.2		103.94	-105.2	-3.5	101.9		103.40	-119.8	-17.4	96.3		103.20	-125.1	-22.5	92.3		102.84	-134.9	-31.8	82.5		102.55	-143.5	-39.3	72.2		102.45	-146.3	-43.6	68.1		101.85	-152.3	-54.0	37.4		101.45	-150.1	-46.0	17.1		100.45	-132.8	0.1	-4.6		99.45	-132.0	0.0	0.0	
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<div>Schnittgrößen ([g+q+w],k)</div> 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Dipl.-Ing. A. Forner



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<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>-5.6</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>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-5.5</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>-5.3</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>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-5.0</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>105.05</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-4.8</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>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-4.5</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>104.11</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>103.95</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-4.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.89</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>-3.7</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>103.20</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>102.90</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.79</td><td>-3.4</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>-3.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-3.2</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>1.09</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-3.1</td><td>1.09</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-3.1</td><td>2.20</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-3.1</td><td>2.20</td><td>6.82</td><td>10.36</td></tr><tr><td>101.90</td><td>-2.7</td><td>16.76</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-2.6</td><td>16.76</td><td>44.20</td><td>48.37</td></tr><tr><td>101.85</td><td>-2.6</td><td>18.34</td><td>48.37</td><td>48.37</td></tr><tr><td>101.80</td><td>-2.6</td><td>18.34</td><td>47.59</td><td>51.82</td></tr><tr><td>101.50</td><td>-2.3</td><td>31.05</td><td>72.55</td><td>72.55</td></tr><tr><td>101.45</td><td>-2.3</td><td>31.05</td><td>71.21</td><td>76.00</td></tr><tr><td>101.45</td><td>-2.3</td><td>33.14</td><td>76.01</td><td>76.00</td></tr><tr><td>101.40</td><td>-2.2</td><td>33.14</td><td>74.57</td><td>79.46</td></tr><tr><td>100.50</td><td>-1.5</td><td>50.00</td><td>73.28</td><td>141.64</td></tr><tr><td>100.45</td><td>-1.4</td><td>50.00</td><td>71.11</td><td>145.10</td></tr><tr><td>100.45</td><td>-1.4</td><td>50.00</td><td>71.11</td><td>145.10</td></tr><tr><td>100.40</td><td>-1.4</td><td>50.00</td><td>68.93</td><td>148.55</td></tr><tr><td>99.50</td><td>-0.6</td><td>50.00</td><td>29.90</td><td>210.74</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>27.73</td><td>214.19</td></tr></tbody></table>			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	-5.5	-	-	-	106.95	-5.5	-	-	-	106.95	-5.5	-	-	-	106.90	-5.4	-	-	-	106.50	-5.3	-	-	-	106.45	-5.3	-	-	-	106.45	-5.3	-	-	-	106.40	-5.3	-	-	-	105.55	-5.0	-	-	-	105.50	-5.0	-	-	-	105.50	-5.0	-	-	-	105.45	-5.0	-	-	-	105.45	-5.0	-	-	-	105.40	-4.9	-	-	-	105.05	-4.8	-	-	-	105.00	-4.8	-	-	-	105.00	-4.8	-	-	-	104.95	-4.7	-	-	-	104.45	-4.5	-	-	-	104.40	-4.5	-	-	-	104.40	-4.5	-	-	-	104.35	-4.4	-	-	-	104.11	-4.3	-	-	-	104.07	-4.3	-	-	-	104.07	-4.3	-	-	-	104.01	-4.2	-	-	-	103.95	-4.2	-	-	-	103.94	-4.2	-	-	-	103.94	-4.2	-	-	-	103.89	-4.2	-	-	-	103.45	-3.9	-	-	-	103.40	-3.8	-	-	-	103.40	-3.8	-	-	-	103.35	-3.8	-	-	-	103.25	-3.7	-	-	-	103.20	-3.7	-	-	-	103.20	-3.7	-	-	-	103.15	-3.7	-	-	-	102.90	-3.5	-	-	-	102.84	-3.4	-	-	-	102.84	-3.4	-	-	-	102.79	-3.4	-	-	-	102.60	-3.3	-	-	-	102.55	-3.2	0.00	0.00	0.00	102.55	-3.2	0.00	0.00	0.00	102.50	-3.2	0.00	0.00	3.45	102.50	-3.2	1.09	3.45	3.45	102.45	-3.1	1.09	3.41	6.91	102.45	-3.1	2.20	6.91	6.91	102.40	-3.1	2.20	6.82	10.36	101.90	-2.7	16.76	44.91	44.91	101.85	-2.6	16.76	44.20	48.37	101.85	-2.6	18.34	48.37	48.37	101.80	-2.6	18.34	47.59	51.82	101.50	-2.3	31.05	72.55	72.55	101.45	-2.3	31.05	71.21	76.00	101.45	-2.3	33.14	76.01	76.00	101.40	-2.2	33.14	74.57	79.46	100.50	-1.5	50.00	73.28	141.64	100.45	-1.4	50.00	71.11	145.10	100.45	-1.4	50.00	71.11	145.10	100.40	-1.4	50.00	68.93	148.55	99.50	-0.6	50.00	29.90	210.74	99.45	-0.6	50.00	27.73	214.19
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101.80	-2.6	18.34	47.59	51.82																																																																																																																																																																																																																																																																																																																																																		
101.50	-2.3	31.05	72.55	72.55																																																																																																																																																																																																																																																																																																																																																		
101.45	-2.3	31.05	71.21	76.00																																																																																																																																																																																																																																																																																																																																																		
101.45	-2.3	33.14	76.01	76.00																																																																																																																																																																																																																																																																																																																																																		
101.40	-2.2	33.14	74.57	79.46																																																																																																																																																																																																																																																																																																																																																		
100.50	-1.5	50.00	73.28	141.64																																																																																																																																																																																																																																																																																																																																																		
100.45	-1.4	50.00	71.11	145.10																																																																																																																																																																																																																																																																																																																																																		
100.45	-1.4	50.00	71.11	145.10																																																																																																																																																																																																																																																																																																																																																		
100.40	-1.4	50.00	68.93	148.55																																																																																																																																																																																																																																																																																																																																																		
99.50	-0.6	50.00	29.90	210.74																																																																																																																																																																																																																																																																																																																																																		
99.45	-0.6	50.00	27.73	214.19																																																																																																																																																																																																																																																																																																																																																		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/16																																																																																																																																																																																																																																																																																																																																																				
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1116																																																																																																																																																																																																																																																																																																																																																				
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: -0.04963035 Theoretischer Fußpunkt = 99.449 m  Einbindetiefe tg = 3.10 m Profillänge = 8.00 m  Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 151.38 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 39.87 kN/m (Eah,k = 217.56 kN/m) Bv,k = 69.32 Summe V,k = 121.93 kN/m (Druck)  Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand D = 0.88 m Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 100.33 bis 96.81 m) ==&gt; 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  Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 99.45 55.00 s3: Flussskies, -sand Mantelfläche bis 99.45 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 170.50 / 1.40 = 121.79 kN/m Rd = Rb,d + Rs1,d = 986.83 kN/m  Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 181.66 - 0.00 + 45.85 + 0.00 = 227.51 kN/m ==&gt; µ = V,d / Rd = 227.51 / 986.83 = 0.23  Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/17
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 220117
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>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: 03_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 = 8.55 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 A1 Schnitt 1R		Seite Anlage A1/18
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):	
Auftraggeber:	Stadtverwaltung Leipzig			-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus		Datum:	21.06.2024

Ausnutzungsgrad  $\mu_e = 279.257 / 283.274 = 0.986$   
Bettungslager  $B_{h,d} = 279.257 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 283.274 \text{ kN/m}$

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	106.95	0.00	1.00	-229.71	-187.41	-95.45	-8.07	6.900E+4	2.100E+7	-259.63

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]
-1.00	106.95	-5.1	0.0	-229.71	0.00	0.00
-0.90	106.95	-5.4	0.0	-229.71	0.00	0.00
-0.90	106.95	-5.4	0.0	-229.71	0.00	0.00
-0.80	106.95	-5.7	0.0	-229.71	0.00	0.00
-0.70	106.95	-6.1	0.0	-229.71	0.00	0.00
-0.60	106.95	-6.4	0.0	-229.71	0.00	0.00
-0.50	106.95	-6.7	0.0	-229.71	0.00	0.00
-0.40	106.95	-7.1	0.0	-229.71	0.00	0.00
-0.30	106.95	-7.4	0.0	-229.71	0.00	0.00
-0.20	106.95	-7.7	0.1	-229.71	0.00	0.00
-0.10	106.95	-8.1	0.1	-229.71	0.00	0.00
0.00	106.95	-8.4	0.1	-229.71	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 1\Rechtes Ufer\00\_BS 1\_LF1.1 (ohne Lasten).vrb  
eingeliesen.  
Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	106.95	-0.0044

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	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:  
(Erddruckbeiwerte für horizontales Gelände)  
Wandreibung angepasst.

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 ( $[g+q]_k$ )

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	0.00
105.450	105.394	69.758	69.758	0.50
105.394	105.000	69.758	51.151	1.06

Schnitt:	Anlage A1	Schnitt 1R	Seite Anlage A1/19
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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<table><tr><td>105.000</td><td>104.590</td><td>46.669</td><td>27.276</td><td>5.00</td><td>5.00</td></tr><tr><td>104.590</td><td>104.487</td><td>27.276</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>101.818</td><td>40.954</td><td>42.369</td><td>5.00</td><td>5.00</td></tr><tr><td>101.818</td><td>101.416</td><td>42.369</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>100.409</td><td>44.845</td><td>46.290</td><td>5.00</td><td>5.00</td></tr><tr><td>100.409</td><td>99.402</td><td>46.290</td><td>50.419</td><td>5.00</td><td>5.00</td></tr><tr><td>99.402</td><td>98.899</td><td>50.419</td><td>52.484</td><td>5.00</td><td>5.00</td></tr><tr><td>98.899</td><td>80.000</td><td>52.484</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)</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>102.79</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.42</td><td>0.00</td><td>-5.43</td></tr><tr><td>102.42</td><td>101.82</td><td>-5.43</td><td>-31.10</td></tr><tr><td>101.82</td><td>101.42</td><td>-31.10</td><td>-48.22</td></tr><tr><td>101.42</td><td>100.76</td><td>-48.22</td><td>-76.03</td></tr><tr><td>100.76</td><td>100.41</td><td>-76.03</td><td>-91.00</td></tr><tr><td>100.41</td><td>99.40</td><td>-91.00</td><td>-133.79</td></tr><tr><td>99.40</td><td>98.90</td><td>-133.79</td><td>-155.19</td></tr><tr><td>98.90</td><td>80.00</td><td>-155.19</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>-26.6</td><td>-43.3</td><td>-10.8</td><td>-229.7</td></tr><tr><td>106.95</td><td>-26.6</td><td>186.5</td><td>-10.8</td><td></td></tr><tr><td>106.45</td><td>-53.3</td><td>143.1</td><td>71.6</td><td></td></tr><tr><td>105.50</td><td>-103.9</td><td>60.8</td><td>168.5</td><td></td></tr><tr><td>105.45</td><td>-106.6</td><td>56.5</td><td>171.4</td><td></td></tr><tr><td>105.39</td><td>-109.6</td><td>51.5</td><td>174.5</td><td></td></tr><tr><td>105.00</td><td>-128.9</td><td>20.7</td><td>188.4</td><td></td></tr><tr><td>104.59</td><td>-144.5</td><td>-0.1</td><td>192.3</td><td></td></tr><tr><td>104.49</td><td>-147.8</td><td>-3.6</td><td>192.1</td><td></td></tr><tr><td>104.40</td><td>-150.4</td><td>-6.3</td><td>191.7</td><td></td></tr><tr><td>104.07</td><td>-160.9</td><td>-17.0</td><td>187.8</td><td></td></tr><tr><td>103.94</td><td>-164.8</td><td>-21.0</td><td>185.4</td><td></td></tr><tr><td>103.40</td><td>-180.3</td><td>-38.2</td><td>169.4</td><td></td></tr><tr><td>103.20</td><td>-186.0</td><td>-44.5</td><td>161.2</td><td></td></tr><tr><td>102.84</td><td>-196.4</td><td>-56.0</td><td>143.0</td><td></td></tr><tr><td>102.79</td><td>-198.0</td><td>-57.6</td><td>140.1</td><td></td></tr><tr><td>102.55</td><td>-205.6</td><td>-65.2</td><td>125.5</td><td></td></tr><tr><td>102.42</td><td>-209.0</td><td>-71.5</td><td>116.7</td><td></td></tr><tr><td>101.82</td><td>-214.3</td><td>-84.4</td><td>68.2</td><td></td></tr><tr><td>101.42</td><td>-211.5</td><td>-77.2</td><td>35.3</td><td></td></tr></table>								105.000	104.590	46.669	27.276	5.00	5.00	104.590	104.487	27.276	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	101.818	40.954	42.369	5.00	5.00	101.818	101.416	42.369	43.312	5.00	5.00	101.416	100.761	43.312	44.845	5.00	5.00	100.761	100.409	44.845	46.290	5.00	5.00	100.409	99.402	46.290	50.419	5.00	5.00	99.402	98.899	50.419	52.484	5.00	5.00	98.899	80.000	52.484	129.999	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]	102.79	102.55	0.00	0.00	102.55	102.42	0.00	-5.43	102.42	101.82	-5.43	-31.10	101.82	101.42	-31.10	-48.22	101.42	100.76	-48.22	-76.03	100.76	100.41	-76.03	-91.00	100.41	99.40	-91.00	-133.79	99.40	98.90	-133.79	-155.19	98.90	80.00	-155.19	-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	-26.6	-43.3	-10.8	-229.7	106.95	-26.6	186.5	-10.8		106.45	-53.3	143.1	71.6		105.50	-103.9	60.8	168.5		105.45	-106.6	56.5	171.4		105.39	-109.6	51.5	174.5		105.00	-128.9	20.7	188.4		104.59	-144.5	-0.1	192.3		104.49	-147.8	-3.6	192.1		104.40	-150.4	-6.3	191.7		104.07	-160.9	-17.0	187.8		103.94	-164.8	-21.0	185.4		103.40	-180.3	-38.2	169.4		103.20	-186.0	-44.5	161.2		102.84	-196.4	-56.0	143.0		102.79	-198.0	-57.6	140.1		102.55	-205.6	-65.2	125.5		102.42	-209.0	-71.5	116.7		101.82	-214.3	-84.4	68.2		101.42	-211.5	-77.2	35.3	
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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>100.76 -195.9 -39.0 -4.5</div><div>100.41 -184.5 -11.5 -13.2</div><div>99.40 -171.2 15.4 -4.7</div><div>98.90 -175.3 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>107.45 0.0 0.0 0.0</div><div>107.45 -0.1 -0.1 0.0</div><div>106.95 -22.1 -34.8 -8.7 -187.4</div><div>106.95 -22.1 152.6 -8.7</div><div>106.45 -44.3 117.7 58.9</div><div>105.50 -86.4 51.4 139.2</div><div>105.45 -88.6 47.9 141.7</div><div>105.39 -91.1 44.0 144.3</div><div>105.00 -107.2 19.0 156.5</div><div>104.59 -120.5 1.7 160.5</div><div>104.49 -123.4 -1.3 160.5</div><div>104.40 -125.7 -3.7 160.3</div><div>104.07 -134.8 -12.9 157.5</div><div>103.94 -138.2 -16.3 155.7</div><div>103.40 -151.7 -31.1 142.9</div><div>103.20 -156.6 -36.6 136.1</div><div>102.84 -165.6 -46.5 121.1</div><div>102.79 -167.1 -47.9 118.7</div><div>102.55 -173.7 -54.4 106.5</div><div>102.42 -176.7 -59.9 99.2</div><div>101.82 -181.4 -71.3 58.4</div><div>101.42 -179.1 -65.5 30.5</div><div>100.76 -165.9 -33.4 -3.4</div><div>100.41 -156.2 -10.1 -10.9</div><div>99.40 -144.8 13.0 -3.9</div><div>98.90 -148.2 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>107.45 0.0 0.0 0.0</div><div>107.45 -0.1 -0.1 0.0</div><div>106.95 -14.4 -13.4 -3.4 -95.5</div><div>106.95 -14.4 82.0 -3.4</div><div>106.45 -28.7 68.6 34.3</div><div>105.50 -56.0 43.0 87.3</div><div>105.45 -57.4 41.7 89.4</div><div>105.39 -59.1 40.1 91.7</div><div>105.00 -70.4 28.3 105.2</div><div>104.59 -81.5 17.1 114.5</div><div>104.49 -84.3 14.3 116.1</div><div>104.40 -86.6 11.9 117.2</div><div>104.07 -95.6 2.7 119.7</div><div>103.94 -99.1 -0.7 119.8</div><div>103.40 -112.5 -15.5 115.4</div><div>103.20 -117.5 -21.0 111.8</div><div>102.84 -126.5 -30.9 102.4</div><div>102.79 -127.9 -32.3 100.8</div><div>102.55 -134.6 -38.8 92.3</div><div>102.42 -137.5 -44.4 87.0</div><div>101.82 -143.3 -58.3 55.0</div><div>101.42 -142.3 -55.9 31.7</div><div>100.76 -132.2 -31.4 1.7</div><div>100.41 -124.0 -11.9 -5.8</div><div>99.40 -113.4 9.1 -2.8</div><div>98.90 -115.2 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>107.45 0.0 0.0 0.0</div><div>107.45 0.0 -0.1 0.0</div><div>106.95 -7.8 -21.4 -5.3 -92.0</div></div></div></div></div></div></div>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/21
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 1121
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>106.95</td><td>-7.8</td><td>70.6</td><td>-5.3</td></tr><tr><td>106.45</td><td>-15.6</td><td>49.1</td><td>24.6</td></tr><tr><td>105.50</td><td>-30.4</td><td>8.4</td><td>51.9</td></tr><tr><td>105.45</td><td>-31.2</td><td>6.3</td><td>52.3</td></tr><tr><td>105.39</td><td>-32.1</td><td>3.9</td><td>52.6</td></tr><tr><td>105.00</td><td>-36.9</td><td>-9.4</td><td>51.3</td></tr><tr><td>104.59</td><td>-39.1</td><td>-15.3</td><td>45.9</td></tr><tr><td>104.49</td><td>-39.2</td><td>-15.6</td><td>44.3</td></tr><tr><td>104.40</td><td>-39.2</td><td>-15.6</td><td>43.0</td></tr><tr><td>104.07</td><td>-39.2</td><td>-15.6</td><td>37.8</td></tr><tr><td>103.94</td><td>-39.2</td><td>-15.6</td><td>35.8</td></tr><tr><td>103.40</td><td>-39.2</td><td>-15.6</td><td>27.4</td></tr><tr><td>103.20</td><td>-39.2</td><td>-15.6</td><td>24.3</td></tr><tr><td>102.84</td><td>-39.2</td><td>-15.6</td><td>18.7</td></tr><tr><td>102.79</td><td>-39.2</td><td>-15.6</td><td>17.9</td></tr><tr><td>102.55</td><td>-39.2</td><td>-15.6</td><td>14.2</td></tr><tr><td>102.42</td><td>-39.1</td><td>-15.5</td><td>12.2</td></tr><tr><td>101.82</td><td>-38.1</td><td>-13.0</td><td>3.4</td></tr><tr><td>101.42</td><td>-36.8</td><td>-9.6</td><td>-1.2</td></tr><tr><td>100.76</td><td>-33.8</td><td>-2.0</td><td>-5.1</td></tr><tr><td>100.41</td><td>-32.2</td><td>1.8</td><td>-5.1</td></tr><tr><td>99.40</td><td>-31.4</td><td>3.9</td><td>-1.1</td></tr><tr><td>98.90</td><td>-33.0</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>-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>105.39</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>105.34</td><td>-6.8</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>104.64</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.59</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.59</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><tr><td>104.54</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.49</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.49</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>104.45</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>104.11</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.01</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.95</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr></table>						106.95	-7.8	70.6	-5.3	106.45	-15.6	49.1	24.6	105.50	-30.4	8.4	51.9	105.45	-31.2	6.3	52.3	105.39	-32.1	3.9	52.6	105.00	-36.9	-9.4	51.3	104.59	-39.1	-15.3	45.9	104.49	-39.2	-15.6	44.3	104.40	-39.2	-15.6	43.0	104.07	-39.2	-15.6	37.8	103.94	-39.2	-15.6	35.8	103.40	-39.2	-15.6	27.4	103.20	-39.2	-15.6	24.3	102.84	-39.2	-15.6	18.7	102.79	-39.2	-15.6	17.9	102.55	-39.2	-15.6	14.2	102.42	-39.1	-15.5	12.2	101.82	-38.1	-13.0	3.4	101.42	-36.8	-9.6	-1.2	100.76	-33.8	-2.0	-5.1	100.41	-32.2	1.8	-5.1	99.40	-31.4	3.9	-1.1	98.90	-33.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-7.2	-	-	-	107.45	-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	-	-	-	105.39	-6.8	-	-	-	105.39	-6.8	-	-	-	105.34	-6.8	-	-	-	105.05	-6.6	-	-	-	105.00	-6.6	-	-	-	105.00	-6.6	-	-	-	104.95	-6.6	-	-	-	104.64	-6.4	-	-	-	104.59	-6.4	-	-	-	104.59	-6.4	-	-	-	104.54	-6.4	-	-	-	104.54	-6.4	-	-	-	104.49	-6.3	-	-	-	104.49	-6.3	-	-	-	104.45	-6.3	-	-	-	104.45	-6.3	-	-	-	104.40	-6.3	-	-	-	104.40	-6.3	-	-	-	104.35	-6.3	-	-	-	104.11	-6.1	-	-	-	104.07	-6.1	-	-	-	104.07	-6.1	-	-	-	104.01	-6.0	-	-	-	103.95	-6.0	-	-	-	103.94	-6.0	-	-	-	103.94	-6.0	-	-	-
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																	
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<table><tr><td>103.89</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-5.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.90</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-5.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.79</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.79</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.74</td><td>-4.9</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>-4.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.51</td><td>-4.6</td><td>0.00</td><td>0.00</td><td>2.94</td></tr><tr><td>102.46</td><td>-4.6</td><td>1.28</td><td>5.88</td><td>5.88</td></tr><tr><td>102.42</td><td>-4.5</td><td>1.28</td><td>5.82</td><td>8.82</td></tr><tr><td>102.42</td><td>-4.5</td><td>1.95</td><td>8.82</td><td>8.82</td></tr><tr><td>102.37</td><td>-4.5</td><td>1.95</td><td>8.71</td><td>12.30</td></tr><tr><td>101.87</td><td>-3.9</td><td>12.06</td><td>47.07</td><td>47.06</td></tr><tr><td>101.82</td><td>-3.8</td><td>12.06</td><td>46.35</td><td>50.54</td></tr><tr><td>101.82</td><td>-3.8</td><td>13.15</td><td>50.54</td><td>50.54</td></tr><tr><td>101.77</td><td>-3.8</td><td>13.15</td><td>49.76</td><td>54.02</td></tr><tr><td>101.47</td><td>-3.4</td><td>21.87</td><td>74.88</td><td>74.88</td></tr><tr><td>101.42</td><td>-3.4</td><td>21.87</td><td>73.55</td><td>78.35</td></tr><tr><td>101.42</td><td>-3.4</td><td>23.30</td><td>78.35</td><td>78.35</td></tr><tr><td>101.37</td><td>-3.3</td><td>23.30</td><td>76.93</td><td>81.83</td></tr><tr><td>100.81</td><td>-2.6</td><td>45.72</td><td>120.07</td><td>120.07</td></tr><tr><td>100.76</td><td>-2.6</td><td>45.72</td><td>117.26</td><td>123.55</td></tr><tr><td>100.76</td><td>-2.6</td><td>48.17</td><td>123.55</td><td>123.55</td></tr><tr><td>100.71</td><td>-2.5</td><td>48.17</td><td>120.59</td><td>127.02</td></tr><tr><td>100.46</td><td>-2.2</td><td>50.00</td><td>109.79</td><td>144.41</td></tr><tr><td>100.41</td><td>-2.1</td><td>50.00</td><td>106.72</td><td>147.88</td></tr><tr><td>100.41</td><td>-2.1</td><td>50.00</td><td>106.72</td><td>147.88</td></tr><tr><td>100.36</td><td>-2.1</td><td>50.00</td><td>103.66</td><td>151.36</td></tr><tr><td>99.45</td><td>-1.0</td><td>50.00</td><td>48.87</td><td>213.94</td></tr><tr><td>99.40</td><td>-0.9</td><td>50.00</td><td>45.84</td><td>217.41</td></tr><tr><td>99.40</td><td>-0.9</td><td>50.00</td><td>45.84</td><td>217.41</td></tr><tr><td>99.35</td><td>-0.9</td><td>50.00</td><td>42.82</td><td>220.89</td></tr><tr><td>98.95</td><td>-0.4</td><td>50.00</td><td>18.62</td><td>248.70</td></tr><tr><td>98.90</td><td>-0.3</td><td>50.00</td><td>15.60</td><td>252.18</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06883333 Theoretischer Fußpunkt = 98.899 m</p> <p>Einbindetiefe tg = 3.65 m Profillänge = 8.55 m</p>			103.89	-5.9	-	-	-	103.45	-5.6	-	-	-	103.40	-5.5	-	-	-	103.40	-5.5	-	-	-	103.35	-5.5	-	-	-	103.25	-5.4	-	-	-	103.20	-5.3	-	-	-	103.20	-5.3	-	-	-	103.15	-5.3	-	-	-	102.90	-5.0	-	-	-	102.84	-5.0	-	-	-	102.84	-5.0	-	-	-	102.79	-4.9	-	-	-	102.79	-4.9	-	-	-	102.74	-4.9	-	-	-	102.60	-4.7	-	-	-	102.55	-4.7	0.00	0.00	0.00	102.55	-4.7	0.00	0.00	0.00	102.51	-4.6	0.00	0.00	2.94	102.46	-4.6	1.28	5.88	5.88	102.42	-4.5	1.28	5.82	8.82	102.42	-4.5	1.95	8.82	8.82	102.37	-4.5	1.95	8.71	12.30	101.87	-3.9	12.06	47.07	47.06	101.82	-3.8	12.06	46.35	50.54	101.82	-3.8	13.15	50.54	50.54	101.77	-3.8	13.15	49.76	54.02	101.47	-3.4	21.87	74.88	74.88	101.42	-3.4	21.87	73.55	78.35	101.42	-3.4	23.30	78.35	78.35	101.37	-3.3	23.30	76.93	81.83	100.81	-2.6	45.72	120.07	120.07	100.76	-2.6	45.72	117.26	123.55	100.76	-2.6	48.17	123.55	123.55	100.71	-2.5	48.17	120.59	127.02	100.46	-2.2	50.00	109.79	144.41	100.41	-2.1	50.00	106.72	147.88	100.41	-2.1	50.00	106.72	147.88	100.36	-2.1	50.00	103.66	151.36	99.45	-1.0	50.00	48.87	213.94	99.40	-0.9	50.00	45.84	217.41	99.40	-0.9	50.00	45.84	217.41	99.35	-0.9	50.00	42.82	220.89	98.95	-0.4	50.00	18.62	248.70	98.90	-0.3	50.00	15.60	252.18
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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
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 161.79 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 72.52 \text{ kN/m}</math> (<math>E_{ah,k} = 395.42 \text{ kN/m}</math>) <math>B_{v,k} = 95.31</math> Summe <math>V_{,k} = 139.01 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 99.78 bis 96.26 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 98.90 55.00 s3: Flussskies, -sand Mantelfläche bis 98.90 m = 1.000 <math>\text{m}^2/\text{m}/\text{m} \Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 200.75 / 1.40 = 143.39 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 1008.44 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 194.15 - 0.00 + 86.34 + 0.00 = 280.49 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 280.49 / 1008.44 = 0.28</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/24
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>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: 04_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 = 9.00 m</div>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/25
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  $\mu_e = 5.273 / 10.208 = 0.517$   
Bettungslager  $B_{h,d} = 5.273 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 10.208 \text{ kN/m}$

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	-683.63	-557.27	-285.63	-52.22	3.900E+7	2.100E+7	-771.64 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	-4.6	0.0	-684.22	0.00	0.00
-7.47	103.72	-4.6	0.0	-684.22	0.00	0.00
-7.47	103.72	-4.6	0.0	-684.22	0.00	0.00
-6.64	103.72	-4.6	0.0	-684.22	0.00	0.00
-5.81	103.72	-4.6	0.0	-684.22	0.00	0.00
-4.98	103.72	-4.7	0.0	-684.22	0.00	0.00
-4.15	103.72	-4.7	0.0	-684.22	0.00	0.00
-3.32	103.72	-4.7	0.0	-684.22	0.00	0.00
-2.49	103.72	-4.7	0.0	-684.22	0.00	0.00
-1.66	103.72	-4.7	0.1	-684.22	0.00	0.00
-0.83	103.72	-4.7	0.1	-684.22	0.00	0.00
0.00	103.72	-4.7	0.1	-684.22	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0040

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	0.00
109.018	109.014	39.614	46.806	0.00	0.00
109.014	108.020	46.806	54.166	0.00	0.00
108.020	107.450	54.166	58.386	0.00	0.00

Schnitt:	Anlage A1	Schnitt 1R	Seite Anlage A1/26
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):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
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	102.004	37.508	39.747	0.00	0.00
102.004	101.309	39.747	42.597	0.00	0.00
101.309	101.011	42.597	43.819	0.00	0.00
101.011	100.019	43.819	47.890	0.00	0.00
100.019	80.000	47.890	129.999	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 0.00 109.02 102.55					
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	102.00	0.00	-23.20		
102.00	101.31	-23.20	-52.74		
101.31	101.01	-52.74	-65.39		
101.01	100.02	-65.39	-107.58		
100.02	80.00	-107.58	-958.43		
Schnittgrößen (Bemessungswerte)					
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	-684.2	
103.72	-274.2	386.3	-882.7		
102.98	-301.3	326.7	-616.5		
102.84	-306.3	314.9	-573.2		
102.55	-317.5	292.8	-485.1		
102.00	-328.0	273.8	-330.5		
101.31	-337.7	218.7	-156.7		
101.01	-335.7	181.2	-97.0		
100.02	-306.1	0.0	0.0		
Schnitt: Anlage A1 Schnitt 1R				Seite Anlage A1/27	
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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<div>Schnittgrößen ([g+q+w],k)<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>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.02</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.01</td><td>-0.2</td><td>-0.2</td><td>0.0</td><td></td><td></td></tr><tr><td>108.02</td><td>-37.3</td><td>-50.4</td><td>-24.5</td><td></td><td></td></tr><tr><td>107.45</td><td>-59.7</td><td>-82.5</td><td>-62.3</td><td></td><td></td></tr><tr><td>107.45</td><td>-108.4</td><td>-82.5</td><td>-93.5</td><td></td><td></td></tr><tr><td>107.02</td><td>-126.0</td><td>-108.3</td><td>-134.4</td><td></td><td></td></tr><tr><td>106.96</td><td>-128.3</td><td>-111.7</td><td>-140.7</td><td></td><td></td></tr><tr><td>106.06</td><td>-160.0</td><td>-151.6</td><td>-262.5</td><td></td><td></td></tr><tr><td>106.02</td><td>-161.0</td><td>-152.5</td><td>-268.1</td><td></td><td></td></tr><tr><td>105.50</td><td>-176.2</td><td>-167.1</td><td>-351.1</td><td></td><td></td></tr><tr><td>104.97</td><td>-192.2</td><td>-184.9</td><td>-444.2</td><td></td><td></td></tr><tr><td>103.98</td><td>-223.1</td><td>-228.7</td><td>-647.8</td><td></td><td></td></tr><tr><td>103.94</td><td>-224.4</td><td>-230.7</td><td>-657.0</td><td></td><td></td></tr><tr><td>103.72</td><td>-231.2</td><td>-244.3</td><td>-709.3</td><td>-557.3</td><td></td></tr><tr><td>103.72</td><td>-231.2</td><td>312.9</td><td>-709.3</td><td></td><td></td></tr><tr><td>102.98</td><td>-254.8</td><td>261.8</td><td>-494.7</td><td></td><td></td></tr><tr><td>102.84</td><td>-259.1</td><td>251.7</td><td>-460.0</td><td></td><td></td></tr><tr><td>102.55</td><td>-268.8</td><td>232.8</td><td>-389.8</td><td></td><td></td></tr><tr><td>102.00</td><td>-277.2</td><td>218.5</td><td>-266.9</td><td></td><td></td></tr><tr><td>101.31</td><td>-284.7</td><td>176.7</td><td>-127.3</td><td></td><td></td></tr><tr><td>101.01</td><td>-283.6</td><td>147.0</td><td>-78.9</td><td></td><td></td></tr><tr><td>100.02</td><td>-262.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table></div> <div>Schnittgrößen (g+w,k)<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>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.02</td><td>-21.7</td><td>-7.6</td><td>-3.2</td><td></td><td></td></tr><tr><td>107.45</td><td>-35.3</td><td>-15.2</td><td>-9.6</td><td></td><td></td></tr><tr><td>107.45</td><td>-84.0</td><td>-15.2</td><td>-40.8</td><td></td><td></td></tr><tr><td>107.02</td><td>-94.8</td><td>-22.6</td><td>-48.8</td><td></td><td></td></tr><tr><td>106.96</td><td>-96.2</td><td>-23.7</td><td>-50.1</td><td></td><td></td></tr><tr><td>106.06</td><td>-120.8</td><td>-44.0</td><td>-80.4</td><td></td><td></td></tr><tr><td>106.02</td><td>-121.9</td><td>-45.0</td><td>-82.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-137.0</td><td>-59.6</td><td>-109.1</td><td></td><td></td></tr><tr><td>104.97</td><td>-153.0</td><td>-77.4</td><td>-145.2</td><td></td><td></td></tr><tr><td>103.98</td><td>-184.0</td><td>-121.2</td><td>-242.4</td><td></td><td></td></tr><tr><td>103.94</td><td>-185.3</td><td>-123.2</td><td>-247.3</td><td></td><td></td></tr><tr><td>103.72</td><td>-192.1</td><td>-136.8</td><td>-275.9</td><td>-285.6</td><td></td></tr><tr><td>103.72</td><td>-192.1</td><td>148.8</td><td>-275.9</td><td></td><td></td></tr><tr><td>102.98</td><td>-215.6</td><td>97.7</td><td>-183.6</td><td></td><td></td></tr><tr><td>102.84</td><td>-219.9</td><td>87.5</td><td>-171.1</td><td></td><td></td></tr><tr><td>102.55</td><td>-229.7</td><td>68.7</td><td>-148.4</td><td></td><td></td></tr><tr><td>102.00</td><td>-231.5</td><td>70.9</td><td>-112.6</td><td></td><td></td></tr><tr><td>101.31</td><td>-231.5</td><td>75.2</td><td>-59.9</td><td></td><td></td></tr><tr><td>101.01</td><td>-235.2</td><td>67.3</td><td>-38.5</td><td></td><td></td></tr><tr><td>100.02</td><td>-244.9</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table></div> <div>Schnittgrößen (q,k)<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>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.02</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>-0.2</td><td>0.0</td><td></td><td></td></tr><tr><td>108.02</td><td>-15.6</td><td>-42.8</td><td>-21.4</td><td></td><td></td></tr><tr><td>107.45</td><td>-24.5</td><td>-67.2</td><td>-52.7</td><td></td><td></td></tr><tr><td>107.02</td><td>-31.2</td><td>-85.7</td><td>-85.6</td><td></td><td></td></tr><tr><td>106.96</td><td>-32.1</td><td>-88.1</td><td>-90.5</td><td></td><td></td></tr><tr><td>106.06</td><td>-39.2</td><td>-107.5</td><td>-182.1</td><td></td><td></td></tr><tr><td>106.02</td><td>-39.2</td><td>-107.5</td><td>-186.1</td><td></td><td></td></tr><tr><td>105.50</td><td>-39.2</td><td>-107.5</td><td>-242.0</td><td></td><td></td></tr><tr><td>104.97</td><td>-39.2</td><td>-107.5</td><td>-299.0</td><td></td><td></td></tr><tr><td>103.98</td><td>-39.2</td><td>-107.5</td><td>-405.4</td><td></td><td></td></tr><tr><td>103.94</td><td>-39.2</td><td>-107.5</td><td>-409.7</td><td></td><td></td></tr><tr><td>103.72</td><td>-39.2</td><td>-107.5</td><td>-433.4</td><td>-283.5</td><td></td></tr></table></div>			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	0.0	0.0			109.01	-0.2	-0.2	0.0			108.02	-37.3	-50.4	-24.5			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			104.97	-192.2	-184.9	-444.2			103.98	-223.1	-228.7	-647.8			103.94	-224.4	-230.7	-657.0			103.72	-231.2	-244.3	-709.3	-557.3		103.72	-231.2	312.9	-709.3			102.98	-254.8	261.8	-494.7			102.84	-259.1	251.7	-460.0			102.55	-268.8	232.8	-389.8			102.00	-277.2	218.5	-266.9			101.31	-284.7	176.7	-127.3			101.01	-283.6	147.0	-78.9			100.02	-262.1	0.0	0.0			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	0.0	0.0	0.0			109.01	-0.1	0.0	0.0			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			104.97	-153.0	-77.4	-145.2			103.98	-184.0	-121.2	-242.4			103.94	-185.3	-123.2	-247.3			103.72	-192.1	-136.8	-275.9	-285.6		103.72	-192.1	148.8	-275.9			102.98	-215.6	97.7	-183.6			102.84	-219.9	87.5	-171.1			102.55	-229.7	68.7	-148.4			102.00	-231.5	70.9	-112.6			101.31	-231.5	75.2	-59.9			101.01	-235.2	67.3	-38.5			100.02	-244.9	0.0	0.0			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	0.0	0.0	0.0			109.01	-0.1	-0.2	0.0			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			104.97	-39.2	-107.5	-299.0			103.98	-39.2	-107.5	-405.4			103.94	-39.2	-107.5	-409.7			103.72	-39.2	-107.5	-433.4	-283.5	
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106.02	-161.0	-152.5	-268.1																																																																																																																																																																																																																																																																																																																																																																																																											
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104.97	-192.2	-184.9	-444.2																																																																																																																																																																																																																																																																																																																																																																																																											
103.98	-223.1	-228.7	-647.8																																																																																																																																																																																																																																																																																																																																																																																																											
103.94	-224.4	-230.7	-657.0																																																																																																																																																																																																																																																																																																																																																																																																											
103.72	-231.2	-244.3	-709.3	-557.3																																																																																																																																																																																																																																																																																																																																																																																																										
103.72	-231.2	312.9	-709.3																																																																																																																																																																																																																																																																																																																																																																																																											
102.98	-254.8	261.8	-494.7																																																																																																																																																																																																																																																																																																																																																																																																											
102.84	-259.1	251.7	-460.0																																																																																																																																																																																																																																																																																																																																																																																																											
102.55	-268.8	232.8	-389.8																																																																																																																																																																																																																																																																																																																																																																																																											
102.00	-277.2	218.5	-266.9																																																																																																																																																																																																																																																																																																																																																																																																											
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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> 103.72   -39.2   164.1   -433.4  102.98   -39.2   164.1   -311.1  102.84   -39.2   164.1   -289.0  102.55   -39.2   164.1   -241.4  102.00   -45.7   147.6   -154.4  101.31   -53.2   101.5   -67.4  101.01   -48.4   79.7   -40.4  100.02   -17.1   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> 109.02   -29.5   -   -   -  109.02   -29.5   -   -   -  109.02   -29.5   -   -   -  109.01   -29.5   -   -   -  109.01   -29.5   -   -   -  108.96   -29.2   -   -   -  108.07   -24.4   -   -   -  108.02   -24.1   -   -   -  108.02   -24.1   -   -   -  107.97   -23.9   -   -   -  107.52   -21.4   -   -   -  107.45   -21.1   -   -   -  107.45   -21.1   -   -   -  107.40   -20.8   -   -   -  107.07   -19.0   -   -   -  107.02   -18.8   -   -   -  107.02   -18.8   -   -   -  106.96   -18.5   -   -   -  106.96   -18.5   -   -   -  106.91   -18.2   -   -   -  106.11   -14.1   -   -   -  106.06   -13.9   -   -   -  106.06   -13.9   -   -   -  106.02   -13.7   -   -   -  106.02   -13.7   -   -   -  105.97   -13.4   -   -   -  105.52   -11.3   -   -   -  105.50   -11.2   -   -   -  105.50   -11.2   -   -   -  105.45   -11.0   -   -   -  105.02   -9.0   -   -   -  104.97   -8.8   -   -   -  104.97   -8.8   -   -   -  104.92   -8.6   -   -   -  104.02   -5.1   -   -   -  103.98   -5.0   -   -   -  103.98   -5.0   -   -   -  103.94   -4.8   -   -   -  103.94   -4.8   -   -   -  103.89   -4.6   -   -   -  103.78   -4.3   -   -   -  103.72   -4.1   -   -   -  103.72   -4.1   -   -   -  103.67   -4.0   -   -   -  103.02   -2.2   -   -   -  102.98   -2.1   -   -   -  102.98   -2.1   -   -   -  102.93   -2.0   -   -   -  102.89   -1.9   -   -   -  102.84   -1.8   -   -   -  102.84   -1.8   -   -   -  102.79   -1.7   -   -   -  102.60   -1.3   -   -   -  102.55   -1.2   0.00   0.00   0.00  102.55   -1.2   0.00   0.00   0.00  102.50   -1.1   0.00   0.00   3.43  102.05   -0.3   50.00   13.43   34.28  102.00   -0.2   50.00   9.15   37.71 </div>		
Schnitt:	Anlage A1   Schnitt 1R	Seite Anlage A1/29
Kapitel:	5   LF 3 (BS-T, mit Lasten)	Archiv Nr.: 1129
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>102.00</td><td>-0.2</td><td>50.00</td><td>9.15</td><td>37.71</td></tr><tr><td>101.95</td><td>-0.1</td><td>50.00</td><td>4.94</td><td>41.13</td></tr><tr><td>101.36</td><td>0.8</td><td>50.00</td><td>-42.10</td><td>82.27</td></tr><tr><td>101.31</td><td>0.9</td><td>50.00</td><td>-45.79</td><td>85.70</td></tr><tr><td>101.31</td><td>0.9</td><td>50.00</td><td>-45.79</td><td>85.70</td></tr><tr><td>101.26</td><td>1.0</td><td>50.00</td><td>-49.45</td><td>89.13</td></tr><tr><td>101.06</td><td>1.3</td><td>50.00</td><td>-63.86</td><td>102.84</td></tr><tr><td>101.01</td><td>1.3</td><td>50.00</td><td>-67.42</td><td>106.27</td></tr><tr><td>101.01</td><td>1.3</td><td>50.00</td><td>-67.42</td><td>106.27</td></tr><tr><td>100.96</td><td>1.4</td><td>50.00</td><td>-70.95</td><td>109.69</td></tr><tr><td>100.07</td><td>2.7</td><td>50.00</td><td>-133.19</td><td>171.40</td></tr><tr><td>100.02</td><td>2.7</td><td>50.00</td><td>-136.62</td><td>174.82</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.07921198 Theoretischer Fußpunkt = 100.019 m</p> <p>Einbindetiefe tg = 2.53 m Profillänge = 9.00 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_{k} = 170.31 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 48.70 \text{ kN/m}</math> <math>E_{av,k} = 70.33 \text{ kN/m}</math> (<math>E_{ah,k} = 389.02 \text{ kN/m}</math>) <math>B_{v,k} = 2.89</math> Summe <math>V_{k} = 286.45 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.90 bis 97.38 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 100.02 55.00 s3: Flussskies, -sand Mantelfläche bis 100.02 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 139.15 / 1.40 = 99.39 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 964.44 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 204.37 - 0.00 + 83.82 + 58.44 = 346.63 \text{ kN/m}</math> <math>\implies \mu = V_{d} / R_{d} = 346.63 / 964.44 = 0.36</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.00	-0.2	50.00	9.15	37.71	101.95	-0.1	50.00	4.94	41.13	101.36	0.8	50.00	-42.10	82.27	101.31	0.9	50.00	-45.79	85.70	101.31	0.9	50.00	-45.79	85.70	101.26	1.0	50.00	-49.45	89.13	101.06	1.3	50.00	-63.86	102.84	101.01	1.3	50.00	-67.42	106.27	101.01	1.3	50.00	-67.42	106.27	100.96	1.4	50.00	-70.95	109.69	100.07	2.7	50.00	-133.19	171.40	100.02	2.7	50.00	-136.62	174.82
102.00	-0.2	50.00	9.15	37.71																																																										
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Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/30																																																												
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1130																																																												
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 1 Datei: 05_BS 1_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 = 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 = 9.00 m</div>		
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/01
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1101
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  $\mu_e = 77.179 / 82.623 = 0.934$   
Bettungslager  $B_{h,d} = 77.179 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 82.623 \text{ kN/m}$

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	-340.56	-264.72	-264.72	-52.11	3.900E+7	2.100E+7	-337.52 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	-5.1	0.0	-341.43	0.00	0.00
-7.47	103.72	-5.1	0.0	-341.43	0.00	0.00
-7.47	103.72	-5.1	0.0	-341.43	0.00	0.00
-6.64	103.72	-5.1	0.0	-341.43	0.00	0.00
-5.81	103.72	-5.1	0.0	-341.43	0.00	0.00
-4.98	103.72	-5.1	0.0	-341.43	0.00	0.00
-4.15	103.72	-5.1	0.0	-341.43	0.00	0.00
-3.32	103.72	-5.1	0.0	-341.43	0.00	0.00
-2.49	103.72	-5.2	0.0	-341.43	0.00	0.00
-1.66	103.72	-5.2	0.0	-341.43	0.00	0.00
-0.83	103.72	-5.2	0.1	-341.43	0.00	0.00
0.00	103.72	-5.2	0.1	-341.43	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0040

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	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 A1	Schnitt 1R	Seite Anlage A1/32
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):																																																																																																																																																																																																																																																																																																							
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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>102.004</td><td>35.725</td><td>37.964</td><td>0.00</td><td>0.00</td></tr><tr><td>102.004</td><td>101.011</td><td>37.964</td><td>42.035</td><td>0.00</td><td>0.00</td></tr><tr><td>101.011</td><td>100.019</td><td>42.035</td><td>46.107</td><td>0.00</td><td>0.00</td></tr><tr><td>100.019</td><td>80.000</td><td>46.107</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>-32.87</td></tr><tr><td>102.00</td><td>101.01</td><td>-32.87</td><td>-72.05</td></tr><tr><td>101.01</td><td>100.02</td><td>-72.05</td><td>-111.22</td></tr><tr><td>100.02</td><td>80.00</td><td>-111.22</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>-341.4</td></tr><tr><td>103.72</td><td>-243.8</td><td>179.1</td><td>-319.9</td><td></td></tr><tr><td>102.98</td><td>-273.1</td><td>115.1</td><td>-209.7</td><td></td></tr><tr><td>102.84</td><td>-278.5</td><td>102.3</td><td>-195.0</td><td></td></tr><tr><td>102.55</td><td>-290.7</td><td>78.4</td><td>-168.8</td><td></td></tr><tr><td>102.00</td><td>-294.5</td><td>76.7</td><td>-127.8</td><td></td></tr><tr><td>101.01</td><td>-297.7</td><td>77.7</td><td>-45.1</td><td></td></tr><tr><td>100.02</td><td>-311.6</td><td>0.0</td><td>0.0</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></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>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr><tr><td>107.45</td><td>-34.1</td><td>-12.2</td><td>-7.2</td><td></td></tr><tr><td>107.45</td><td>-82.8</td><td>-12.2</td><td>-38.4</td><td></td></tr><tr><td>107.02</td><td>-93.4</td><td>-18.7</td><td>-45.0</td><td></td></tr><tr><td>105.97</td><td>-121.1</td><td>-40.4</td><td>-75.2</td><td></td></tr><tr><td>105.50</td><td>-134.5</td><td>-52.7</td><td>-97.1</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	102.004	35.725	37.964	0.00	0.00	102.004	101.011	37.964	42.035	0.00	0.00	101.011	100.019	42.035	46.107	0.00	0.00	100.019	80.000	46.107	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	-32.87	102.00	101.01	-32.87	-72.05	101.01	100.02	-72.05	-111.22	100.02	80.00	-111.22	-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	-341.4	103.72	-243.8	179.1	-319.9		102.98	-273.1	115.1	-209.7		102.84	-278.5	102.3	-195.0		102.55	-290.7	78.4	-168.8		102.00	-294.5	76.7	-127.8		101.01	-297.7	77.7	-45.1		100.02	-311.6	0.0	0.0		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	-21.0	-5.6	-2.2		107.45	-34.1	-12.2	-7.2		107.45	-82.8	-12.2	-38.4		107.02	-93.4	-18.7	-45.0		105.97	-121.1	-40.4	-75.2		105.50	-134.5	-52.7	-97.1	
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Dipl.-Ing. A. Forner



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<div><div><div>104.97 -150.1 -69.5 -129.3</div><div>103.98 -180.4 -111.3 -217.7</div><div>103.94 -181.7 -113.3 -222.2</div><div>103.72 -188.3 -126.4 -248.5 -264.7</div><div>103.72 -188.3 138.4 -248.5</div><div>102.98 -211.4 89.1 -163.3</div><div>102.84 -215.6 79.3 -152.0</div><div>102.55 -225.1 61.0 -131.6</div><div>102.00 -228.4 59.7 -99.8</div><div>101.01 -231.0 60.7 -35.3</div><div>100.02 -242.1 0.0 0.0</div></div><div><div>Schnittgrößen (g+w,k)</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></td><td>[kN/m]</td><td>[kN·m/m] 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([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</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>109.02</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.02</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.02</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.01</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>109.01</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.96</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.07</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.02</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.02</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.97</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.52</td><td>-12.5</td><td>-</td><td>-</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]	109.02	0.0	0.0	0.0		109.01	-0.1	0.0	0.0		108.02	-21.0	-5.6	-2.2		107.45	-34.1	-12.2	-7.2		107.45	-82.8	-12.2	-38.4		107.02	-93.4	-18.7	-45.0		105.97	-121.1	-40.4	-75.2		105.50	-134.5	-52.7	-97.1		104.97	-150.1	-69.5	-129.3		103.98	-180.4	-111.3	-217.7		103.94	-181.7	-113.3	-222.2		103.72	-188.3	-126.4	-248.5	-264.7	103.72	-188.3	138.4	-248.5		102.98	-211.4	89.1	-163.3		102.84	-215.6	79.3	-152.0		102.55	-225.1	61.0	-131.6		102.00	-228.4	59.7	-99.8		101.01	-231.0	60.7	-35.3		100.02	-242.1	0.0	0.0		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	0.0	0.0	0.0		108.02	0.0	0.0	0.0		107.45	0.0	0.0	0.0		107.02	0.0	0.0	0.0		105.97	0.0	0.0	0.0		105.50	0.0	0.0	0.0		104.97	0.0	0.0	0.0		103.98	0.0	0.0	0.0		103.94	0.0	0.0	0.0		103.72	0.0	0.0	0.0	-11.7	102.98	0.0	0.0	0.0		102.84	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.00	0.0	0.0	0.0		101.01	0.0	0.0	0.0		100.02	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	109.02	-16.2	-	-	-	109.02	-16.2	-	-	-	109.02	-16.2	-	-	-	109.01	-16.2	-	-	-	109.01	-16.2	-	-	-	108.96	-16.1	-	-	-	108.07	-13.9	-	-	-	108.02	-13.8	-	-	-	108.02	-13.8	-	-	-	107.97	-13.6	-	-	-	107.52	-12.5	-	-	-
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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>107.45</div> <div>-12.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.45</div> <div>-12.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.40</div> <div>-12.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.07</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.02</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.02</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.97</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.02</div> <div>-8.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.97</div> <div>-8.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.97</div> <div>-8.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.92</div> <div>-8.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.52</div> <div>-7.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-7.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.45</div> <div>-7.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.02</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.97</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.97</div> <div>-6.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.92</div> <div>-6.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.02</div> <div>-4.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.98</div> <div>-4.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.98</div> <div>-4.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.94</div> <div>-4.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.94</div> <div>-4.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.89</div> <div>-4.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.78</div> <div>-4.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.72</div> <div>-4.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.72</div> <div>-4.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.67</div> <div>-4.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.02</div> <div>-2.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-2.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-2.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.93</div> <div>-2.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.89</div> <div>-2.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.84</div> <div>-2.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.84</div> <div>-2.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.79</div> <div>-2.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-2.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-2.2</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-2.2</div> <div>0.00</div> <div>0.00</div> <div>19.82</div> </div> <div> <div>102.50</div> <div>-2.1</div> <div>0.00</div> <div>0.00</div> <div>23.25</div> </div> <div> <div>102.05</div> <div>-1.5</div> <div>35.17</div> <div>54.10</div> <div>54.10</div> </div> <div> <div>102.00</div> <div>-1.5</div> <div>35.17</div> <div>51.81</div> <div>57.53</div> </div> <div> <div>102.00</div> <div>-1.5</div> <div>39.04</div> <div>57.53</div> <div>57.53</div> </div> <div> <div>101.95</div> <div>-1.4</div> <div>39.04</div> <div>55.00</div> <div>60.95</div> </div> <div> <div>101.06</div> <div>-0.3</div> <div>50.00</div> <div>15.12</div> <div>122.66</div> </div> <div> <div>101.01</div> <div>-0.2</div> <div>50.00</div> <div>12.16</div> <div>126.08</div> </div> <div> <div>101.01</div> <div>-0.2</div> <div>50.00</div> <div>12.16</div> <div>126.08</div> </div> <div> <div>100.96</div> <div>-0.2</div> <div>50.00</div> <div>9.21</div> <div>129.51</div> </div> <div> <div>100.07</div> <div>0.9</div> <div>50.00</div> <div>-43.28</div> <div>191.21</div> </div> <div> <div>100.02</div> <div>0.9</div> <div>50.00</div> <div>-46.19</div> <div>194.64</div> </div> </div> <div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.06704399</div> <div>Theoretischer Fußpunkt = 100.019 m</div> <div>Einbindetiefe tg = 2.53 m</div> <div>Profillänge = 9.00 m</div> </div>		
Schnitt:	Anlage A1 Schnitt 1R	Seite Anlage A1/35
Kapitel:	6 LF 4 (BS-P, mit Lasten)	Archiv Nr.: 11035
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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 170.31 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 48.70 \text{ kN/m}</math> <math>E_{av,k} = 47.58 \text{ kN/m}</math> (<math>E_{ah,k} = 263.83 \text{ kN/m}</math>) <math>B_{v,k} = 24.18</math> Summe <math>V_{,k} = 242.41 \text{ kN/m}</math> (Druck)  Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.90 bis 97.38 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math>  Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>102.55</td><td>100.02</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> Mantelfläche bis 100.02 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 139.15 / 1.40 = 99.39 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 964.44 \text{ kN/m}</math>  Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 229.91 - 0.00 + 60.67 + 65.75 = 356.33 \text{ kN/m}</math> <math>\implies \mu = V_{,d} / R_{,d} = 356.33 / 964.44 = 0.37</math>  Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	100.02	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	100.02	55.00	s3: Flussskies, -sand							
Schnitt: Anlage A1 Schnitt 1R		Seite Anlage A1/36								
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 210624								
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 B1 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: 00_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><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>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></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 = 7.50 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 = 258.211 / 717.302 = 0.360 Bettungslager Bh,d = 258.211 kN/m Erdwiderstand Eph,d = 717.302 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]	[-]																																									
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Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/19.																																															
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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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<div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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 - 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 &gt; 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><thead><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></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>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>102.441</td><td>32.592</td><td>33.614</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.042</td><td>33.614</td><td>35.249</td><td>5.00</td><td>5.00</td></tr><tr><td>102.042</td><td>101.444</td><td>35.249</td><td>37.702</td><td>5.00</td><td>5.00</td></tr><tr><td>101.444</td><td>100.447</td><td>37.702</td><td>41.791</td><td>5.00</td><td>5.00</td></tr><tr><td>100.447</td><td>99.949</td><td>41.791</td><td>43.835</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>43.835</td><td>125.656</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> <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>105.09</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></tbody></table> <div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> 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geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Seite Anlage B1/2
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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<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>106.45</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>104.41</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.07</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>103.20</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>102.04</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>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.95</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>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-5.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-5.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-5.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-5.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-5.0</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-4.7</td><td>9.19</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-4.6</td><td>9.19</td><td>42.40</td><td>47.55</td></tr><tr><td>105.50</td><td>-4.6</td><td>10.00</td><td>46.14</td><td>47.55</td></tr><tr><td>105.45</td><td>-4.6</td><td>10.00</td><td>45.70</td><td>52.42</td></tr><tr><td>105.45</td><td>-4.6</td><td>10.00</td><td>45.70</td><td>52.42</td></tr><tr><td>105.40</td><td>-4.5</td><td>10.00</td><td>45.26</td><td>57.30</td></tr><tr><td>105.14</td><td>-4.3</td><td>10.00</td><td>43.05</td><td>81.67</td></tr><tr><td>105.09</td><td>-4.3</td><td>10.00</td><td>42.61</td><td>86.54</td></tr><tr><td>105.09</td><td>-4.3</td><td>5.00</td><td>21.31</td><td>64.18</td></tr><tr><td>105.05</td><td>-4.2</td><td>5.00</td><td>21.11</td><td>66.50</td></tr><tr><td>105.05</td><td>-4.2</td><td>5.00</td><td>21.11</td><td>66.50</td></tr><tr><td>105.00</td><td>-4.2</td><td>5.00</td><td>20.92</td><td>68.82</td></tr><tr><td>105.00</td><td>-4.2</td><td>5.00</td><td>20.92</td><td>68.82</td></tr><tr><td>104.95</td><td>-4.1</td><td>5.00</td><td>20.71</td><td>70.09</td></tr><tr><td>104.46</td><td>-3.7</td><td>5.00</td><td>18.61</td><td>82.77</td></tr><tr><td>104.41</td><td>-3.7</td><td>5.00</td><td>18.40</td><td>84.03</td></tr><tr><td>104.41</td><td>-3.7</td><td>5.00</td><td>18.40</td><td>84.03</td></tr><tr><td>104.36</td><td>-3.6</td><td>5.00</td><td>18.19</td><td>85.30</td></tr><tr><td>104.12</td><td>-3.4</td><td>5.00</td><td>17.14</td><td>91.64</td></tr><tr><td>104.07</td><td>-3.4</td><td>5.00</td><td>16.93</td><td>92.90</td></tr><tr><td>104.07</td><td>-3.4</td><td>5.00</td><td>16.93</td><td>92.90</td></tr><tr><td>104.02</td><td>-3.3</td><td>5.00</td><td>16.72</td><td>94.21</td></tr><tr><td>103.46</td><td>-2.9</td><td>5.00</td><td>14.34</td><td>108.64</td></tr><tr><td>103.41</td><td>-2.8</td><td>5.00</td><td>14.12</td><td>109.95</td></tr><tr><td>103.41</td><td>-2.8</td><td>5.00</td><td>14.12</td><td>109.95</td></tr><tr><td>103.35</td><td>-2.8</td><td>5.00</td><td>13.90</td><td>111.26</td></tr><tr><td>103.25</td><td>-2.7</td><td>5.00</td><td>13.47</td><td>113.88</td></tr><tr><td>103.20</td><td>-2.7</td><td>5.00</td><td>13.26</td><td>115.19</td></tr><tr><td>103.20</td><td>-2.7</td><td>5.00</td><td>13.26</td><td>115.19</td></tr><tr><td>103.15</td><td>-2.6</td><td>5.00</td><td>13.04</td><td>116.51</td></tr><tr><td>102.74</td><td>-2.3</td><td>5.00</td><td>11.32</td><td>127.07</td></tr><tr><td>102.69</td><td>-2.2</td><td>5.00</td><td>11.10</td><td>128.39</td></tr><tr><td>102.69</td><td>-2.2</td><td>50.00</td><td>111.03</td><td>230.95</td></tr><tr><td>102.64</td><td>-2.2</td><td>50.00</td><td>108.96</td><td>234.39</td></tr><tr><td>102.49</td><td>-2.1</td><td>50.00</td><td>102.75</td><td>244.72</td></tr><tr><td>102.44</td><td>-2.0</td><td>50.00</td><td>100.70</td><td>248.16</td></tr></tbody></table>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.45	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	104.41	0.0	0.0	0.0	104.07	0.0	0.0	0.0	103.41	0.0	0.0	0.0	103.20	0.0	0.0	0.0	102.69	0.0	0.0	0.0	102.44	0.0	0.0	0.0	102.04	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-6.3	-	-	-	107.40	-6.3	-	-	-	106.50	-5.5	-	-	-	106.45	-5.4	-	-	-	106.45	-5.4	-	-	-	106.40	-5.4	-	-	-	106.05	-5.1	-	-	-	106.00	-5.0	0.00	0.00	0.00	106.00	-5.0	0.00	0.00	0.00	105.95	-5.0	0.00	0.00	4.75	105.55	-4.7	9.19	42.80	42.79	105.50	-4.6	9.19	42.40	47.55	105.50	-4.6	10.00	46.14	47.55	105.45	-4.6	10.00	45.70	52.42	105.45	-4.6	10.00	45.70	52.42	105.40	-4.5	10.00	45.26	57.30	105.14	-4.3	10.00	43.05	81.67	105.09	-4.3	10.00	42.61	86.54	105.09	-4.3	5.00	21.31	64.18	105.05	-4.2	5.00	21.11	66.50	105.05	-4.2	5.00	21.11	66.50	105.00	-4.2	5.00	20.92	68.82	105.00	-4.2	5.00	20.92	68.82	104.95	-4.1	5.00	20.71	70.09	104.46	-3.7	5.00	18.61	82.77	104.41	-3.7	5.00	18.40	84.03	104.41	-3.7	5.00	18.40	84.03	104.36	-3.6	5.00	18.19	85.30	104.12	-3.4	5.00	17.14	91.64	104.07	-3.4	5.00	16.93	92.90	104.07	-3.4	5.00	16.93	92.90	104.02	-3.3	5.00	16.72	94.21	103.46	-2.9	5.00	14.34	108.64	103.41	-2.8	5.00	14.12	109.95	103.41	-2.8	5.00	14.12	109.95	103.35	-2.8	5.00	13.90	111.26	103.25	-2.7	5.00	13.47	113.88	103.20	-2.7	5.00	13.26	115.19	103.20	-2.7	5.00	13.26	115.19	103.15	-2.6	5.00	13.04	116.51	102.74	-2.3	5.00	11.32	127.07	102.69	-2.2	5.00	11.10	128.39	102.69	-2.2	50.00	111.03	230.95	102.64	-2.2	50.00	108.96	234.39	102.49	-2.1	50.00	102.75	244.72	102.44	-2.0	50.00	100.70	248.16
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



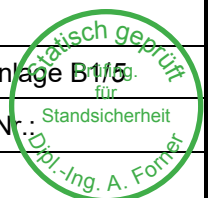
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																
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Statisch geprüft

für

Standicherheit

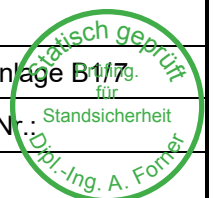
Dipl.-Ing. A. Forner



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 2 Datei: 01_BS 2_LF 1.2 (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 = 8.20 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 B1 Schnitt 2R		Seite Anlage B1/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 109
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 <math>\mu_e = 601.305 / 608.163 = 0.989</math> Bettungslager <math>B_{h,d} = 601.305 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 608.163 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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 Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>102.327</td><td>40.194</td><td>40.428</td><td>5.00</td><td>5.00</td></tr><tr><td>102.327</td><td>101.430</td><td>40.428</td><td>42.542</td><td>5.00</td><td>5.00</td></tr><tr><td>101.430</td><td>100.832</td><td>42.542</td><td>43.951</td><td>5.00</td><td>5.00</td></tr><tr><td>100.832</td><td>100.733</td><td>43.951</td><td>44.186</td><td>5.00</td><td>5.00</td></tr><tr><td>100.733</td><td>100.436</td><td>44.186</td><td>45.403</td><td>5.00</td><td>5.00</td></tr><tr><td>100.436</td><td>99.447</td><td>45.403</td><td>49.461</td><td>5.00</td><td>5.00</td></tr><tr><td>99.447</td><td>99.249</td><td>49.461</td><td>50.273</td><td>5.00</td><td>5.00</td></tr><tr><td>99.249</td><td>80.000</td><td>50.273</td><td>129.223</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><math>w(\text{oben})</math></th><th><math>w(\text{unten})</math></th><th><math>z(\text{oben})</math></th><th><math>z(\text{unten})</math></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> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></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>105.09</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></tbody></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	105.09	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]	[kN/m²]	107.450	107.448	0.000	46.780	0.00	0.00	107.448	106.450	46.780	54.166	0.00	0.00	106.450	106.000	54.166	57.899	0.00	0.00	106.000	105.500	57.899	62.126	0.00	0.00	105.500	105.439	62.126	62.427	0.00	0.61	105.439	105.090	62.427	46.774	0.61	4.10	105.090	105.000	58.423	53.173	4.10	5.00	105.000	104.578	53.173	28.556	5.00	5.00	104.578	104.424	28.556	29.417	5.00	5.00	104.424	104.066	29.417	31.426	5.00	5.00	104.066	103.405	31.426	46.550	5.00	5.00	103.405	103.202	46.550	51.204	5.00	5.00	103.202	102.777	51.204	53.587	5.00	5.00	102.777	102.690	53.587	53.861	5.00	5.00	102.690	102.427	39.560	40.194	5.00	5.00	102.427	102.327	40.194	40.428	5.00	5.00	102.327	101.430	40.428	42.542	5.00	5.00	101.430	100.832	42.542	43.951	5.00	5.00	100.832	100.733	43.951	44.186	5.00	5.00	100.733	100.436	44.186	45.403	5.00	5.00	100.436	99.447	45.403	49.461	5.00	5.00	99.447	99.249	49.461	50.273	5.00	5.00	99.249	80.000	50.273	129.223	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	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	
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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<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>102.33</td><td>-153.31</td><td>-157.54</td></tr><tr><td>102.33</td><td>101.43</td><td>-157.54</td><td>-195.66</td></tr><tr><td>101.43</td><td>100.83</td><td>-195.66</td><td>-221.08</td></tr><tr><td>100.83</td><td>100.73</td><td>-221.08</td><td>-225.31</td></tr><tr><td>100.73</td><td>100.44</td><td>-225.31</td><td>-237.93</td></tr><tr><td>100.44</td><td>99.45</td><td>-237.93</td><td>-279.97</td></tr><tr><td>99.45</td><td>99.25</td><td>-279.97</td><td>-288.38</td></tr><tr><td>99.25</td><td>80.00</td><td>-288.38</td><td>-1106.50</td></tr></tbody></table> 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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>106.45</td><td>-21.7</td><td>-7.6</td><td>-3.2</td></tr><tr><td>106.00</td><td>-32.4</td><td>-13.5</td><td>-7.9</td></tr><tr><td>105.50</td><td>-40.4</td><td>-17.5</td><td>-15.9</td></tr><tr><td>105.44</td><td>-41.1</td><td>-17.5</td><td>-17.0</td></tr><tr><td>105.09</td><td>-44.0</td><td>-15.2</td><td>-22.8</td></tr><tr><td>105.00</td><td>-45.0</td><td>-15.3</td><td>-24.2</td></tr><tr><td>104.58</td><td>-49.4</td><td>-15.6</td><td>-30.7</td></tr><tr><td>104.42</td><td>-51.0</td><td>-16.1</td><td>-33.1</td></tr><tr><td>104.07</td><td>-55.0</td><td>-18.5</td><td>-39.3</td></tr><tr><td>103.41</td><td>-63.1</td><td>-31.1</td><td>-54.9</td></tr><tr><td>103.20</td><td>-65.8</td><td>-37.6</td><td>-61.9</td></tr><tr><td>102.78</td><td>-71.6</td><td>-53.7</td><td>-81.2</td></tr><tr><td>102.69</td><td>-72.8</td><td>-57.3</td><td>-86.0</td></tr><tr><td>102.43</td><td>-64.6</td><td>-35.7</td><td>-98.3</td></tr><tr><td>102.33</td><td>-61.0</td><td>-26.6</td><td>-101.4</td></tr><tr><td>101.43</td><td>-35.3</td><td>39.2</td><td>-92.0</td></tr><tr><td>100.83</td><td>-28.6</td><td>55.5</td><td>-62.6</td></tr><tr><td>100.73</td><td>-28.3</td><td>56.3</td><td>-57.1</td></tr><tr><td>100.44</td><td>-28.5</td><td>55.0</td><td>-40.4</td></tr><tr><td>99.45</td><td>-41.2</td><td>14.6</td><td>-1.5</td></tr><tr><td>99.25</td><td>-43.4</td><td>0.0</td><td>0.0</td></tr></table> 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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>-26.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-26.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-26.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-26.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-22.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-22.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-22.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.38</td><td>-21.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-20.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-20.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-20.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-19.9</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-18.1</td><td>2.37</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-17.9</td><td>2.37</td><td>42.27</td><td>47.55</td></tr><tr><td>105.50</td><td>-17.9</td><td>2.66</td><td>47.55</td><td>47.55</td></tr><tr><td>105.44</td><td>-17.6</td><td>2.66</td><td>46.83</td><td>53.33</td></tr><tr><td>105.44</td><td>-17.6</td><td>3.03</td><td>53.34</td><td>53.33</td></tr><tr><td>105.39</td><td>-17.4</td><td>3.03</td><td>52.66</td><td>58.08</td></tr><tr><td>105.14</td><td>-16.3</td><td>5.02</td><td>81.80</td><td>81.80</td></tr><tr><td>105.09</td><td>-16.1</td><td>5.02</td><td>80.70</td><td>86.54</td></tr><tr><td>105.09</td><td>-16.1</td><td>4.00</td><td>64.19</td><td>64.18</td></tr><tr><td>105.05</td><td>-15.9</td><td>4.00</td><td>63.40</td><td>66.50</td></tr><tr><td>105.05</td><td>-15.9</td><td>4.19</td><td>66.51</td><td>66.50</td></tr><tr><td>105.00</td><td>-15.7</td><td>4.19</td><td>65.69</td><td>68.82</td></tr><tr><td>105.00</td><td>-15.7</td><td>4.39</td><td>68.83</td><td>68.82</td></tr><tr><td>104.95</td><td>-15.4</td><td>4.39</td><td>67.82</td><td>70.18</td></tr><tr><td>104.63</td><td>-14.1</td><td>5.00</td><td>70.41</td><td>78.34</td></tr><tr><td>104.58</td><td>-13.9</td><td>5.00</td><td>69.29</td><td>79.70</td></tr><tr><td>104.58</td><td>-13.9</td><td>5.00</td><td>69.29</td><td>79.70</td></tr><tr><td>104.53</td><td>-13.6</td><td>5.00</td><td>68.21</td><td>81.02</td></tr><tr><td>104.48</td><td>-13.4</td><td>5.00</td><td>67.13</td><td>82.34</td></tr><tr><td>104.42</td><td>-13.2</td><td>5.00</td><td>66.06</td><td>83.66</td></tr><tr><td>104.42</td><td>-13.2</td><td>5.00</td><td>66.06</td><td>83.66</td></tr><tr><td>104.37</td><td>-13.0</td><td>5.00</td><td>64.99</td><td>84.98</td></tr><tr><td>104.12</td><td>-11.9</td><td>5.00</td><td>59.72</td><td>91.58</td></tr><tr><td>104.07</td><td>-11.7</td><td>5.00</td><td>58.68</td><td>92.90</td></tr><tr><td>104.07</td><td>-11.7</td><td>5.00</td><td>58.68</td><td>92.90</td></tr><tr><td>104.02</td><td>-11.5</td><td>5.00</td><td>57.65</td><td>94.21</td></tr><tr><td>103.46</td><td>-9.3</td><td>5.00</td><td>46.66</td><td>108.64</td></tr><tr><td>103.41</td><td>-9.1</td><td>5.00</td><td>45.70</td><td>109.95</td></tr><tr><td>103.41</td><td>-9.1</td><td>5.00</td><td>45.70</td><td>109.95</td></tr><tr><td>103.35</td><td>-8.9</td><td>5.00</td><td>44.74</td><td>111.26</td></tr><tr><td>103.25</td><td>-8.6</td><td>5.00</td><td>42.83</td><td>113.88</td></tr><tr><td>103.20</td><td>-8.4</td><td>5.00</td><td>41.89</td><td>115.19</td></tr><tr><td>103.20</td><td>-8.4</td><td>5.00</td><td>41.89</td><td>115.19</td></tr><tr><td>103.15</td><td>-8.2</td><td>5.00</td><td>41.02</td><td>116.41</td></tr><tr><td>102.82</td><td>-7.0</td><td>5.00</td><td>35.08</td><td>124.94</td></tr><tr><td>102.78</td><td>-6.8</td><td>5.00</td><td>34.25</td><td>126.15</td></tr><tr><td>102.78</td><td>-6.8</td><td>5.00</td><td>34.25</td><td>126.15</td></tr><tr><td>102.73</td><td>-6.7</td><td>5.00</td><td>33.50</td><td>127.27</td></tr><tr><td>102.73</td><td>-6.7</td><td>5.00</td><td>33.50</td><td>127.27</td></tr><tr><td>102.69</td><td>-6.5</td><td>5.00</td><td>32.75</td><td>128.39</td></tr><tr><td>102.69</td><td>-6.5</td><td>35.27</td><td>230.96</td><td>230.95</td></tr><tr><td>102.68</td><td>-6.5</td><td>35.27</td><td>229.26</td><td>231.92</td></tr><tr><td>102.48</td><td>-5.8</td><td>42.17</td><td>245.70</td><td>245.69</td></tr><tr><td>102.43</td><td>-5.7</td><td>42.17</td><td>238.73</td><td>249.13</td></tr><tr><td>102.43</td><td>-5.7</td><td>44.01</td><td>249.14</td><td>249.13</td></tr><tr><td>102.38</td><td>-5.5</td><td>44.01</td><td>241.92</td><td>252.57</td></tr><tr><td>102.38</td><td>-5.5</td><td>45.95</td><td>252.58</td><td>252.57</td></tr><tr><td>102.33</td><td>-5.3</td><td>45.95</td><td>245.11</td><td>256.01</td></tr><tr><td>102.33</td><td>-5.3</td><td>48.00</td><td>256.02</td><td>256.01</td></tr><tr><td>102.28</td><td>-5.2</td><td>48.00</td><td>248.28</td><td>259.45</td></tr><tr><td>101.48</td><td>-2.8</td><td>50.00</td><td>138.50</td><td>314.51</td></tr><tr><td>101.43</td><td>-2.6</td><td>50.00</td><td>131.51</td><td>317.95</td></tr><tr><td>101.43</td><td>-2.6</td><td>50.00</td><td>131.51</td><td>317.95</td></tr><tr><td>101.38</td><td>-2.5</td><td>50.00</td><td>124.57</td><td>321.39</td></tr><tr><td>100.88</td><td>-1.2</td><td>50.00</td><td>57.79</td><td>355.81</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-26.7	-	-	-	107.45	-26.7	-	-	-	107.45	-26.7	-	-	-	107.40	-26.5	-	-	-	106.50	-22.4	-	-	-	106.45	-22.1	-	-	-	106.45	-22.1	-	-	-	106.38	-21.8	-	-	-	106.05	-20.3	-	-	-	106.00	-20.1	0.00	0.00	0.00	106.00	-20.1	0.00	0.00	0.00	105.95	-19.9	0.00	0.00	4.75	105.55	-18.1	2.37	42.80	42.79	105.50	-17.9	2.37	42.27	47.55	105.50	-17.9	2.66	47.55	47.55	105.44	-17.6	2.66	46.83	53.33	105.44	-17.6	3.03	53.34	53.33	105.39	-17.4	3.03	52.66	58.08	105.14	-16.3	5.02	81.80	81.80	105.09	-16.1	5.02	80.70	86.54	105.09	-16.1	4.00	64.19	64.18	105.05	-15.9	4.00	63.40	66.50	105.05	-15.9	4.19	66.51	66.50	105.00	-15.7	4.19	65.69	68.82	105.00	-15.7	4.39	68.83	68.82	104.95	-15.4	4.39	67.82	70.18	104.63	-14.1	5.00	70.41	78.34	104.58	-13.9	5.00	69.29	79.70	104.58	-13.9	5.00	69.29	79.70	104.53	-13.6	5.00	68.21	81.02	104.48	-13.4	5.00	67.13	82.34	104.42	-13.2	5.00	66.06	83.66	104.42	-13.2	5.00	66.06	83.66	104.37	-13.0	5.00	64.99	84.98	104.12	-11.9	5.00	59.72	91.58	104.07	-11.7	5.00	58.68	92.90	104.07	-11.7	5.00	58.68	92.90	104.02	-11.5	5.00	57.65	94.21	103.46	-9.3	5.00	46.66	108.64	103.41	-9.1	5.00	45.70	109.95	103.41	-9.1	5.00	45.70	109.95	103.35	-8.9	5.00	44.74	111.26	103.25	-8.6	5.00	42.83	113.88	103.20	-8.4	5.00	41.89	115.19	103.20	-8.4	5.00	41.89	115.19	103.15	-8.2	5.00	41.02	116.41	102.82	-7.0	5.00	35.08	124.94	102.78	-6.8	5.00	34.25	126.15	102.78	-6.8	5.00	34.25	126.15	102.73	-6.7	5.00	33.50	127.27	102.73	-6.7	5.00	33.50	127.27	102.69	-6.5	5.00	32.75	128.39	102.69	-6.5	35.27	230.96	230.95	102.68	-6.5	35.27	229.26	231.92	102.48	-5.8	42.17	245.70	245.69	102.43	-5.7	42.17	238.73	249.13	102.43	-5.7	44.01	249.14	249.13	102.38	-5.5	44.01	241.92	252.57	102.38	-5.5	45.95	252.58	252.57	102.33	-5.3	45.95	245.11	256.01	102.33	-5.3	48.00	256.02	256.01	102.28	-5.2	48.00	248.28	259.45	101.48	-2.8	50.00	138.50	314.51	101.43	-2.6	50.00	131.51	317.95	101.43	-2.6	50.00	131.51	317.95	101.38	-2.5	50.00	124.57	321.39	100.88	-1.2	50.00	57.79	355.81
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102.69	-6.5	35.27	230.96	230.95																																																																																																																																																																																																																																																																																																																																																										
102.68	-6.5	35.27	229.26	231.92																																																																																																																																																																																																																																																																																																																																																										
102.48	-5.8	42.17	245.70	245.69																																																																																																																																																																																																																																																																																																																																																										
102.43	-5.7	42.17	238.73	249.13																																																																																																																																																																																																																																																																																																																																																										
102.43	-5.7	44.01	249.14	249.13																																																																																																																																																																																																																																																																																																																																																										
102.38	-5.5	44.01	241.92	252.57																																																																																																																																																																																																																																																																																																																																																										
102.38	-5.5	45.95	252.58	252.57																																																																																																																																																																																																																																																																																																																																																										
102.33	-5.3	45.95	245.11	256.01																																																																																																																																																																																																																																																																																																																																																										
102.33	-5.3	48.00	256.02	256.01																																																																																																																																																																																																																																																																																																																																																										
102.28	-5.2	48.00	248.28	259.45																																																																																																																																																																																																																																																																																																																																																										
101.48	-2.8	50.00	138.50	314.51																																																																																																																																																																																																																																																																																																																																																										
101.43	-2.6	50.00	131.51	317.95																																																																																																																																																																																																																																																																																																																																																										
101.43	-2.6	50.00	131.51	317.95																																																																																																																																																																																																																																																																																																																																																										
101.38	-2.5	50.00	124.57	321.39																																																																																																																																																																																																																																																																																																																																																										
100.88	-1.2	50.00	57.79	355.81																																																																																																																																																																																																																																																																																																																																																										
Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/10																																																																																																																																																																																																																																																																																																																																																										
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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

100.83	-1.0	50.00	51.34	359.25
100.83	-1.0	50.00	51.34	359.25
100.78	-0.9	50.00	44.92	362.69
100.78	-0.9	50.00	44.92	362.69
100.73	-0.8	50.00	38.54	366.13
100.73	-0.8	50.00	38.54	366.13
100.68	-0.6	50.00	32.24	369.55
100.49	-0.1	50.00	7.30	383.21
100.44	0.0	50.00	1.13	386.63
100.44	0.0	50.00	1.13	386.63
100.39	0.1	50.00	-5.02	390.05
99.50	2.3	50.00	-113.50	451.54
99.45	2.4	50.00	-119.47	454.96
99.45	2.4	50.00	-119.47	454.96
99.40	2.5	50.00	-125.44	458.38
99.30	2.7	50.00	-137.38	465.21
99.25	2.9	50.00	-143.35	468.63

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k}$ : -0.13831486  
Theoretischer Fußpunkt = 99.249 m

Einbindetiefe  $t_g$  = 6.75 m  
Profillänge = 8.20 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$   
 $G_{v,k}$  = 155.17 kN/m  
 $G'_{v,k}$  = 0.00 kN/m  
 $P_{v,k}$  = 0.00 kN/m  
 $E_{av,k}$  = 67.05 kN/m ( $E_{ah,k}$  = 380.78 kN/m)  
 $B_{v,k}$  = 178.84  
Summe  $V_{v,k}$  = 43.38 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/m<sup>2</sup>  
(gemittelt von 100.13 bis 96.61 m) ==>  $q_{b,k}$  = 1.60 MN/m<sup>2</sup>  
 $R_{b,d}$  =  $A \cdot q_{b,k} / \gamma_{(q_b,k)} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung

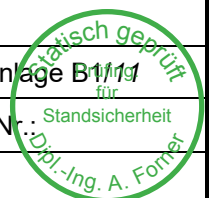
von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	105.09	0.00	S1: Auffüllungen
105.09	102.69	0.00	S2: Auelehm
102.69	99.25	55.00	s3: Flussskies, -sand

Mantelfläche bis 99.25 m = 1.000 m<sup>2</sup>/m/m ==>  $R_{s1,d}$   
 $R_{s1,d}$  =  $\eta(s) \cdot R_{s1,k} / \gamma_{(q_s,k)} = 1.000 \cdot 189.20 / 1.40 = 135.14$  kN/m  
 $R_{d}$  =  $R_{b,d} + R_{s1,d} = 1000.19$  kN/m

Einwirkungen  
 $V_{d}$  =  $G_{d} - G'_{d} + E_{av,d} + P_{v,d} = 186.20 - 0.00 + 79.96 + 0.00 = 266.16$  kN/m  
==>  $\mu = V_{d} / R_{d} = 266.16 / 1000.19 = 0.27$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage B1 Schnitt 2R	Seite Anlage B1/11
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)	Archiv Nr.: 1111
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: 02_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> <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>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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (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 = 8.00 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 <math>\mu_e = 201.090 / 204.335 = 0.984</math></div><div>Bettungslager <math>B_{h,d} = 201.090</math> kN/m</div><div>Erdwiderstand <math>E_{ph,d} = 204.335</math> 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	<div><div>Schnitt:</div><div>Anlage B1</div><div>Schnitt 2R</div></div> <div><div>Seite Anlage B1/12</div></div> <div><div>Kapitel:</div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <div><div>Archiv Nr.:</div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div></div> <div><div>Projekt-Nr.: 2004-0025</div></div>	<div><div>Seite Anlage B1/12</div><div>Archiv Nr.:</div><div>Genehmigungsstatik</div><div>Projekt-Nr.: 2004-0025</div></div> <div><div>Statistisch geprüft</div><div>für</div><div>Standsicherheit</div><div>Dipl.-Ing. A. Forner</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																																			
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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>Anker und Steifen</div> <div>N<sub>d</sub>' = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d</sub>'</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>-85.91</td><td>-74.37</td><td>-74.37</td><td>-7.67</td><td>6.900E+4</td><td>2.100E+7</td><td>-94.83</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-6.8</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.9</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-6.9</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-7.0</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-7.1</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-7.3</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-7.4</td><td>0.0</td><td>-85.91</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>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-7.6</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-7.8</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-7.9</td><td>0.0</td><td>-85.91</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-8.0</td><td>0.0</td><td>-85.91</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\00_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>-0.0059</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>a,k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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 · k<sub>0</sub></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>104.114</td><td>17.945</td><td>17.945</td><td>5.00</td><td>5.00</td></tr><tr><td>104.114</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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d</sub> '	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-85.91	-74.37	-74.37	-7.67	6.900E+4	2.100E+7	-94.83	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-6.8	0.0	-85.91	0.00	0.00	-0.90	106.95	-6.9	0.0	-85.91	0.00	0.00	-0.90	106.95	-6.9	0.0	-85.91	0.00	0.00	-0.80	106.95	-7.0	0.0	-85.91	0.00	0.00	-0.70	106.95	-7.1	0.0	-85.91	0.00	0.00	-0.60	106.95	-7.3	0.0	-85.91	0.00	0.00	-0.50	106.95	-7.4	0.0	-85.91	0.00	0.00	-0.40	106.95	-7.5	0.0	-85.91	0.00	0.00	-0.30	106.95	-7.6	0.0	-85.91	0.00	0.00	-0.20	106.95	-7.8	0.0	-85.91	0.00	0.00	-0.10	106.95	-7.9	0.0	-85.91	0.00	0.00	0.00	106.95	-8.0	0.0	-85.91	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0059	Schicht	UK	γ <sub>m,k</sub>	γ <sub>a,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	104.114	17.945	17.945	5.00	5.00	104.114	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	Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/13	
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d</sub> '																																																																																																																																																																																																																																																																																																																							
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Fortner

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>103.202</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>41.783</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>41.783</td><td>45.886</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>80.000</td><td>45.886</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.81</td></tr><tr><td>99.45</td><td>80.00</td><td>-131.81</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>-85.9</td></tr><tr><td>106.95</td><td>-15.4</td><td>73.5</td><td>-3.1</td><td></td></tr><tr><td>106.45</td><td>-30.8</td><td>61.2</td><td>30.6</td><td></td></tr><tr><td>105.50</td><td>-60.0</td><td>37.6</td><td>77.5</td><td></td></tr><tr><td>105.45</td><td>-61.6</td><td>36.4</td><td>79.3</td><td></td></tr><tr><td>105.09</td><td>-72.6</td><td>26.5</td><td>90.7</td><td></td></tr><tr><td>105.00</td><td>-75.2</td><td>23.7</td><td>93.0</td><td></td></tr><tr><td>104.40</td><td>-91.5</td><td>7.8</td><td>102.4</td><td></td></tr><tr><td>104.11</td><td>-99.4</td><td>0.1</td><td>103.5</td><td></td></tr><tr><td>104.07</td><td>-100.7</td><td>-1.1</td><td>103.5</td><td></td></tr><tr><td>103.40</td><td>-118.9</td><td>-18.9</td><td>96.9</td><td></td></tr><tr><td>103.20</td><td>-124.3</td><td>-24.2</td><td>92.6</td><td></td></tr><tr><td>102.69</td><td>-138.2</td><td>-37.8</td><td>76.7</td><td></td></tr><tr><td>102.55</td><td>-142.4</td><td>-41.5</td><td>71.2</td><td></td></tr><tr><td>102.45</td><td>-145.2</td><td>-45.8</td><td>66.8</td><td></td></tr><tr><td>101.85</td><td>-151.3</td><td>-55.6</td><td>35.1</td><td></td></tr><tr><td>101.45</td><td>-149.0</td><td>-47.3</td><td>14.1</td><td></td></tr><tr><td>100.45</td><td>-130.4</td><td>3.2</td><td>-7.2</td><td></td></tr><tr><td>99.45</td><td>-131.1</td><td>0.0</td><td>0.0</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></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>-13.4</td><td>-10.8</td><td>-2.7</td><td>-74.4</td></tr><tr><td>106.95</td><td>-13.4</td><td>63.6</td><td>-2.7</td><td></td></tr><tr><td>106.45</td><td>-26.8</td><td>52.8</td><td>26.4</td><td></td></tr><tr><td>105.50</td><td>-52.2</td><td>32.4</td><td>66.9</td><td></td></tr><tr><td>105.45</td><td>-53.5</td><td>31.3</td><td>68.5</td><td></td></tr><tr><td>105.09</td><td>-63.2</td><td>22.7</td><td>78.3</td><td></td></tr><tr><td>105.00</td><td>-65.4</td><td>20.4</td><td>80.2</td><td></td></tr><tr><td>104.40</td><td>-79.6</td><td>6.6</td><td>88.3</td><td></td></tr><tr><td>104.11</td><td>-86.4</td><td>0.0</td><td>89.2</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	41.783	5.00	5.00	100.449	99.449	41.783	45.886	5.00	5.00	99.449	80.000	45.886	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	-89.29	100.45	99.45	-89.29	-131.81	99.45	80.00	-131.81	-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	-85.9	106.95	-15.4	73.5	-3.1		106.45	-30.8	61.2	30.6		105.50	-60.0	37.6	77.5		105.45	-61.6	36.4	79.3		105.09	-72.6	26.5	90.7		105.00	-75.2	23.7	93.0		104.40	-91.5	7.8	102.4		104.11	-99.4	0.1	103.5		104.07	-100.7	-1.1	103.5		103.40	-118.9	-18.9	96.9		103.20	-124.3	-24.2	92.6		102.69	-138.2	-37.8	76.7		102.55	-142.4	-41.5	71.2		102.45	-145.2	-45.8	66.8		101.85	-151.3	-55.6	35.1		101.45	-149.0	-47.3	14.1		100.45	-130.4	3.2	-7.2		99.45	-131.1	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		106.95	-13.4	-10.8	-2.7	-74.4	106.95	-13.4	63.6	-2.7		106.45	-26.8	52.8	26.4		105.50	-52.2	32.4	66.9		105.45	-53.5	31.3	68.5		105.09	-63.2	22.7	78.3		105.00	-65.4	20.4	80.2		104.40	-79.6	6.6	88.3		104.11	-86.4	0.0	89.2	
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101.850	101.450	36.038	37.679	5.00	5.00																																																																																																																																																																																																																																																																																																	
101.450	100.449	37.679	41.783	5.00	5.00																																																																																																																																																																																																																																																																																																	
100.449	99.449	41.783	45.886	5.00	5.00																																																																																																																																																																																																																																																																																																	
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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><div>104.07</div><div>-87.6</div><div>-1.1</div><div>89.2</div></div><div><div>103.40</div><div>-103.4</div><div>-16.3</div><div>83.4</div></div><div><div>103.20</div><div>-108.1</div><div>-20.9</div><div>79.7</div></div><div><div>102.69</div><div>-120.2</div><div>-32.6</div><div>66.0</div></div><div><div>102.55</div><div>-123.9</div><div>-35.8</div><div>61.2</div></div><div><div>102.45</div><div>-126.3</div><div>-39.5</div><div>57.5</div></div><div><div>101.85</div><div>-131.6</div><div>-48.0</div><div>30.0</div></div><div><div>101.45</div><div>-129.6</div><div>-40.8</div><div>12.0</div></div><div><div>100.45</div><div>-113.4</div><div>2.9</div><div>-6.3</div></div><div><div>99.45</div><div>-114.0</div><div>0.0</div><div>0.0</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>106.95</div><div>-13.4</div><div>-10.8</div><div>-2.7</div><div>-74.4</div></div><div><div>106.95</div><div>-13.4</div><div>63.6</div><div>-2.7</div><div></div></div><div><div>106.45</div><div>-26.8</div><div>52.8</div><div>26.4</div><div></div></div><div><div>105.50</div><div>-52.2</div><div>32.4</div><div>66.9</div><div></div></div><div><div>105.45</div><div>-53.5</div><div>31.3</div><div>68.5</div><div></div></div><div><div>105.09</div><div>-63.2</div><div>22.7</div><div>78.3</div><div></div></div><div><div>105.00</div><div>-65.4</div><div>20.4</div><div>80.2</div><div></div></div><div><div>104.40</div><div>-79.6</div><div>6.6</div><div>88.3</div><div></div></div><div><div>104.11</div><div>-86.4</div><div>0.0</div><div>89.2</div><div></div></div><div><div>104.07</div><div>-87.6</div><div>-1.1</div><div>89.2</div><div></div></div><div><div>103.40</div><div>-103.4</div><div>-16.3</div><div>83.4</div><div></div></div><div><div>103.20</div><div>-108.1</div><div>-20.9</div><div>79.7</div><div></div></div><div><div>102.69</div><div>-120.2</div><div>-32.6</div><div>66.0</div><div></div></div><div><div>102.55</div><div>-123.9</div><div>-35.8</div><div>61.2</div><div></div></div><div><div>102.45</div><div>-126.3</div><div>-39.5</div><div>57.5</div><div></div></div><div><div>101.85</div><div>-131.6</div><div>-48.0</div><div>30.0</div><div></div></div><div><div>101.45</div><div>-129.6</div><div>-40.8</div><div>12.0</div><div></div></div><div><div>100.45</div><div>-113.4</div><div>2.9</div><div>-6.3</div><div></div></div><div><div>99.45</div><div>-114.0</div><div>0.0</div><div>0.0</div><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>106.95</div><div>0.0</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><div><div>105.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.09</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.11</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.07</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.40</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>102.69</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>101.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.45</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>107.45</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.00</div><div>-7.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-7.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-7.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.90</div><div>-6.9</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> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage B1 Schnitt 2R</td><td colspan="2">Seite Anlage B1/15</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">3 LF 2.1 (BS-T, ohne Lasten)</td><td colspan="2">Archiv Nr.: 1115</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/15		Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1115		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/15																			
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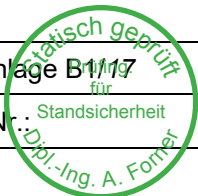




Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																							
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<p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06204106 Theoretischer Fußpunkt = 99.449 m</p> <p>Einbindetiefe tg = 3.10 m Profillänge = 8.00 m</p>			106.40	-6.7	-	-	-	105.55	-6.2	-	-	-	105.50	-6.1	-	-	-	105.50	-6.1	-	-	-	105.45	-6.1	-	-	-	105.45	-6.1	-	-	-	105.40	-6.1	-	-	-	105.14	-5.9	-	-	-	105.09	-5.9	-	-	-	105.09	-5.9	-	-	-	105.05	-5.9	-	-	-	105.05	-5.9	-	-	-	105.00	-5.8	-	-	-	105.00	-5.8	-	-	-	104.95	-5.8	-	-	-	104.45	-5.4	-	-	-	104.40	-5.4	-	-	-	104.40	-5.4	-	-	-	104.35	-5.4	-	-	-	104.16	-5.2	-	-	-	104.11	-5.2	-	-	-	104.11	-5.2	-	-	-	104.07	-5.1	-	-	-	104.07	-5.1	-	-	-	104.01	-5.1	-	-	-	103.45	-4.6	-	-	-	103.40	-4.5	-	-	-	103.40	-4.5	-	-	-	103.35	-4.5	-	-	-	103.25	-4.4	-	-	-	103.20	-4.4	-	-	-	103.20	-4.4	-	-	-	103.15	-4.3	-	-	-	102.74	-3.9	-	-	-	102.69	-3.9	-	-	-	102.69	-3.9	-	-	-	102.64	-3.8	-	-	-	102.60	-3.8	-	-	-	102.55	-3.7	0.00	0.00	0.00	102.55	-3.7	0.00	0.00	0.00	102.50	-3.7	0.00	0.00	3.45	102.50	-3.7	0.94	3.45	3.45	102.45	-3.6	0.94	3.41	6.91	102.45	-3.6	1.91	6.91	6.91	102.40	-3.6	1.91	6.81	10.36	101.90	-3.0	14.77	44.91	44.91	101.85	-3.0	14.77	44.12	48.37	101.85	-3.0	16.19	48.37	48.37	101.80	-2.9	16.19	47.50	51.82	101.50	-2.6	27.82	72.55	72.55	101.45	-2.6	27.82	71.04	76.00	101.45	-2.6	29.77	76.01	76.00	101.40	-2.5	29.77	74.38	79.46	100.50	-1.5	50.00	75.80	141.64	100.45	-1.5	50.00	73.08	145.10	100.45	-1.5	50.00	73.08	145.10	100.40	-1.4	50.00	70.36	148.55	99.50	-0.4	50.00	21.55	210.74	99.45	-0.4	50.00	18.84	214.19
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101.90	-3.0	14.77	44.91	44.91																																																																																																																																																																																																																																																																																																					
101.85	-3.0	14.77	44.12	48.37																																																																																																																																																																																																																																																																																																					
101.85	-3.0	16.19	48.37	48.37																																																																																																																																																																																																																																																																																																					
101.80	-2.9	16.19	47.50	51.82																																																																																																																																																																																																																																																																																																					
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100.40	-1.4	50.00	70.36	148.55																																																																																																																																																																																																																																																																																																					
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Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/16																																																																																																																																																																																																																																																																																																							
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1116																																																																																																																																																																																																																																																																																																							
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: <math>P_{v,k} + G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 151.38 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 38.60 \text{ kN/m}</math> (<math>E_{ah,k} = 219.30 \text{ kN/m}</math>) <math>B_{v,k} = 69.14</math> Summe <math>V_{,k} = 120.85 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.33 bis 96.81 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 99.45 55.00 s3: Flussskies, -sand Mantelfläche bis 99.45 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 170.50 / 1.40 = 121.79 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 986.83 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 181.66 - 0.00 + 44.39 + 0.00 = 226.05 \text{ kN/m}</math> <math>\implies \mu = V_{,d} / R_{,d} = 226.05 / 986.83 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/17
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 22040025
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    <b>LF 2.2 (BS-T, mit Lasten)</b></div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 03_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] [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 = 8.50 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 B1    Schnitt 2R		Seite Anlage B1/18
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 <math>\mu_{ue} = 274.637 / 275.554 = 0.997</math> Bettungslager <math>B_{h,d} = 274.637 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 275.554 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_{d'}</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-233.62</td><td>-190.86</td><td>-99.36</td><td>-8.17</td><td>6.900E+4</td><td>2.100E+7</td><td>-263.93</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_{d'}</math></th><th><math>Q_{d'}</math></th><th><math>M_{d'}</math></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>-6.8</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-7.1</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-7.1</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-7.4</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-7.8</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-8.1</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-8.4</td><td>0.0</td><td>-233.62</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>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-9.1</td><td>0.0</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.5</td><td>0.1</td><td>-233.62</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-9.8</td><td>0.1</td><td>-233.62</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>-233.62</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\00_BS 2_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>-0.0059</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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>0.00</td></tr><tr><td>105.450</td><td>105.439</td><td>71.296</td><td>71.296</td><td>0.50</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/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-233.62	-190.86	-99.36	-8.17	6.900E+4	2.100E+7	-263.93	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	-6.8	0.0	-233.62	0.00	0.00	-0.90	106.95	-7.1	0.0	-233.62	0.00	0.00	-0.90	106.95	-7.1	0.0	-233.62	0.00	0.00	-0.80	106.95	-7.4	0.0	-233.62	0.00	0.00	-0.70	106.95	-7.8	0.0	-233.62	0.00	0.00	-0.60	106.95	-8.1	0.0	-233.62	0.00	0.00	-0.50	106.95	-8.4	0.0	-233.62	0.00	0.00	-0.40	106.95	-8.8	0.0	-233.62	0.00	0.00	-0.30	106.95	-9.1	0.0	-233.62	0.00	0.00	-0.20	106.95	-9.5	0.1	-233.62	0.00	0.00	-0.10	106.95	-9.8	0.1	-233.62	0.00	0.00	0.00	106.95	-10.1	0.1	-233.62	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0059	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	0.00	105.450	105.439	71.296	71.296	0.50	105.439	105.090	71.296	53.915	0.61
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  
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
105.090	105.000	61.169	55.414	4.10	5.00
105.000	104.578	50.675	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	100.410	43.029	45.509	5.00	5.00
100.410	99.402	45.509	49.643	5.00	5.00
99.402	98.949	49.643	51.503	5.00	5.00
98.949	80.000	51.503	129.223	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]					
102.69	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	-90.95		
100.41	99.40	-90.95	-133.78		
99.40	98.95	-133.78	-153.06		
98.95	80.00	-153.06	-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		
107.45	-0.1	-0.2	0.0		
106.95	-27.0	-44.1	-11.0	-233.6	
106.95	-27.0	189.5	-11.0		
106.45	-53.9	145.3	72.7		
105.50	-105.2	61.3	170.8		
105.45	-107.9	56.8	173.7		
105.44	-108.5	55.9	174.3		
105.09	-125.9	28.0	188.8		
105.00	-129.6	21.0	191.0		
104.58	-143.8	-0.4	194.8		
104.45	-147.5	-4.7	194.5		
104.07	-158.7	-17.4	190.3		
103.40	-178.1	-39.6	171.3		
103.20	-183.8	-46.2	162.8		
102.96	-191.0	-54.4	150.4		
102.69	-198.7	-63.2	134.8		
102.55	-203.3	-67.8	125.6		
102.40	-207.1	-74.9	115.0		
101.86	-212.1	-86.2	70.1		
101.41	-209.1	-78.3	32.9		
101.01	-201.3	-58.5	5.4		
100.41	-181.6	-10.0	-15.7		
Schnitt: Anlage B1 Schnitt 2R					Seite Anlage B1/20
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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<div><div><div>99.40 -168.6 17.1 -4.6</div><div>98.95 -173.8 0.0 0.0</div></div><div><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>107.45</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-22.4</td><td>-35.6</td><td>-8.9</td><td>-190.9</td></tr><tr><td>106.95</td><td>-22.4</td><td>155.3</td><td>-8.9</td><td></td></tr><tr><td>106.45</td><td>-44.9</td><td>119.6</td><td>59.8</td><td></td></tr><tr><td>105.50</td><td>-87.5</td><td>51.9</td><td>141.3</td><td></td></tr><tr><td>105.45</td><td>-89.8</td><td>48.3</td><td>143.8</td><td></td></tr><tr><td>105.44</td><td>-90.2</td><td>47.5</td><td>144.3</td><td></td></tr><tr><td>105.09</td><td>-104.8</td><td>24.8</td><td>156.8</td><td></td></tr><tr><td>105.00</td><td>-107.9</td><td>19.2</td><td>158.8</td><td></td></tr><tr><td>104.58</td><td>-120.1</td><td>1.4</td><td>162.7</td><td></td></tr><tr><td>104.45</td><td>-123.3</td><td>-2.3</td><td>162.7</td><td></td></tr><tr><td>104.07</td><td>-133.0</td><td>-13.3</td><td>159.7</td><td></td></tr><tr><td>103.40</td><td>-149.9</td><td>-32.4</td><td>144.5</td><td></td></tr><tr><td>103.20</td><td>-154.9</td><td>-38.1</td><td>137.5</td><td></td></tr><tr><td>102.96</td><td>-161.1</td><td>-45.2</td><td>127.2</td><td></td></tr><tr><td>102.69</td><td>-167.8</td><td>-52.8</td><td>114.2</td><td></td></tr><tr><td>102.55</td><td>-171.8</td><td>-56.8</td><td>106.6</td><td></td></tr><tr><td>102.40</td><td>-175.2</td><td>-62.9</td><td>97.6</td><td></td></tr><tr><td>101.86</td><td>-179.6</td><td>-72.9</td><td>59.8</td><td></td></tr><tr><td>101.41</td><td>-177.2</td><td>-66.5</td><td>28.2</td><td></td></tr><tr><td>101.01</td><td>-170.6</td><td>-49.8</td><td>4.8</td><td></td></tr><tr><td>100.41</td><td>-153.8</td><td>-8.7</td><td>-13.2</td><td></td></tr><tr><td>99.40</td><td>-142.6</td><td>14.5</td><td>-3.9</td><td></td></tr><tr><td>98.95</td><td>-147.0</td><td>0.0</td><td>0.0</td><td></td></tr></table><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>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>-14.6</td><td>-14.2</td><td>-3.6</td><td>-99.4</td></tr><tr><td>106.95</td><td>-14.6</td><td>85.1</td><td>-3.6</td><td></td></tr><tr><td>106.45</td><td>-29.3</td><td>70.9</td><td>35.5</td><td></td></tr><tr><td>105.50</td><td>-57.1</td><td>43.9</td><td>90.0</td><td></td></tr><tr><td>105.45</td><td>-58.6</td><td>42.5</td><td>92.2</td><td></td></tr><tr><td>105.44</td><td>-58.9</td><td>42.2</td><td>92.6</td><td></td></tr><tr><td>105.09</td><td>-69.1</td><td>31.4</td><td>105.5</td><td></td></tr><tr><td>105.00</td><td>-71.5</td><td>28.5</td><td>108.2</td><td></td></tr><tr><td>104.58</td><td>-82.1</td><td>16.3</td><td>117.7</td><td></td></tr><tr><td>104.45</td><td>-85.4</td><td>12.7</td><td>119.5</td><td></td></tr><tr><td>104.07</td><td>-95.1</td><td>1.7</td><td>122.3</td><td></td></tr><tr><td>103.40</td><td>-111.9</td><td>-17.4</td><td>117.0</td><td></td></tr><tr><td>103.20</td><td>-116.9</td><td>-23.1</td><td>113.0</td><td></td></tr><tr><td>102.96</td><td>-123.2</td><td>-30.2</td><td>106.4</td><td></td></tr><tr><td>102.69</td><td>-129.9</td><td>-37.8</td><td>97.4</td><td></td></tr><tr><td>102.55</td><td>-133.8</td><td>-41.8</td><td>91.8</td><td></td></tr><tr><td>102.40</td><td>-137.2</td><td>-48.1</td><td>85.1</td><td></td></tr><tr><td>101.86</td><td>-142.5</td><td>-60.0</td><td>54.9</td><td></td></tr><tr><td>101.41</td><td>-141.4</td><td>-57.0</td><td>28.4</td><td></td></tr><tr><td>101.01</td><td>-136.4</td><td>-44.4</td><td>8.0</td><td></td></tr><tr><td>100.41</td><td>-122.3</td><td>-10.0</td><td>-8.8</td><td></td></tr><tr><td>99.40</td><td>-112.0</td><td>11.1</td><td>-3.0</td><td></td></tr><tr><td>98.95</td><td>-114.9</td><td>0.0</td><td>0.0</td><td></td></tr></table><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>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>-91.5</td></tr><tr><td>106.95</td><td>-7.8</td><td>70.1</td><td>-5.3</td><td></td></tr><tr><td>106.45</td><td>-15.6</td><td>48.7</td><td>24.4</td><td></td></tr><tr><td>105.50</td><td>-30.4</td><td>8.0</td><td>51.3</td><td></td></tr><tr><td>105.45</td><td>-31.2</td><td>5.8</td><td>51.6</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]	107.45	0.0	0.0	0.0		107.45	-0.1	-0.1	0.0		106.95	-22.4	-35.6	-8.9	-190.9	106.95	-22.4	155.3	-8.9		106.45	-44.9	119.6	59.8		105.50	-87.5	51.9	141.3		105.45	-89.8	48.3	143.8		105.44	-90.2	47.5	144.3		105.09	-104.8	24.8	156.8		105.00	-107.9	19.2	158.8		104.58	-120.1	1.4	162.7		104.45	-123.3	-2.3	162.7		104.07	-133.0	-13.3	159.7		103.40	-149.9	-32.4	144.5		103.20	-154.9	-38.1	137.5		102.96	-161.1	-45.2	127.2		102.69	-167.8	-52.8	114.2		102.55	-171.8	-56.8	106.6		102.40	-175.2	-62.9	97.6		101.86	-179.6	-72.9	59.8		101.41	-177.2	-66.5	28.2		101.01	-170.6	-49.8	4.8		100.41	-153.8	-8.7	-13.2		99.40	-142.6	14.5	-3.9		98.95	-147.0	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	-14.6	-14.2	-3.6	-99.4	106.95	-14.6	85.1	-3.6		106.45	-29.3	70.9	35.5		105.50	-57.1	43.9	90.0		105.45	-58.6	42.5	92.2		105.44	-58.9	42.2	92.6		105.09	-69.1	31.4	105.5		105.00	-71.5	28.5	108.2		104.58	-82.1	16.3	117.7		104.45	-85.4	12.7	119.5		104.07	-95.1	1.7	122.3		103.40	-111.9	-17.4	117.0		103.20	-116.9	-23.1	113.0		102.96	-123.2	-30.2	106.4		102.69	-129.9	-37.8	97.4		102.55	-133.8	-41.8	91.8		102.40	-137.2	-48.1	85.1		101.86	-142.5	-60.0	54.9		101.41	-141.4	-57.0	28.4		101.01	-136.4	-44.4	8.0		100.41	-122.3	-10.0	-8.8		99.40	-112.0	11.1	-3.0		98.95	-114.9	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	-0.1	0.0		106.95	-7.8	-21.4	-5.3	-91.5	106.95	-7.8	70.1	-5.3		106.45	-15.6	48.7	24.4		105.50	-30.4	8.0	51.3		105.45	-31.2	5.8	51.6	
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																			
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<table><tr><td>105.44</td><td>-31.4</td><td>5.4</td><td>51.7</td></tr><tr><td>105.09</td><td>-35.7</td><td>-6.6</td><td>51.3</td></tr><tr><td>105.00</td><td>-36.4</td><td>-9.3</td><td>50.6</td></tr><tr><td>104.58</td><td>-38.0</td><td>-15.0</td><td>45.1</td></tr><tr><td>104.45</td><td>-38.0</td><td>-15.0</td><td>43.2</td></tr><tr><td>104.07</td><td>-38.0</td><td>-15.0</td><td>37.4</td></tr><tr><td>103.40</td><td>-38.0</td><td>-15.0</td><td>27.5</td></tr><tr><td>103.20</td><td>-38.0</td><td>-15.0</td><td>24.5</td></tr><tr><td>102.96</td><td>-38.0</td><td>-15.0</td><td>20.8</td></tr><tr><td>102.69</td><td>-38.0</td><td>-15.0</td><td>16.8</td></tr><tr><td>102.55</td><td>-38.0</td><td>-15.0</td><td>14.7</td></tr><tr><td>102.40</td><td>-37.9</td><td>-14.9</td><td>12.5</td></tr><tr><td>101.86</td><td>-37.1</td><td>-12.9</td><td>4.8</td></tr><tr><td>101.41</td><td>-35.8</td><td>-9.5</td><td>-0.2</td></tr><tr><td>101.01</td><td>-34.2</td><td>-5.4</td><td>-3.2</td></tr><tr><td>100.41</td><td>-31.5</td><td>1.3</td><td>-4.3</td></tr><tr><td>99.40</td><td>-30.7</td><td>3.4</td><td>-0.9</td></tr><tr><td>98.95</td><td>-32.0</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>-8.8</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>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.90</td><td>-8.6</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>106.38</td><td>-8.4</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>105.45</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.44</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.39</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.09</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-7.7</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>104.63</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.58</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.58</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.54</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.49</td><td>-7.3</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>104.45</td><td>-7.3</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>104.11</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.07</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.01</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</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>103.40</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>103.25</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.00</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.96</td><td>-5.7</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>102.68</td><td>-5.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.59</td><td>-5.3</td><td>-</td><td>-</td><td>-</td></tr></table>						105.44	-31.4	5.4	51.7	105.09	-35.7	-6.6	51.3	105.00	-36.4	-9.3	50.6	104.58	-38.0	-15.0	45.1	104.45	-38.0	-15.0	43.2	104.07	-38.0	-15.0	37.4	103.40	-38.0	-15.0	27.5	103.20	-38.0	-15.0	24.5	102.96	-38.0	-15.0	20.8	102.69	-38.0	-15.0	16.8	102.55	-38.0	-15.0	14.7	102.40	-37.9	-14.9	12.5	101.86	-37.1	-12.9	4.8	101.41	-35.8	-9.5	-0.2	101.01	-34.2	-5.4	-3.2	100.41	-31.5	1.3	-4.3	99.40	-30.7	3.4	-0.9	98.95	-32.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.8	-	-	-	107.40	-8.8	-	-	-	107.00	-8.7	-	-	-	106.95	-8.6	-	-	-	106.95	-8.6	-	-	-	106.90	-8.6	-	-	-	106.50	-8.5	-	-	-	106.45	-8.5	-	-	-	106.38	-8.4	-	-	-	105.55	-8.0	-	-	-	105.50	-8.0	-	-	-	105.45	-8.0	-	-	-	105.44	-8.0	-	-	-	105.39	-8.0	-	-	-	105.14	-7.8	-	-	-	105.09	-7.8	-	-	-	105.09	-7.8	-	-	-	105.05	-7.7	-	-	-	105.05	-7.7	-	-	-	105.00	-7.7	-	-	-	105.00	-7.7	-	-	-	104.95	-7.7	-	-	-	104.63	-7.4	-	-	-	104.58	-7.4	-	-	-	104.58	-7.4	-	-	-	104.54	-7.4	-	-	-	104.49	-7.3	-	-	-	104.45	-7.3	-	-	-	104.45	-7.3	-	-	-	104.40	-7.3	-	-	-	104.11	-7.0	-	-	-	104.07	-7.0	-	-	-	104.07	-7.0	-	-	-	104.01	-6.9	-	-	-	103.45	-6.3	-	-	-	103.40	-6.3	-	-	-	103.40	-6.3	-	-	-	103.35	-6.2	-	-	-	103.25	-6.1	-	-	-	103.20	-6.0	-	-	-	103.20	-6.0	-	-	-	103.15	-6.0	-	-	-	103.00	-5.8	-	-	-	102.96	-5.7	-	-	-	102.74	-5.5	-	-	-	102.69	-5.4	-	-	-	102.68	-5.4	-	-	-	102.59	-5.3	-	-	-
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103.00	-5.8	-	-	-																																																																																																																																																																																																																																																																																																																																			
102.96	-5.7	-	-	-																																																																																																																																																																																																																																																																																																																																			
102.74	-5.5	-	-	-																																																																																																																																																																																																																																																																																																																																			
102.69	-5.4	-	-	-																																																																																																																																																																																																																																																																																																																																			
102.68	-5.4	-	-	-																																																																																																																																																																																																																																																																																																																																			
102.59	-5.3	-	-	-																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/22																																																																																																																																																																																																																																																																																																																																			
Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 22																																																																																																																																																																																																																																																																																																																																			
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																			

statisch geprüft  
für  
Standicherheit  
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> 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 3.42  102.45 -5.1 1.34 6.84 6.84  102.40 -5.0 1.34 6.75 10.26  102.40 -5.0 2.04 10.26 10.26  102.35 -5.0 2.04 10.13 13.68  101.91 -4.4 10.18 44.46 44.46  101.86 -4.3 10.18 43.76 47.88  101.86 -4.3 11.14 47.88 47.88  101.81 -4.2 11.14 47.11 51.30  101.46 -3.7 20.12 75.25 75.24  101.41 -3.7 20.12 73.82 78.66  101.41 -3.7 21.44 78.67 78.66  101.36 -3.6 21.44 77.15 82.08  101.06 -3.2 32.36 102.61 102.60  101.01 -3.1 32.36 100.30 106.02  101.01 -3.1 34.21 106.03 106.02  100.96 -3.0 34.21 103.55 109.50  100.46 -2.3 50.00 115.10 144.31  100.41 -2.2 50.00 111.49 147.79  100.41 -2.2 50.00 111.49 147.79  100.36 -2.2 50.00 107.88 151.27  99.45 -0.9 50.00 43.32 213.92  99.40 -0.8 50.00 39.75 217.40  99.40 -0.8 50.00 39.75 217.40  99.35 -0.7 50.00 36.18 220.88  99.00 -0.2 50.00 11.22 245.24  98.95 -0.2 50.00 7.66 248.72 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k} = -0.08107292</math>  Theoretischer Fußpunkt = 98.949 m</p> <p>Einbindetiefe <math>t_g = 3.60</math> m  Profillänge = 8.50 m</p> <p>Nachweis Summe V  Nachweis des mobilisierten Erdwiderstands  Bedingung: <math>P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{i,k} = 160.84</math> kN/m  <math>G'_{i,k} = 0.00</math> kN/m  <math>P_{v,k} = 0.00</math> kN/m  <math>E_{av,k} = 69.92</math> kN/m (<math>E_{ah,k} = 395.20</math> kN/m)  <math>B_{v,k} = 93.75</math>  Summe <math>V_{i,k} = 137.02</math> kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit  (Erfahrungswerte nach EA Pfähle)  Verfahren 2: EAU Bild E 4-3 (rechts)  Bohrpfahlwand <math>D = 0.88</math> m  Verhältniswert (min, max) = 0.00  Spitzendruck <math>q_{c,m} = 7.50</math> MN/m<sup>2</sup>  (gemittelt von 99.83 bis 96.31 m) <math>\Rightarrow q_{b,k} = 1.60</math> MN/m<sup>2</sup>  <math>R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05</math> kN/m</p> <p>Mantelreibung  <div> <div>von bis</div> <div>qs,k [kN/m<sup>2</sup>]</div> <div>Bezeichnung</div> </div> <div> 102.55 98.95 55.00 s3: Flussskies, -sand </div> Mantelfläche bis 98.95 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 198.00 / 1.40 = 141.43</math> kN/m  <math>R_{d} = R_{b,d} + R_{s1,d} = 1006.48</math> kN/m</p> <p>Einwirkungen  <math>V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 193.01 - 0.00 + 83.26 + 0.00 = 276.27</math> kN/m  <math>\Rightarrow \mu = V_{i,d} / R_{d} = 276.27 / 1006.48 = 0.27</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p> </div> </div>		
Schnitt:	Anlage B1 Schnitt 2R	Seite Anlage B1/23
Kapitel:	4 LF 2.2 (BS-T, mit Lasten)	Archiv Nr. 1123
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 2 Datei: 04_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 = 9.90 m</div>		
Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/24
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  $\mu_e = 36.369 / 57.176 = 0.636$   
Bettungslager  $B_{h,d} = 36.369 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 57.176 \text{ kN/m}$

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	-637.00	-519.77	-271.61	-50.96	3.900E+7	2.100E+7	-718.54 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	-5.6	0.0	-637.51	0.00	0.00
-7.47	103.72	-5.6	0.0	-637.51	0.00	0.00
-7.47	103.72	-5.6	0.0	-637.51	0.00	0.00
-6.64	103.72	-5.7	0.0	-637.51	0.00	0.00
-5.81	103.72	-5.7	0.0	-637.51	0.00	0.00
-4.98	103.72	-5.7	0.0	-637.51	0.00	0.00
-4.15	103.72	-5.7	0.0	-637.51	0.00	0.00
-3.32	103.72	-5.7	0.0	-637.51	0.00	0.00
-2.49	103.72	-5.7	0.1	-637.51	0.00	0.00
-1.66	103.72	-5.7	0.1	-637.51	0.00	0.00
-0.83	103.72	-5.8	0.1	-637.51	0.00	0.00
0.00	103.72	-5.8	0.1	-637.51	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0049

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

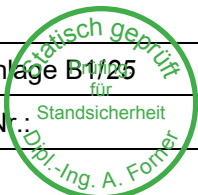
Beziehung:  $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$   
Faktor [-] = 0.50  
Ersatzerddruck-Beiwert mit  $\phi = 40^\circ$   
Ersatzerddruck-Beiwert  $k_{ah}$  wird angewendet, wenn Kohäsion  $< 0.0$ .  
Ersatzerddruck-Beiwert  $k_{ah}$  wird nur auf ständige Lasten angewendet.  
bestimmt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

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	0.00
109.018	109.014	39.614	46.806	0.00	0.00
109.014	108.020	46.806	54.166	0.00	0.00
108.020	107.450	54.166	58.386	0.00	0.00

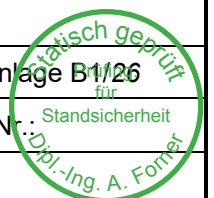
Schnitt: Anlage B1	Schnitt 2R	Seite Anlage B1/25
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025	



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																					
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<table><tr><td>107.450</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>102.003</td><td>36.732</td><td>38.976</td><td>0.00</td><td>0.00</td></tr><tr><td>102.003</td><td>101.008</td><td>38.976</td><td>43.055</td><td>0.00</td><td>0.00</td></tr><tr><td>101.008</td><td>100.014</td><td>43.055</td><td>47.135</td><td>0.00</td><td>0.00</td></tr><tr><td>100.014</td><td>99.119</td><td>47.135</td><td>50.806</td><td>0.00</td><td>0.00</td></tr><tr><td>99.119</td><td>80.000</td><td>50.806</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>k<sub>ph</sub></td><td>k<sub>pch</sub></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>-23.25</td></tr><tr><td>102.00</td><td>101.01</td><td>-23.25</td><td>-65.52</td></tr><tr><td>101.01</td><td>100.01</td><td>-65.52</td><td>-107.79</td></tr><tr><td>100.01</td><td>99.12</td><td>-107.79</td><td>-145.84</td></tr><tr><td>99.12</td><td>80.00</td><td>-145.84</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>-637.5</td></tr><tr><td>103.72</td><td>-272.6</td><td>329.9</td><td>-890.5</td><td></td></tr><tr><td>102.97</td><td>-299.5</td><td>270.8</td><td>-665.6</td><td></td></tr><tr><td>102.69</td><td>-309.9</td><td>246.0</td><td>-592.4</td><td></td></tr><tr><td>102.55</td><td>-315.2</td><td>235.3</td><td>-558.7</td><td></td></tr><tr><td>102.00</td><td>-324.1</td><td>221.2</td><td>-434.8</td><td></td></tr><tr><td>101.01</td><td>-335.0</td><td>200.8</td><td>-220.2</td><td></td></tr><tr><td>100.01</td><td>-348.0</td><td>119.1</td><td>-56.4</td><td></td></tr><tr><td>99.12</td><td>-340.1</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	102.003	36.732	38.976	0.00	0.00	102.003	101.008	38.976	43.055	0.00	0.00	101.008	100.014	43.055	47.135	0.00	0.00	100.014	99.119	47.135	50.806	0.00	0.00	99.119	80.000	50.806	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	k <sub>ph</sub>	k <sub>pch</sub>	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	-23.25	102.00	101.01	-23.25	-65.52	101.01	100.01	-65.52	-107.79	100.01	99.12	-107.79	-145.84	99.12	80.00	-145.84	-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	-637.5	103.72	-272.6	329.9	-890.5		102.97	-299.5	270.8	-665.6		102.69	-309.9	246.0	-592.4		102.55	-315.2	235.3	-558.7		102.00	-324.1	221.2	-434.8		101.01	-335.0	200.8	-220.2		100.01	-348.0	119.1	-56.4		99.12	-340.1	0.0	0.0	
107.450	107.020	58.386	61.570	0.00	0.00																																																																																																																																																																																																																																																																																																						
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102.973	102.690	47.883	49.086	25.27	28.10																																																																																																																																																																																																																																																																																																						
102.690	102.550	36.158	36.732	28.10	29.50																																																																																																																																																																																																																																																																																																						
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100.014	99.119	47.135	50.806	0.00	0.00																																																																																																																																																																																																																																																																																																						
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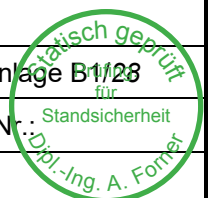
Dipl.-Ing. A. Forner



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<div>Schnittgrößen (q,k)<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>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>109.01</td><td>-0.1</td><td>-0.2</td><td>0.0</td><td></td></tr><tr><td>108.02</td><td>-15.6</td><td>-42.8</td><td>-21.4</td><td></td></tr><tr><td>107.45</td><td>-24.5</td><td>-67.2</td><td>-52.7</td><td></td></tr><tr><td>107.02</td><td>-31.2</td><td>-85.7</td><td>-85.6</td><td></td></tr><tr><td>106.96</td><td>-32.1</td><td>-88.1</td><td>-90.5</td><td></td></tr><tr><td>106.06</td><td>-39.2</td><td>-107.5</td><td>-182.1</td><td></td></tr><tr><td>106.02</td><td>-39.2</td><td>-107.5</td><td>-186.1</td><td></td></tr><tr><td>105.50</td><td>-39.2</td><td>-107.5</td><td>-242.0</td><td></td></tr><tr><td>105.09</td><td>-39.2</td><td>-107.5</td><td>-286.1</td><td></td></tr><tr><td>104.97</td><td>-39.2</td><td>-107.5</td><td>-299.0</td><td></td></tr><tr><td>103.97</td><td>-39.2</td><td>-107.5</td><td>-406.5</td><td></td></tr><tr><td>103.72</td><td>-39.2</td><td>-107.5</td><td>-433.4</td><td>-258.3</td></tr></table></div>			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	0.0	0.0		109.01	-0.2	-0.2	0.0		108.02	-37.3	-50.4	-24.5		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	-519.8	103.72	-229.8	267.0	-716.1		102.97	-253.2	216.3	-535.0		102.69	-262.2	195.0	-476.8		102.55	-266.9	185.9	-450.2		102.00	-274.3	174.4	-352.5		101.01	-281.5	162.9	-180.8		100.01	-292.3	98.3	-46.8		99.12	-287.6	0.0	0.0		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	0.0	0.0	0.0		109.01	-0.1	0.0	0.0		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	-271.6	103.72	-190.6	126.3	-282.7		102.97	-214.0	75.7	-206.7		102.69	-223.1	54.4	-188.3		102.55	-227.7	45.3	-181.3		102.00	-233.0	39.1	-159.7		101.01	-221.4	74.8	-100.4		100.01	-228.7	58.9	-29.5		99.12	-239.5	0.0	0.0		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	0.0	0.0	0.0		109.01	-0.1	-0.2	0.0		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		104.97	-39.2	-107.5	-299.0		103.97	-39.2	-107.5	-406.5		103.72	-39.2	-107.5	-433.4	-258.3
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Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/27																																																																																																																																																																																																																																																																																																																																										
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1127																																																																																																																																																																																																																																																																																																																																										
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																										



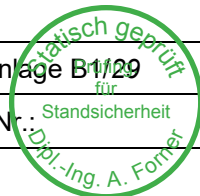
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 103.72   -39.2   140.6   -433.4  102.97   -39.2   140.6   -328.3  102.69   -39.2   140.6   -288.5  102.55   -39.2   140.6   -268.9  102.00   -41.3   135.3   -192.8  101.01   -60.0   88.1   -80.3  100.01   -63.6   39.4   -17.3  99.12   -48.1   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> 109.02   -30.0   -   -   -  109.02   -30.0   -   -   -  109.02   -30.0   -   -   -  109.01   -30.0   -   -   -  109.01   -30.0   -   -   -  108.96   -29.7   -   -   -  108.07   -24.9   -   -   -  108.02   -24.7   -   -   -  108.02   -24.7   -   -   -  107.97   -24.4   -   -   -  107.52   -22.0   -   -   -  107.45   -21.7   -   -   -  107.45   -21.7   -   -   -  107.40   -21.4   -   -   -  107.07   -19.7   -   -   -  107.02   -19.4   -   -   -  107.02   -19.4   -   -   -  106.96   -19.1   -   -   -  106.96   -19.1   -   -   -  106.91   -18.9   -   -   -  106.11   -14.8   -   -   -  106.06   -14.5   -   -   -  106.06   -14.5   -   -   -  106.02   -14.4   -   -   -  106.02   -14.4   -   -   -  105.97   -14.1   -   -   -  105.52   -12.0   -   -   -  105.50   -11.9   -   -   -  105.50   -11.9   -   -   -  105.45   -11.7   -   -   -  105.14   -10.3   -   -   -  105.09   -10.1   -   -   -  105.09   -10.1   -   -   -  105.02   -9.8   -   -   -  105.02   -9.8   -   -   -  104.97   -9.6   -   -   -  104.97   -9.6   -   -   -  104.92   -9.4   -   -   -  104.02   -6.0   -   -   -  103.97   -5.8   -   -   -  103.97   -5.8   -   -   -  103.92   -5.6   -   -   -  103.77   -5.2   -   -   -  103.72   -5.0   -   -   -  103.72   -5.0   -   -   -  103.67   -4.9   -   -   -  103.02   -3.2   -   -   -  102.97   -3.1   -   -   -  102.97   -3.1   -   -   -  102.93   -3.0   -   -   -  102.74   -2.6   -   -   -  102.69   -2.5   -   -   -  102.69   -2.5   -   -   -  102.64   -2.4   -   -   -  102.60   -2.3   -   -   -  102.55   -2.2   0.00   0.00   0.00  102.55   -2.2   0.00   0.00   0.00  102.50   -2.1   0.00   0.00   3.43 </div>		
Schnitt: Anlage B1   Schnitt 2R		Seite Anlage B1/28
Kapitel: 5   LF 3 (BS-T, mit Lasten)		Archiv Nr.: 28
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>102.05</td><td>-1.4</td><td>24.82</td><td>34.35</td><td>34.35</td></tr><tr><td>102.00</td><td>-1.3</td><td>24.82</td><td>32.49</td><td>37.78</td></tr><tr><td>102.00</td><td>-1.3</td><td>28.86</td><td>37.78</td><td>37.78</td></tr><tr><td>101.95</td><td>-1.2</td><td>28.86</td><td>35.67</td><td>41.21</td></tr><tr><td>101.06</td><td>-0.1</td><td>50.00</td><td>6.54</td><td>103.04</td></tr><tr><td>101.01</td><td>-0.1</td><td>50.00</td><td>3.94</td><td>106.47</td></tr><tr><td>101.01</td><td>-0.1</td><td>50.00</td><td>3.94</td><td>106.47</td></tr><tr><td>100.96</td><td>0.0</td><td>50.00</td><td>1.38</td><td>109.91</td></tr><tr><td>100.06</td><td>0.8</td><td>50.00</td><td>-39.99</td><td>171.73</td></tr><tr><td>100.01</td><td>0.8</td><td>50.00</td><td>-42.12</td><td>175.16</td></tr><tr><td>100.01</td><td>0.8</td><td>50.00</td><td>-42.12</td><td>175.16</td></tr><tr><td>99.96</td><td>0.9</td><td>50.00</td><td>-44.23</td><td>178.60</td></tr><tr><td>99.17</td><td>1.5</td><td>50.00</td><td>-77.44</td><td>233.55</td></tr><tr><td>99.12</td><td>1.6</td><td>50.00</td><td>-79.50</td><td>236.98</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.04751068 Theoretischer Fußpunkt = 99.119 m</p> <p>Einbindetiefe tg = 3.43 m Profillänge = 9.90 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k &gt;= Bv,k G,k = 187.34 kN/m G',k = 0.00 kN/m Pv,k = 48.70 kN/m Eav,k = 77.73 kN/m (Eah,k = 440.54 kN/m) Bv,k = 15.37 Summe V,k = 298.40 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 100.00 bis 96.48 m) ==&gt; 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 99.12 55.00 s3: Flusskies, -sand Mantelfläche bis 99.12 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 188.65 / 1.40 = 134.75 kN/m R,d = Rb,d + Rs1,d = 999.80 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 224.80 - 0.00 + 92.33 + 58.44 = 375.57 kN/m ==&gt; µ = V,d / R,d = 375.57 / 999.80 = 0.38</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						102.05	-1.4	24.82	34.35	34.35	102.00	-1.3	24.82	32.49	37.78	102.00	-1.3	28.86	37.78	37.78	101.95	-1.2	28.86	35.67	41.21	101.06	-0.1	50.00	6.54	103.04	101.01	-0.1	50.00	3.94	106.47	101.01	-0.1	50.00	3.94	106.47	100.96	0.0	50.00	1.38	109.91	100.06	0.8	50.00	-39.99	171.73	100.01	0.8	50.00	-42.12	175.16	100.01	0.8	50.00	-42.12	175.16	99.96	0.9	50.00	-44.23	178.60	99.17	1.5	50.00	-77.44	233.55	99.12	1.6	50.00	-79.50	236.98
102.05	-1.4	24.82	34.35	34.35																																																																							
102.00	-1.3	24.82	32.49	37.78																																																																							
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99.12	1.6	50.00	-79.50	236.98																																																																							
Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/29																																																																							
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1129																																																																							
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>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: 05_BS 2_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 = 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 = 9.50 m</div>		
Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1130
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 80.00 50.000 50.000</div> <div>Ausnutzungsgrad <math>\mu_e = 122.978 / 128.385 = 0.958</math></div> <div>Bettungslager <math>B_{h,d} = 122.978 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 128.385 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td><math>N_{d'}</math></td><td><math>N(g+q+w),k</math></td><td><math>N(g+w),k</math></td><td><math>N_{w,k}</math></td><td>EA</td><td>EI</td><td><math>N_{d'}</math></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>-333.29</td><td>-259.01</td><td>-259.01</td><td>-51.31</td><td>3.900E+7</td><td>2.100E+7</td><td>-330.23</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [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><math>w_{x,d}</math></td><td><math>w_{y,d}</math></td><td><math>N_{d'}</math></td><td><math>Q_{d'}</math></td><td><math>M_{d'}</math></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>-6.2</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-6.3</td><td>0.0</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-6.3</td><td>0.1</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-6.3</td><td>0.1</td><td>-334.08</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-6.3</td><td>0.1</td><td>-334.08</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>-0.0049</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td><math>\gamma_{m,k}</math></td><td><math>\gamma_{m',k}</math></td><td><math>\phi_{i,k}</math></td><td><math>c(pas),k</math></td><td><math>c(akt),k</math></td><td><math>d(p)/\phi_i</math></td><td><math>d(a)/\phi_i</math></td><td><math>q_c</math></td><td><math>c_{u,k}</math></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> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></td><td><math>k_{ach}</math></td><td><math>\phi_{i,k}</math></td><td><math>\delta</math></td><td><math>\theta</math></td><td><math>k_{agh}(40^\circ)</math></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> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>)</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></tr><tr><td>109.014</td><td>108.020</td><td>1.992</td><td>9.352</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></tr><tr><td>107.450</td><td>107.020</td><td>13.573</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	-333.29	-259.01	-259.01	-51.31	3.900E+7	2.100E+7	-330.23	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	-6.2	0.0	-334.08	0.00	0.00	-7.47	103.72	-6.3	0.0	-334.08	0.00	0.00	-7.47	103.72	-6.3	0.0	-334.08	0.00	0.00	-6.64	103.72	-6.3	0.0	-334.08	0.00	0.00	-5.81	103.72	-6.3	0.0	-334.08	0.00	0.00	-4.98	103.72	-6.3	0.0	-334.08	0.00	0.00	-4.15	103.72	-6.3	0.0	-334.08	0.00	0.00	-3.32	103.72	-6.3	0.0	-334.08	0.00	0.00	-2.49	103.72	-6.3	0.0	-334.08	0.00	0.00	-1.66	103.72	-6.3	0.1	-334.08	0.00	0.00	-0.83	103.72	-6.3	0.1	-334.08	0.00	0.00	0.00	103.72	-6.3	0.1	-334.08	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0049	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]	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	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Schnitt: Anlage B1 Schnitt 2R	Seite Anlage B1/01
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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																							
<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>102.003</td><td>34.949</td><td>37.191</td><td>0.00</td><td>0.00</td></tr><tr><td>102.003</td><td>101.010</td><td>37.191</td><td>41.267</td><td>0.00</td><td>0.00</td></tr><tr><td>101.010</td><td>100.016</td><td>41.267</td><td>45.344</td><td>0.00</td><td>0.00</td></tr><tr><td>100.016</td><td>99.519</td><td>45.344</td><td>47.382</td><td>0.00</td><td>0.00</td></tr><tr><td>99.519</td><td>80.000</td><td>47.382</td><td>127.440</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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>-32.90</td></tr><tr><td>102.00</td><td>101.01</td><td>-32.90</td><td>-72.12</td></tr><tr><td>101.01</td><td>100.02</td><td>-72.12</td><td>-111.35</td></tr><tr><td>100.02</td><td>99.52</td><td>-111.35</td><td>-130.96</td></tr><tr><td>99.52</td><td>80.00</td><td>-130.96</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>-334.1</td></tr><tr><td>103.72</td><td>-242.0</td><td>161.8</td><td>-328.0</td><td></td></tr><tr><td>102.97</td><td>-271.2</td><td>98.4</td><td>-230.1</td><td></td></tr><tr><td>102.69</td><td>-282.5</td><td>71.6</td><td>-206.0</td><td></td></tr><tr><td>102.55</td><td>-288.3</td><td>60.0</td><td>-196.8</td><td></td></tr><tr><td>102.00</td><td>-292.1</td><td>58.9</td><td>-165.7</td><td></td></tr><tr><td>101.01</td><td>-283.8</td><td>89.8</td><td>-89.2</td><td></td></tr><tr><td>100.02</td><td>-299.0</td><td>49.8</td><td>-13.2</td><td></td></tr><tr><td>99.52</td><td>-302.9</td><td>0.0</td><td>0.0</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></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>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr><tr><td>107.45</td><td>-34.1</td><td>-12.2</td><td>-7.2</td><td></td></tr><tr><td>107.45</td><td>-82.8</td><td>-12.2</td><td>-38.4</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	102.003	34.949	37.191	0.00	0.00	102.003	101.010	37.191	41.267	0.00	0.00	101.010	100.016	41.267	45.344	0.00	0.00	100.016	99.519	45.344	47.382	0.00	0.00	99.519	80.000	47.382	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	-32.90	102.00	101.01	-32.90	-72.12	101.01	100.02	-72.12	-111.35	100.02	99.52	-111.35	-130.96	99.52	80.00	-130.96	-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	-334.1	103.72	-242.0	161.8	-328.0		102.97	-271.2	98.4	-230.1		102.69	-282.5	71.6	-206.0		102.55	-288.3	60.0	-196.8		102.00	-292.1	58.9	-165.7		101.01	-283.8	89.8	-89.2		100.02	-299.0	49.8	-13.2		99.52	-302.9	0.0	0.0		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	-21.0	-5.6	-2.2		107.45	-34.1	-12.2	-7.2		107.45	-82.8	-12.2	-38.4	
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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><div>107.02</div><div>-93.4</div><div>-18.7</div><div>-45.0</div></div><div><div>105.97</div><div>-121.1</div><div>-40.4</div><div>-75.2</div></div><div><div>105.50</div><div>-134.5</div><div>-52.7</div><div>-97.1</div></div><div><div>105.09</div><div>-146.6</div><div>-65.4</div><div>-121.2</div></div><div><div>104.97</div><div>-150.0</div><div>-70.3</div><div>-129.3</div></div><div><div>103.97</div><div>-179.4</div><div>-119.6</div><div>-223.1</div></div><div><div>103.72</div><div>-186.9</div><div>-134.2</div><div>-254.8</div><div>-259.0</div></div><div><div>103.72</div><div>-186.9</div><div>124.8</div><div>-254.8</div></div><div><div>102.97</div><div>-209.8</div><div>76.0</div><div>-179.3</div></div><div><div>102.69</div><div>-218.7</div><div>55.5</div><div>-160.7</div></div><div><div>102.55</div><div>-223.2</div><div>46.6</div><div>-153.6</div></div><div><div>102.00</div><div>-226.5</div><div>45.8</div><div>-129.4</div></div><div><div>101.01</div><div>-220.1</div><div>70.2</div><div>-69.8</div></div><div><div>100.02</div><div>-232.1</div><div>39.0</div><div>-10.3</div></div><div><div>99.52</div><div>-235.2</div><div>0.0</div><div>0.0</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>109.02</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>109.01</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.02</div><div>-21.0</div><div>-5.6</div><div>-2.2</div><div></div></div><div><div>107.45</div><div>-34.1</div><div>-12.2</div><div>-7.2</div><div></div></div><div><div>107.45</div><div>-82.8</div><div>-12.2</div><div>-38.4</div><div></div></div><div><div>107.02</div><div>-93.4</div><div>-18.7</div><div>-45.0</div><div></div></div><div><div>105.97</div><div>-121.1</div><div>-40.4</div><div>-75.2</div><div></div></div><div><div>105.50</div><div>-134.5</div><div>-52.7</div><div>-97.1</div><div></div></div><div><div>105.09</div><div>-146.6</div><div>-65.4</div><div>-121.2</div><div></div></div><div><div>104.97</div><div>-150.0</div><div>-70.3</div><div>-129.3</div><div></div></div><div><div>103.97</div><div>-179.4</div><div>-119.6</div><div>-223.1</div><div></div></div><div><div>103.72</div><div>-186.9</div><div>-134.2</div><div>-254.8</div><div>-259.0</div></div><div><div>103.72</div><div>-186.9</div><div>124.8</div><div>-254.8</div><div></div></div><div><div>102.97</div><div>-209.8</div><div>76.0</div><div>-179.3</div><div></div></div><div><div>102.69</div><div>-218.7</div><div>55.5</div><div>-160.7</div><div></div></div><div><div>102.55</div><div>-223.2</div><div>46.6</div><div>-153.6</div><div></div></div><div><div>102.00</div><div>-226.5</div><div>45.8</div><div>-129.4</div><div></div></div><div><div>101.01</div><div>-220.1</div><div>70.2</div><div>-69.8</div><div></div></div><div><div>100.02</div><div>-232.1</div><div>39.0</div><div>-10.3</div><div></div></div><div><div>99.52</div><div>-235.2</div><div>0.0</div><div>0.0</div><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>109.02</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>109.01</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.02</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>107.02</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.97</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>105.09</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.97</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.97</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>-10.6</div></div><div><div>102.97</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.69</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>102.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.01</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.02</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.52</div><div>0.0</div><div>0.0</div><div>0.0</div><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>109.02</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>109.02</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>109.02</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>109.01</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div><div><div>109.01</div><div>-18.0</div><div>-</div><div>-</div><div>-</div></div></div></div></div> <tr><td colspan="2">Schnitt: Anlage B1 Schnitt 2R</td><td>Seite Anlage B1/03</td></tr> <tr><td colspan="2">Kapitel: 6 LF 4 (BS-P, mit Lasten)</td><td>Archiv Nr. 1103</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/03	Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr. 1103	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
Schnitt: Anlage B1 Schnitt 2R		Seite Anlage B1/03									
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr. 1103									
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>108.96</div><div>-17.8</div><div>-</div><div>-</div><div>-</div></div><div><div>108.07</div><div>-15.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.02</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>108.02</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.97</div><div>-15.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.52</div><div>-14.0</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-13.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.07</div><div>-12.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.02</div><div>-12.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.02</div><div>-12.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.97</div><div>-12.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.02</div><div>-10.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.97</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.97</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.92</div><div>-9.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.52</div><div>-8.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-8.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-8.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-8.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.14</div><div>-8.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.09</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.09</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.02</div><div>-7.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.02</div><div>-7.8</div><div>-</div><div>-</div><div>-</div></div><div><div>104.97</div><div>-7.6</div><div>-</div><div>-</div><div>-</div></div><div><div>104.97</div><div>-7.6</div><div>-</div><div>-</div><div>-</div></div><div><div>104.92</div><div>-7.5</div><div>-</div><div>-</div><div>-</div></div><div><div>104.02</div><div>-5.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.97</div><div>-5.5</div><div>-</div><div>-</div><div>-</div></div><div><div>103.97</div><div>-5.5</div><div>-</div><div>-</div><div>-</div></div><div><div>103.92</div><div>-5.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.77</div><div>-5.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-5.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-5.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.67</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.02</div><div>-3.7</div><div>-</div><div>-</div><div>-</div></div><div><div>102.97</div><div>-3.6</div><div>-</div><div>-</div><div>-</div></div><div><div>102.97</div><div>-3.6</div><div>-</div><div>-</div><div>-</div></div><div><div>102.93</div><div>-3.5</div><div>-</div><div>-</div><div>-</div></div><div><div>102.74</div><div>-3.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.69</div><div>-3.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.69</div><div>-3.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.64</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-3.0</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>19.82</div></div><div><div>102.50</div><div>-2.9</div><div>0.00</div><div>0.00</div><div>23.25</div></div><div><div>102.05</div><div>-2.2</div><div>24.47</div><div>54.14</div><div>54.14</div></div><div><div>102.00</div><div>-2.1</div><div>24.47</div><div>52.42</div><div>57.57</div></div><div><div>102.00</div><div>-2.1</div><div>26.88</div><div>57.57</div><div>57.57</div></div><div><div>101.95</div><div>-2.1</div><div>26.88</div><div>55.70</div><div>61.00</div></div><div><div>101.06</div><div>-0.9</div><div>50.00</div><div>44.95</div><div>122.78</div></div><div><div>101.01</div><div>-0.8</div><div>50.00</div><div>41.87</div><div>126.21</div></div><div><div>101.01</div><div>-0.8</div><div>50.00</div><div>41.87</div><div>126.21</div></div><div><div>100.96</div><div>-0.8</div><div>50.00</div><div>38.81</div><div>129.65</div></div><div><div>100.07</div><div>0.3</div><div>50.00</div><div>-14.60</div><div>191.42</div></div><div><div>100.02</div><div>0.4</div><div>50.00</div><div>-17.52</div><div>194.85</div></div><div><div>100.02</div><div>0.4</div><div>50.00</div><div>-17.52</div><div>194.85</div></div><div><div>99.97</div><div>0.4</div><div>50.00</div><div>-20.43</div><div>198.29</div></div><div><div>99.57</div><div>0.9</div><div>50.00</div><div>-43.68</div><div>225.74</div></div><div><div>99.52</div><div>0.9</div><div>50.00</div><div>-46.58</div><div>229.18</div></div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.06697837</div><div>Theoretischer Fußpunkt = 99.519 m</div><div>Einbindetiefe tg = 3.03 m</div><div>Profillänge = 9.50 m</div></div></div>					
Schnitt:		Anlage B1 Schnitt 2R		Seite Anlage B1/34	
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>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_{k} = 179.77 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 48.70 \text{ kN/m}</math> <math>E_{av,k} = 50.86 \text{ kN/m}</math> (<math>E_{ah,k} = 293.71 \text{ kN/m}</math>) <math>B_{v,k} = 38.46</math> Summe <math>V_{k} = 240.86 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.40 bis 96.88 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 99.52 55.00 s3: Flussskies, -sand Mantelfläche bis 99.52 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 166.65 / 1.40 = 119.04 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 984.08 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 242.69 - 0.00 + 64.84 + 65.75 = 373.28 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{d} / R_{d} = 373.28 / 984.08 = 0.38</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt:	Anlage B1 Schnitt 2R	Seite Anlage B1/35
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>Anlage C1 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: 00_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 = 7.50 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 = 294.289 / 583.628 = 0.504 Bettungslager Bh,d = 294.289 kN/m Erdwiderstand Eph,d = 583.628 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]	[-]																																									
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]																																														
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Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/1																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 119 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>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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 - 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 &gt; 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><thead><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></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>[kN/m²]</th><th>[kN/m²]</th></tr></thead><tbody><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>102.441</td><td>30.494</td><td>31.312</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.191</td><td>31.312</td><td>32.334</td><td>5.00</td><td>5.00</td></tr><tr><td>102.191</td><td>101.444</td><td>32.334</td><td>35.400</td><td>5.00</td><td>5.00</td></tr><tr><td>101.444</td><td>101.095</td><td>35.400</td><td>36.831</td><td>5.00</td><td>5.00</td></tr><tr><td>101.095</td><td>100.447</td><td>36.831</td><td>39.489</td><td>5.00</td><td>5.00</td></tr><tr><td>100.447</td><td>99.949</td><td>39.489</td><td>41.533</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>41.533</td><td>123.354</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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Anlage C1 Schnitt 3R</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage C1/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
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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>102.64 102.44 -142.59 -151.06</div> <div>102.44 102.19 -151.06 -161.65</div> <div>102.19 101.44 -161.65 -193.42</div> <div>101.44 101.10 -193.42 -208.25</div> <div>101.10 100.45 -208.25 -235.79</div> <div>100.45 99.95 -235.79 -256.97</div> <div>99.95 80.00 -256.97 -1104.84</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>106.89 -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 -43.1 -5.5 -17.4</div><div>105.00 -45.8 -5.3 -18.6</div><div>104.45 -52.4 -8.9 -22.3</div><div>103.44 -66.3 -26.4 -38.9</div><div>102.64 -79.3 -50.6 -69.2</div><div>102.44 -70.3 -25.4 -76.7</div><div>102.19 -61.1 1.0 -79.7</div><div>101.44 -45.7 47.6 -58.5</div><div>101.10 -44.6 53.0 -40.6</div><div>100.45 -52.5 36.2 -9.9</div><div>99.95 -59.3 0.0 0.0</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>106.89 -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 -37.5 -4.9 -15.1</div><div>105.00 -39.8 -4.7 -16.2</div><div>104.45 -45.6 -7.7 -19.5</div><div>103.44 -57.7 -22.9 -33.8</div><div>102.64 -68.9 -43.8 -60.1</div><div>102.44 -61.2 -22.0 -66.6</div><div>102.19 -53.2 1.0 -69.1</div><div>101.44 -39.7 41.3 -50.7</div><div>101.10 -38.8 45.9 -35.2</div><div>100.45 -45.7 31.4 -8.6</div><div>99.95 -51.6 0.0 0.0</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>106.89 -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 -37.5 -4.9 -15.1</div><div>105.00 -39.8 -4.7 -16.2</div><div>104.45 -45.6 -7.7 -19.5</div><div>103.44 -57.7 -22.9 -33.8</div><div>102.64 -68.9 -43.8 -60.1</div><div>102.44 -61.2 -22.0 -66.6</div><div>102.19 -53.2 1.0 -69.1</div><div>101.44 -39.7 41.3 -50.7</div><div>101.10 -38.8 45.9 -35.2</div></div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 113
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> 100.45   -45.7   31.4   -8.6  99.95   -51.6   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  106.20   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  105.24   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  102.64   0.0   0.0   0.0  102.44   0.0   0.0   0.0  102.19   0.0   0.0   0.0  101.44   0.0   0.0   0.0  101.10   0.0   0.0   0.0  100.45   0.0   0.0   0.0  99.95   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]  107.45   -10.9   -   -   -  107.40   -10.8   -   -   -  106.95   -10.0   -   -   -  106.89   -9.9   -   -   -  106.89   -9.9   -   -   -  106.84   -9.8   -   -   -  106.50   -9.3   -   -   -  106.45   -9.2   -   -   -  106.45   -9.2   -   -   -  106.40   -9.1   -   -   -  106.25   -8.9   -   -   -  106.20   -8.8   -   -   -  106.20   -8.8   -   -   -  106.15   -8.7   -   -   -  106.05   -8.5   -   -   -  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   4.75  105.55   -7.7   5.55   42.80   42.79  105.50   -7.6   5.55   42.34   47.55  105.50   -7.6   6.23   47.55   47.55  105.45   -7.5   6.23   47.02   52.49  105.45   -7.5   6.96   52.50   52.49  105.40   -7.5   6.96   51.90   57.44  105.29   -7.3   9.24   67.33   67.33  105.24   -7.2   9.24   66.54   72.27  105.24   -7.2   5.00   36.00   55.54  105.19   -7.1   5.00   35.61   58.01  105.05   -6.9   5.00   34.43   65.44  105.00   -6.8   5.00   34.03   67.91  105.00   -6.8   5.00   34.03   67.91  104.95   -6.7   5.00   33.62   69.21  104.50   -6.0   5.00   29.95   80.86  104.45   -5.9   5.00   29.54   82.16  104.45   -5.9   5.00   29.54   82.16  104.40   -5.8   5.00   29.13   83.45  103.49   -4.4   5.00   21.91   106.76  103.44   -4.3   5.00   21.51   108.05  103.44   -4.3   5.00   21.51   108.05  103.39   -4.2   5.00   21.12   109.35  102.69   -3.1   5.00   15.68   127.47  102.64   -3.1   5.00   15.30   128.77 </div> </div>		
Schnitt:	Anlage C1   Schnitt 3R	Seite Anlage C1/4
Kapitel:	1   LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 114
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

102.64	-3.1	50.00	152.98	231.70
102.59	-3.0	50.00	149.21	235.14
102.49	-2.8	50.00	141.72	242.03
102.44	-2.8	50.00	138.00	245.47
102.44	-2.8	50.00	138.00	245.47
102.39	-2.7	50.00	134.29	248.91
102.24	-2.5	50.00	123.25	259.24
102.19	-2.4	50.00	119.60	262.68
102.19	-2.4	50.00	119.60	262.68
102.14	-2.3	50.00	115.96	266.12
101.49	-1.4	50.00	69.93	310.87
101.44	-1.3	50.00	66.48	314.31
101.44	-1.3	50.00	66.48	314.31
101.39	-1.3	50.00	63.04	317.75
101.14	-0.9	50.00	45.98	334.97
101.10	-0.9	50.00	42.59	338.41
101.10	-0.9	50.00	42.59	338.41
101.05	-0.8	50.00	39.21	341.85
100.50	0.0	50.00	2.39	379.71
100.45	0.0	50.00	-0.94	383.16
100.45	0.0	50.00	-0.94	383.16
100.40	0.1	50.00	-4.26	386.60
100.00	0.6	50.00	-30.83	414.13
99.95	0.7	50.00	-34.15	417.58

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.07631994$   
Theoretischer Fußpunkt = 99.949 m

Einbindetiefe  $t_g = 6.05$  m  
Profillänge = 7.50 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$   
 $G_{v,k} = 141.92$  kN/m  
 $G'_{v,k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 37.14$  kN/m ( $E_{ah,k} = 219.51$  kN/m)  
 $B_{v,k} = 91.83$   
Summe  $V_{v,k} = 87.23$  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/m<sup>2</sup>  
(gemittelt von 100.83 bis 97.31 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung  

von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	105.24	0.00	S1: Auffüllungen
105.24	102.64	0.00	S2: Auelehm
102.64	99.95	55.00	s3: Flussskies, -sand

Mantelfläche bis 99.95 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 147.95 / 1.40 = 105.68$  kN/m  
 $R_{d,d} = R_{b,d} + R_{s1,d} = 970.73$  kN/m

Einwirkungen  
 $V_{d,d} = G_{d,d} - G'_{d,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 42.71 + 0.00 = 213.01$  kN/m  
 $\Rightarrow \mu = V_{d,d} / R_{d,d} = 213.01 / 970.73 = 0.22$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt:	Anlage C1	Schnitt 3R	Seite Anlage C1/5
Kapitel:	1	LF 1.1 (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>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: 01_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 = 7.50 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 C1 Schnitt 3R		Seite Anlage C1/6
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

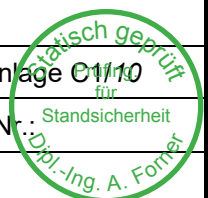
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																															
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																	
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																															
<div>Ausnutzungsgrad <math>\mu_e = 352.435 / 548.840 = 0.642</math> Bettungslager <math>B_{h,d} = 352.435 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 548.840 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.24</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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>105.24</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 (<math>[g+q],k</math>)</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>9.709</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>34.265</td><td>5.00</td><td>5.00</td></tr><tr><td>102.590</td><td>102.441</td><td>34.265</td><td>34.879</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.241</td><td>34.879</td><td>35.696</td><td>5.00</td><td>5.00</td></tr><tr><td>102.241</td><td>101.444</td><td>35.696</td><td>38.967</td><td>5.00</td><td>5.00</td></tr><tr><td>101.444</td><td>101.095</td><td>38.967</td><td>40.398</td><td>5.00</td><td>5.00</td></tr><tr><td>101.095</td><td>100.447</td><td>40.398</td><td>43.055</td><td>5.00</td><td>5.00</td></tr><tr><td>100.447</td><td>99.949</td><td>43.055</td><td>45.099</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>45.099</td><td>126.921</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><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>1</td><td>105.24</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>			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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]	[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	34.265	5.00	5.00	102.590	102.441	34.265	34.879	5.00	5.00	102.441	102.241	34.879	35.696	5.00	5.00	102.241	101.444	35.696	38.967	5.00	5.00	101.444	101.095	38.967	40.398	5.00	5.00	101.095	100.447	40.398	43.055	5.00	5.00	100.447	99.949	43.055	45.099	5.00	5.00	99.949	80.000	45.099	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	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	<div>statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	$q_c$	$c_{u,k}$																																																																																																																																																																																																																																																																																							
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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><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>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>-144.70</td></tr><tr><td>102.59</td><td>102.44</td><td>-144.70</td><td>-151.06</td></tr><tr><td>102.44</td><td>102.24</td><td>-151.06</td><td>-159.53</td></tr><tr><td>102.24</td><td>101.44</td><td>-159.53</td><td>-193.42</td></tr><tr><td>101.44</td><td>101.10</td><td>-193.42</td><td>-208.25</td></tr><tr><td>101.10</td><td>100.45</td><td>-208.25</td><td>-235.79</td></tr><tr><td>100.45</td><td>99.95</td><td>-235.79</td><td>-256.97</td></tr><tr><td>99.95</td><td>80.00</td><td>-256.97</td><td>-1104.84</td></tr></table> <div>Schnittgrößen (Bemessungswerte)</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>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>-21.8</td><td>-33.9</td></tr><tr><td>105.00</td><td>-48.6</td><td>-19.6</td><td>-38.8</td></tr><tr><td>104.92</td><td>-49.2</td><td>-19.1</td><td>-40.4</td></tr><tr><td>104.42</td><td>-53.4</td><td>-18.7</td><td>-49.6</td></tr><tr><td>103.43</td><td>-64.3</td><td>-31.3</td><td>-72.8</td></tr><tr><td>102.64</td><td>-75.6</td><td>-54.1</td><td>-105.9</td></tr><tr><td>102.59</td><td>-76.2</td><td>-55.3</td><td>-108.6</td></tr><tr><td>102.44</td><td>-66.6</td><td>-29.6</td><td>-115.0</td></tr><tr><td>102.24</td><td>-55.4</td><td>0.2</td><td>-117.8</td></tr><tr><td>101.44</td><td>-29.6</td><td>70.2</td><td>-84.6</td></tr><tr><td>101.10</td><td>-27.4</td><td>76.9</td><td>-58.5</td></tr><tr><td>100.45</td><td>-36.1</td><td>51.9</td><td>-14.1</td></tr><tr><td>99.95</td><td>-37.5</td><td>0.0</td><td>0.0</td></tr></table> <div>Schnittgrößen ([g+q+w],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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-12.1</td><td>-3.8</td><td>-0.9</td></tr><tr><td>106.45</td><td>-22.7</td><td>-10.3</td><td>-3.8</td></tr><tr><td>106.20</td><td>-29.6</td><td>-16.1</td><td>-7.2</td></tr><tr><td>106.00</td><td>-35.3</td><td>-21.5</td><td>-10.9</td></tr><tr><td>105.68</td><td>-40.4</td><td>-26.7</td><td>-18.8</td></tr><tr><td>105.50</td><td>-41.4</td><td>-25.6</td><td>-23.6</td></tr><tr><td>105.45</td><td>-41.5</td><td>-24.7</td><td>-24.9</td></tr><tr><td>105.24</td><td>-40.9</td><td>-19.0</td><td>-29.5</td></tr><tr><td>105.00</td><td>-42.3</td><td>-17.1</td><td>-33.8</td></tr><tr><td>104.92</td><td>-42.8</td><td>-16.6</td><td>-35.2</td></tr><tr><td>104.42</td><td>-46.4</td><td>-16.2</td><td>-43.2</td></tr><tr><td>103.43</td><td>-56.0</td><td>-27.1</td><td>-63.3</td></tr><tr><td>102.64</td><td>-65.7</td><td>-46.9</td><td>-92.0</td></tr><tr><td>102.59</td><td>-66.3</td><td>-47.8</td><td>-94.3</td></tr><tr><td>102.44</td><td>-57.9</td><td>-25.6</td><td>-99.8</td></tr><tr><td>102.24</td><td>-48.2</td><td>0.3</td><td>-102.2</td></tr></table>			von	bis	oben	unten	[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	-144.70	102.59	102.44	-144.70	-151.06	102.44	102.24	-151.06	-159.53	102.24	101.44	-159.53	-193.42	101.44	101.10	-193.42	-208.25	101.10	100.45	-208.25	-235.79	100.45	99.95	-235.79	-256.97	99.95	80.00	-256.97	-1104.84	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	-21.8	-33.9	105.00	-48.6	-19.6	-38.8	104.92	-49.2	-19.1	-40.4	104.42	-53.4	-18.7	-49.6	103.43	-64.3	-31.3	-72.8	102.64	-75.6	-54.1	-105.9	102.59	-76.2	-55.3	-108.6	102.44	-66.6	-29.6	-115.0	102.24	-55.4	0.2	-117.8	101.44	-29.6	70.2	-84.6	101.10	-27.4	76.9	-58.5	100.45	-36.1	51.9	-14.1	99.95	-37.5	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	106.89	-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	105.45	-41.5	-24.7	-24.9	105.24	-40.9	-19.0	-29.5	105.00	-42.3	-17.1	-33.8	104.92	-42.8	-16.6	-35.2	104.42	-46.4	-16.2	-43.2	103.43	-56.0	-27.1	-63.3	102.64	-65.7	-46.9	-92.0	102.59	-66.3	-47.8	-94.3	102.44	-57.9	-25.6	-99.8	102.24	-48.2	0.3	-102.2
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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>101.44 -25.8 61.0 -73.4</div><div>101.10 -23.9 66.8 -50.7</div><div>100.45 -31.4 45.1 -12.3</div><div>99.95 -32.6 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><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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>-12.1</div><div>-3.8</div><div>-0.9</div></div><div><div>106.45</div><div>-22.7</div><div>-10.3</div><div>-3.8</div></div><div><div>106.20</div><div>-29.6</div><div>-16.1</div><div>-7.2</div></div><div><div>106.00</div><div>-35.3</div><div>-21.5</div><div>-10.9</div></div><div><div>105.68</div><div>-40.4</div><div>-26.7</div><div>-18.8</div></div><div><div>105.50</div><div>-41.4</div><div>-25.6</div><div>-23.6</div></div><div><div>105.45</div><div>-41.5</div><div>-24.7</div><div>-24.9</div></div><div><div>105.24</div><div>-40.9</div><div>-19.0</div><div>-29.5</div></div><div><div>105.00</div><div>-42.3</div><div>-17.1</div><div>-33.8</div></div><div><div>104.92</div><div>-42.8</div><div>-16.6</div><div>-35.2</div></div><div><div>104.42</div><div>-46.4</div><div>-16.2</div><div>-43.2</div></div><div><div>103.43</div><div>-56.0</div><div>-27.1</div><div>-63.3</div></div><div><div>102.64</div><div>-65.7</div><div>-46.9</div><div>-92.0</div></div><div><div>102.59</div><div>-66.3</div><div>-47.8</div><div>-94.3</div></div><div><div>102.44</div><div>-57.9</div><div>-25.6</div><div>-99.8</div></div><div><div>102.24</div><div>-48.2</div><div>0.3</div><div>-102.2</div></div><div><div>101.44</div><div>-25.8</div><div>61.0</div><div>-73.4</div></div><div><div>101.10</div><div>-23.9</div><div>66.8</div><div>-50.7</div></div><div><div>100.45</div><div>-31.4</div><div>45.1</div><div>-12.3</div></div><div><div>99.95</div><div>-32.6</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><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>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>105.68</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>104.92</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.42</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.43</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>102.59</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>102.24</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>101.10</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>99.95</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>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-15.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-15.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-14.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-14.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-14.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-13.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-13.0</div><div>-</div><div>-</div><div>-</div></div></div></div></div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/9
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 19.06.2024
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
106.45	-13.0	-	-	-
106.40	-12.8	-	-	-
106.25	-12.5	-	-	-
106.20	-12.3	-	-	-
106.20	-12.3	-	-	-
106.15	-12.2	-	-	-
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	-11.7	0.00	0.00	5.07
105.73	-11.2	2.26	25.37	25.37
105.68	-11.1	2.26	25.08	30.44
105.68	-11.1	2.74	30.44	30.44
105.63	-11.0	2.74	30.15	34.72
105.54	-10.8	4.02	43.27	43.27
105.50	-10.7	4.02	42.84	47.55
105.50	-10.7	4.46	47.55	47.55
105.45	-10.5	4.46	46.99	52.49
105.45	-10.5	4.99	52.50	52.49
105.40	-10.4	4.99	51.87	57.44
105.29	-10.2	6.63	67.33	67.33
105.24	-10.0	6.63	66.50	72.27
105.24	-10.0	5.00	50.15	55.54
105.19	-9.9	5.00	49.57	58.01
105.05	-9.6	5.00	47.84	65.44
105.00	-9.5	5.00	47.27	67.91
105.00	-9.5	5.00	47.27	67.91
104.96	-9.4	5.00	46.76	69.01
104.96	-9.4	5.00	46.76	69.01
104.92	-9.3	5.00	46.26	70.10
104.92	-9.3	5.00	46.26	70.10
104.87	-9.1	5.00	45.67	71.38
104.47	-8.2	5.00	40.98	81.58
104.42	-8.1	5.00	40.39	82.86
104.42	-8.1	5.00	40.39	82.86
104.37	-8.0	5.00	39.81	84.13
103.48	-5.9	5.00	29.52	107.09
103.43	-5.8	5.00	28.96	108.36
103.43	-5.8	5.00	28.96	108.36
103.38	-5.7	5.00	28.40	109.64
102.69	-4.1	5.00	20.72	127.49
102.64	-4.0	5.00	20.18	128.77
102.64	-4.0	5.00	20.18	231.70
102.59	-3.9	5.00	19.64	235.14
102.59	-3.9	50.00	196.43	235.14
102.54	-3.8	50.00	191.07	238.59
102.49	-3.7	50.00	185.73	242.03
102.44	-3.6	50.00	180.41	245.47
102.44	-3.6	50.00	180.41	245.47
102.39	-3.5	50.00	175.12	248.91
102.29	-3.3	50.00	164.58	255.80
102.24	-3.2	50.00	159.35	259.24
102.24	-3.2	50.00	159.35	259.24
102.19	-3.1	50.00	154.14	262.68
101.49	-1.7	50.00	83.31	310.87
101.44	-1.6	50.00	78.39	314.31
101.44	-1.6	50.00	78.39	314.31
101.39	-1.5	50.00	73.49	317.75
101.14	-1.0	50.00	49.17	334.97
101.10	-0.9	50.00	44.34	338.41
101.10	-0.9	50.00	44.34	338.41
101.05	-0.8	50.00	39.52	341.85
100.50	0.3	50.00	-12.94	379.71
100.45	0.4	50.00	-17.68	383.16
100.45	0.4	50.00	-17.68	383.16
100.40	0.4	50.00	-22.42	386.60
100.00	1.2	50.00	-60.27	414.13
99.95	1.3	50.00	-65.00	417.58
Schnitt: Anlage C1 Schnitt 3R				Seite Anlage C1/10
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.:
Vorgang: Genehmigungsstatik			Projekt-Nr.: 2004-0025	



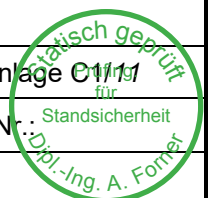
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10873932 Theoretischer Fußpunkt = 99.949 m</div> <div>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 141.92 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 43.40 kN/m (Eah,k = 256.58 kN/m) Bv,k = 108.77 Summe V,k = 76.55 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 100.83 bis 97.31 m) ==&gt; 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>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>99.95</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 147.95 / 1.40 = 105.68 kN/m R,d = Rb,d + R,s1,d = 970.73 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 170.31 - 0.00 + 49.91 + 0.00 = 220.22 kN/m ==&gt; µ = V,d / R,d = 220.22 / 970.73 = 0.23</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			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	99.95	55.00	s3: Flusskies, -sand
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	99.95	55.00	s3: Flusskies, -sand															
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1111																
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>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 3 Datei: 02_BS 3_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.00 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 <math>\mu_e = 204.326 / 204.335 = 1.000</math> Bettungslager <math>B_{h,d} = 204.326</math> kN/m Erdwiderstand <math>E_{ph,d} = 204.335</math> kN/m</div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/12
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1112
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>Anker und Steifen</div> <div>N<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-107.47</td><td>-93.10</td><td>-93.10</td><td>-7.97</td><td>6.900E+4</td><td>2.100E+7</td><td>-118.71</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-11.5</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-11.7</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-11.7</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-11.8</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.0</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-12.2</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-12.3</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-12.6</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-107.47</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-107.47</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\00_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>-0.0100</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>m',k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>27.906</td><td>27.906</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></tr><tr><td>106.886</td><td>106.450</td><td>27.906</td><td>27.906</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></tr><tr><td>106.198</td><td>105.500</td><td>27.906</td><td>27.906</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></tr><tr><td>105.450</td><td>105.240</td><td>27.906</td><td>27.906</td><td>0.50</td></tr><tr><td>105.240</td><td>105.000</td><td>27.906</td><td>27.906</td><td>2.60</td></tr><tr><td>105.000</td><td>104.400</td><td>23.255</td><td>23.255</td><td>5.00</td></tr><tr><td>104.400</td><td>104.150</td><td>23.255</td><td>23.255</td><td>5.00</td></tr><tr><td>104.150</td><td>103.400</td><td>23.255</td><td>23.255</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-107.47	-93.10	-93.10	-7.97	6.900E+4	2.100E+7	-118.71	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-11.5	0.0	-107.47	0.00	0.00	-0.90	106.95	-11.7	0.0	-107.47	0.00	0.00	-0.90	106.95	-11.7	0.0	-107.47	0.00	0.00	-0.80	106.95	-11.8	0.0	-107.47	0.00	0.00	-0.70	106.95	-12.0	0.0	-107.47	0.00	0.00	-0.60	106.95	-12.2	0.0	-107.47	0.00	0.00	-0.50	106.95	-12.3	0.0	-107.47	0.00	0.00	-0.40	106.95	-12.5	0.0	-107.47	0.00	0.00	-0.30	106.95	-12.6	0.0	-107.47	0.00	0.00	-0.20	106.95	-12.8	0.0	-107.47	0.00	0.00	-0.10	106.95	-12.9	0.0	-107.47	0.00	0.00	0.00	106.95	-13.1	0.0	-107.47	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0100	Schicht	UK	γ <sub>m,k</sub>	γ <sub>m',k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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]	107.450	106.950	27.906	27.906	0.00	106.950	106.886	27.906	27.906	0.00	106.886	106.450	27.906	27.906	0.00	106.450	106.198	27.906	27.906	0.00	106.198	105.500	27.906	27.906	0.00	105.500	105.450	27.906	27.906	0.00	105.450	105.240	27.906	27.906	0.50	105.240	105.000	27.906	27.906	2.60	105.000	104.400	23.255	23.255	5.00	104.400	104.150	23.255	23.255	5.00	104.150	103.400	23.255	23.255	5.00	Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/13	
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																													
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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>33.736</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>33.736</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>39.480</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.480</td><td>43.584</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>80.000</td><td>43.584</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)</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>102.64</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.81</td></tr><tr><td>99.45</td><td>80.00</td><td>-131.81</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>-107.5</td></tr><tr><td>106.95</td><td>-16.7</td><td>91.4</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.9</td><td>89.4</td><td>1.8</td><td></td></tr><tr><td>106.45</td><td>-33.4</td><td>75.4</td><td>37.7</td><td></td></tr><tr><td>106.20</td><td>-41.9</td><td>67.3</td><td>55.7</td><td></td></tr><tr><td>105.50</td><td>-65.2</td><td>44.9</td><td>94.8</td><td></td></tr><tr><td>105.45</td><td>-66.9</td><td>43.3</td><td>97.0</td><td></td></tr><tr><td>105.24</td><td>-73.9</td><td>36.1</td><td>105.4</td><td></td></tr><tr><td>105.00</td><td>-81.2</td><td>27.3</td><td>113.0</td><td></td></tr><tr><td>104.40</td><td>-98.6</td><td>7.7</td><td>123.5</td><td></td></tr><tr><td>104.15</td><td>-105.8</td><td>-0.5</td><td>124.4</td><td></td></tr><tr><td>103.40</td><td>-127.5</td><td>-25.0</td><td>114.8</td><td></td></tr><tr><td>102.64</td><td>-149.5</td><td>-49.9</td><td>86.3</td><td></td></tr><tr><td>102.55</td><td>-152.4</td><td>-52.9</td><td>81.7</td><td></td></tr><tr><td>102.45</td><td>-155.2</td><td>-56.9</td><td>76.2</td><td></td></tr><tr><td>101.85</td><td>-161.2</td><td>-65.1</td><td>38.3</td><td></td></tr><tr><td>101.45</td><td>-159.0</td><td>-55.9</td><td>13.7</td><td></td></tr><tr><td>100.45</td><td>-136.4</td><td>7.0</td><td>-12.4</td><td></td></tr><tr><td>99.45</td><td>-139.7</td><td>0.0</td><td>0.0</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></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>-14.5</td><td>-14.0</td><td>-3.5</td><td>-93.1</td></tr><tr><td>106.95</td><td>-14.5</td><td>79.1</td><td>-3.5</td><td></td></tr><tr><td>106.89</td><td>-16.4</td><td>77.4</td><td>1.5</td><td></td></tr><tr><td>106.45</td><td>-29.1</td><td>65.2</td><td>32.6</td><td></td></tr><tr><td>106.20</td><td>-36.4</td><td>58.2</td><td>48.2</td><td></td></tr><tr><td>105.50</td><td>-56.7</td><td>38.7</td><td>81.9</td><td></td></tr><tr><td>105.45</td><td>-58.2</td><td>37.3</td><td>83.8</td><td></td></tr><tr><td>105.24</td><td>-64.3</td><td>31.1</td><td>91.0</td><td></td></tr><tr><td>105.00</td><td>-70.6</td><td>23.5</td><td>97.6</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	33.736	5.00	5.00	101.850	101.450	33.736	35.377	5.00	5.00	101.450	100.449	35.377	39.480	5.00	5.00	100.449	99.449	39.480	43.584	5.00	5.00	99.449	80.000	43.584	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	-89.29	100.45	99.45	-89.29	-131.81	99.45	80.00	-131.81	-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	-107.5	106.95	-16.7	91.4	-4.0		106.89	-18.9	89.4	1.8		106.45	-33.4	75.4	37.7		106.20	-41.9	67.3	55.7		105.50	-65.2	44.9	94.8		105.45	-66.9	43.3	97.0		105.24	-73.9	36.1	105.4		105.00	-81.2	27.3	113.0		104.40	-98.6	7.7	123.5		104.15	-105.8	-0.5	124.4		103.40	-127.5	-25.0	114.8		102.64	-149.5	-49.9	86.3		102.55	-152.4	-52.9	81.7		102.45	-155.2	-56.9	76.2		101.85	-161.2	-65.1	38.3		101.45	-159.0	-55.9	13.7		100.45	-136.4	7.0	-12.4		99.45	-139.7	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		106.95	-14.5	-14.0	-3.5	-93.1	106.95	-14.5	79.1	-3.5		106.89	-16.4	77.4	1.5		106.45	-29.1	65.2	32.6		106.20	-36.4	58.2	48.2		105.50	-56.7	38.7	81.9		105.45	-58.2	37.3	83.8		105.24	-64.3	31.1	91.0		105.00	-70.6	23.5	97.6	
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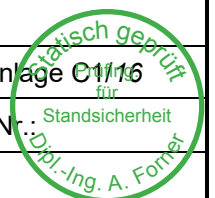
Dipl.-Ing. A. Forner



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>104.40</div><div>-85.7</div><div>6.5</div><div>106.6</div></div><div><div>104.15</div><div>-92.0</div><div>-0.5</div><div>107.3</div></div><div><div>103.40</div><div>-110.9</div><div>-21.7</div><div>99.0</div></div><div><div>102.64</div><div>-130.0</div><div>-43.2</div><div>74.3</div></div><div><div>102.55</div><div>-132.5</div><div>-45.7</div><div>70.3</div></div><div><div>102.45</div><div>-134.9</div><div>-49.2</div><div>65.6</div></div><div><div>101.85</div><div>-140.2</div><div>-56.3</div><div>32.8</div></div><div><div>101.45</div><div>-138.2</div><div>-48.2</div><div>11.5</div></div><div><div>100.45</div><div>-118.6</div><div>6.3</div><div>-10.8</div></div><div><div>99.45</div><div>-121.5</div><div>0.0</div><div>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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-14.5</div><div>-14.0</div><div>-3.5</div><div>-93.1</div></div><div><div>106.95</div><div>-14.5</div><div>79.1</div><div>-3.5</div><div></div></div><div><div>106.89</div><div>-16.4</div><div>77.4</div><div>1.5</div><div></div></div><div><div>106.45</div><div>-29.1</div><div>65.2</div><div>32.6</div><div></div></div><div><div>106.20</div><div>-36.4</div><div>58.2</div><div>48.2</div><div></div></div><div><div>105.50</div><div>-56.7</div><div>38.7</div><div>81.9</div><div></div></div><div><div>105.45</div><div>-58.2</div><div>37.3</div><div>83.8</div><div></div></div><div><div>105.24</div><div>-64.3</div><div>31.1</div><div>91.0</div><div></div></div><div><div>105.00</div><div>-70.6</div><div>23.5</div><div>97.6</div><div></div></div><div><div>104.40</div><div>-85.7</div><div>6.5</div><div>106.6</div><div></div></div><div><div>104.15</div><div>-92.0</div><div>-0.5</div><div>107.3</div><div></div></div><div><div>103.40</div><div>-110.9</div><div>-21.7</div><div>99.0</div><div></div></div><div><div>102.64</div><div>-130.0</div><div>-43.2</div><div>74.3</div><div></div></div><div><div>102.55</div><div>-132.5</div><div>-45.7</div><div>70.3</div><div></div></div><div><div>102.45</div><div>-134.9</div><div>-49.2</div><div>65.6</div><div></div></div><div><div>101.85</div><div>-140.2</div><div>-56.3</div><div>32.8</div><div></div></div><div><div>101.45</div><div>-138.2</div><div>-48.2</div><div>11.5</div><div></div></div><div><div>100.45</div><div>-118.6</div><div>6.3</div><div>-10.8</div><div></div></div><div><div>99.45</div><div>-121.5</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><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>106.20</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>105.45</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>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.40</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>102.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.45</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>107.45</div><div>-11.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-11.9</div><div>-</div><div>-</div><div>-</div></div><div><div>107.00</div><div>-11.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-11.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-11.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-10.9</div><div>-</div><div>-</div><div>-</div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage C1 Schnitt 3R</td><td colspan="2">Seite Anlage C1/15</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">3 LF 2.1 (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 C1 Schnitt 3R		Seite Anlage C1/15		Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
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Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																			



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																							
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<p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10103444 Theoretischer Fußpunkt = 99.449 m</p> <p>Einbindetiefe tg = 3.10 m Profillänge = 8.00 m</p>			106.45	-10.8	-	-	-	106.45	-10.8	-	-	-	106.40	-10.8	-	-	-	106.25	-10.6	-	-	-	106.20	-10.5	-	-	-	106.20	-10.5	-	-	-	106.15	-10.5	-	-	-	105.55	-9.8	-	-	-	105.50	-9.7	-	-	-	105.50	-9.7	-	-	-	105.45	-9.7	-	-	-	105.45	-9.7	-	-	-	105.40	-9.6	-	-	-	105.29	-9.5	-	-	-	105.24	-9.4	-	-	-	105.24	-9.4	-	-	-	105.19	-9.3	-	-	-	105.05	-9.2	-	-	-	105.00	-9.1	-	-	-	105.00	-9.1	-	-	-	104.95	-9.0	-	-	-	104.45	-8.4	-	-	-	104.40	-8.3	-	-	-	104.40	-8.3	-	-	-	104.35	-8.2	-	-	-	104.20	-8.0	-	-	-	104.15	-7.9	-	-	-	104.15	-7.9	-	-	-	104.10	-7.9	-	-	-	103.45	-6.9	-	-	-	103.40	-6.8	-	-	-	103.40	-6.8	-	-	-	103.35	-6.7	-	-	-	102.69	-5.6	-	-	-	102.64	-5.5	-	-	-	102.64	-5.5	-	-	-	102.59	-5.5	-	-	-	102.59	-5.5	-	-	-	102.55	-5.4	0.00	0.00	0.00	102.55	-5.4	0.00	0.00	0.00	102.50	-5.3	0.00	0.00	3.45	102.50	-5.3	0.65	3.45	3.45	102.45	-5.2	0.65	3.40	6.91	102.45	-5.2	1.32	6.91	6.91	102.40	-5.1	1.32	6.80	10.36	101.90	-4.3	10.53	44.91	44.91	101.85	-4.2	10.53	43.98	48.37	101.85	-4.2	11.58	48.37	48.37	101.80	-4.1	11.58	47.34	51.82	101.50	-3.6	20.39	72.55	72.55	101.45	-3.5	20.39	70.74	76.00	101.45	-3.5	21.91	76.01	76.00	101.40	-3.4	21.91	74.06	79.46	100.50	-1.8	50.00	88.88	141.64	100.45	-1.7	50.00	84.45	145.10	100.45	-1.7	50.00	84.45	145.10	100.40	-1.6	50.00	80.02	148.55	99.50	0.0	50.00	0.54	210.74	99.45	0.1	50.00	-3.87	214.19
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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								
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{,k} = 151.38 \text{ kN/m}</math></p> <p><math>G'_{,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 41.37 \text{ kN/m}</math> (<math>E_{ah,k} = 240.79 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 70.27</math></p> <p>Summe <math>V_{,k} = 122.48 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 100.33 bis 96.81 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr><tr><td>102.55</td><td>99.45</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.45 m = <math>1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 170.50 / 1.40 = 121.79 \text{ kN/m}</math></p> <p><math>R_{,d} = R_{b,d} + R_{s1,d} = 986.83 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 181.66 - 0.00 + 47.57 + 0.00 = 229.23 \text{ kN/m}</math></p> <p><math>\implies \mu = V_{,d} / R_{,d} = 229.23 / 986.83 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	99.45	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	99.45	55.00	s3: Flussskies, -sand							
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/17								
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. Forster



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: 03_BS 3_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 = 8.50 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 = 258.936 / 260.454 = 0.994 Bettungslager Bh,d = 258.936 kN/m Erdwiderstand Eph,d = 260.454 kN/m</div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/18
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>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>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>106.95</td><td>0.00</td><td>1.00</td><td>-129.17</td><td>-111.96</td><td>-111.96</td><td>-8.28</td><td>6.900E+4</td><td>2.100E+7</td><td>-142.75</td></tr></table> <div>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> <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>-1.00</td><td>106.95</td><td>-11.5</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-11.7</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-11.7</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-11.9</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.1</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-12.3</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.0</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.2</td><td>0.0</td><td>-129.17</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-13.4</td><td>0.1</td><td>-129.17</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\00_BS 3_LF1.1 (ohne Lasten).vrb</div> <div>eingelassen.</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>-0.0100</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(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 &gt; 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>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></table>								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	-129.17	-111.96	-111.96	-8.28	6.900E+4	2.100E+7	-142.75	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	-11.5	0.0	-129.17	0.00	0.00	-0.90	106.95	-11.7	0.0	-129.17	0.00	0.00	-0.90	106.95	-11.7	0.0	-129.17	0.00	0.00	-0.80	106.95	-11.9	0.0	-129.17	0.00	0.00	-0.70	106.95	-12.1	0.0	-129.17	0.00	0.00	-0.60	106.95	-12.3	0.0	-129.17	0.00	0.00	-0.50	106.95	-12.5	0.0	-129.17	0.00	0.00	-0.40	106.95	-12.7	0.0	-129.17	0.00	0.00	-0.30	106.95	-12.8	0.0	-129.17	0.00	0.00	-0.20	106.95	-13.0	0.0	-129.17	0.00	0.00	-0.10	106.95	-13.2	0.0	-129.17	0.00	0.00	0.00	106.95	-13.4	0.1	-129.17	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0100	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	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	<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	Nw,k	EA	EI	N,d'																																																																																																																																																																																																																																																																																																															
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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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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	
105.000	104.915	28.411	28.411	5.00	5.00
104.915	104.450	28.411	28.411	5.00	5.00
104.450	104.200	28.411	28.411	5.00	5.00
104.200	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	98.949	47.149	49.201	5.00	5.00
98.949	80.000	49.201	126.921	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] 102.64 102.55 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 -89.29 100.45 99.45 -89.29 -131.80 99.45 98.95 -131.80 -153.06 98.95 80.00 -153.06 -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 0.0 107.45 -0.1 -0.1 0.0 106.95 -18.0 -19.6 -4.9 -129.2 106.95 -18.0 109.6 -4.9 106.89 -20.3 107.1 2.0 106.45 -36.0 90.0 45.0 106.20 -45.1 80.1 66.4 105.68 -63.8 59.8 102.6 105.50 -70.3 52.7 112.7 105.45 -72.1 50.7 115.3 105.24 -79.6 42.1 125.1 105.00 -87.4 31.6 134.0 104.92 -90.0 28.3 136.5 104.45 -104.2 10.3 145.5 104.20 -111.8 0.7 146.9 103.40 -136.2 -30.3 135.0 102.64 -159.4 -59.7 100.9 102.55 -162.5 -63.1 95.3 102.45 -165.4 -67.5 88.8 101.85 -171.4 -78.2 43.7 101.45 -169.2 -70.6 13.6 100.45 -142.7 -2.0 -27.9 99.45 -130.8 25.4 -7.4 98.95 -138.7 0.0 0.0					
Schnitt: Anlage C1 Schnitt 3R				Seite Anlage C1/20	
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik				Projekt-Nr.: 2004-0025	





Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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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>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.73</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.68</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.68</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.63</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.54</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.86</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.6</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>103.45</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.69</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.64</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr></table>						104.45	0.0	0.0	0.0	104.20	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	98.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.1	-	-	-	107.45	-12.1	-	-	-	107.45	-12.1	-	-	-	107.40	-12.1	-	-	-	107.00	-11.7	-	-	-	106.95	-11.7	-	-	-	106.95	-11.7	-	-	-	106.89	-11.6	-	-	-	106.89	-11.6	-	-	-	106.84	-11.5	-	-	-	106.50	-11.2	-	-	-	106.45	-11.2	-	-	-	106.45	-11.2	-	-	-	106.40	-11.1	-	-	-	106.25	-11.0	-	-	-	106.20	-10.9	-	-	-	106.20	-10.9	-	-	-	106.15	-10.9	-	-	-	105.73	-10.4	-	-	-	105.68	-10.4	-	-	-	105.68	-10.4	-	-	-	105.63	-10.3	-	-	-	105.54	-10.2	-	-	-	105.50	-10.2	-	-	-	105.50	-10.2	-	-	-	105.45	-10.1	-	-	-	105.45	-10.1	-	-	-	105.40	-10.1	-	-	-	105.29	-9.9	-	-	-	105.24	-9.9	-	-	-	105.24	-9.9	-	-	-	105.19	-9.8	-	-	-	105.05	-9.6	-	-	-	105.00	-9.6	-	-	-	105.00	-9.6	-	-	-	104.95	-9.5	-	-	-	104.95	-9.5	-	-	-	104.92	-9.5	-	-	-	104.92	-9.5	-	-	-	104.86	-9.4	-	-	-	104.50	-9.0	-	-	-	104.45	-8.9	-	-	-	104.45	-8.9	-	-	-	104.40	-8.8	-	-	-	104.25	-8.6	-	-	-	104.20	-8.6	-	-	-	104.20	-8.6	-	-	-	104.15	-8.5	-	-	-	103.45	-7.5	-	-	-	103.40	-7.4	-	-	-	103.40	-7.4	-	-	-	103.35	-7.3	-	-	-	102.69	-6.3	-	-	-	102.64	-6.2	-	-	-	102.64	-6.2	-	-	-
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104.86	-9.4	-	-	-																																																																																																																																																																																																																																																																																																																																										
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104.15	-8.5	-	-	-																																																																																																																																																																																																																																																																																																																																										
103.45	-7.5	-	-	-																																																																																																																																																																																																																																																																																																																																										
103.40	-7.4	-	-	-																																																																																																																																																																																																																																																																																																																																										
103.40	-7.4	-	-	-																																																																																																																																																																																																																																																																																																																																										
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102.69	-6.3	-	-	-																																																																																																																																																																																																																																																																																																																																										
102.64	-6.2	-	-	-																																																																																																																																																																																																																																																																																																																																										
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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																																																																																																																																							
<table><tr><td>102.59</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.59</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-5.9</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-5.9</td><td>0.58</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-5.9</td><td>0.58</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-5.9</td><td>1.18</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-5.8</td><td>1.18</td><td>6.81</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.9</td><td>9.15</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-4.8</td><td>9.15</td><td>44.11</td><td>48.36</td></tr><tr><td>101.85</td><td>-4.8</td><td>10.04</td><td>48.37</td><td>48.36</td></tr><tr><td>101.80</td><td>-4.7</td><td>10.04</td><td>47.48</td><td>51.82</td></tr><tr><td>101.50</td><td>-4.2</td><td>17.27</td><td>72.55</td><td>72.54</td></tr><tr><td>101.45</td><td>-4.1</td><td>17.27</td><td>71.02</td><td>76.00</td></tr><tr><td>101.45</td><td>-4.1</td><td>18.48</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-4.0</td><td>18.48</td><td>74.37</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.4</td><td>50.00</td><td>121.60</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.3</td><td>50.00</td><td>117.21</td><td>145.09</td></tr><tr><td>100.45</td><td>-2.3</td><td>50.00</td><td>117.21</td><td>145.09</td></tr><tr><td>100.40</td><td>-2.3</td><td>50.00</td><td>112.83</td><td>148.54</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>34.77</td><td>210.72</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.47</td><td>214.18</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.47</td><td>214.18</td></tr><tr><td>99.40</td><td>-0.5</td><td>50.00</td><td>26.16</td><td>217.63</td></tr><tr><td>99.00</td><td>0.2</td><td>50.00</td><td>-8.27</td><td>245.27</td></tr><tr><td>98.95</td><td>0.3</td><td>50.00</td><td>-12.57</td><td>248.72</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09856902 Theoretischer Fußpunkt = 98.949 m</p> <p>Einbindetiefe tg = 3.60 m Profillänge = 8.50 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 160.84 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 52.78 kN/m (Eah,k = 303.73 kN/m) Bv,k = 89.11 Summe V,k = 124.51 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 99.83 bis 96.31 m) ==&gt; 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 98.95 55.00 s3: Flussskies, -sand Mantelfläche bis 98.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 198.00 / 1.40 = 141.43 kN/m Rd = Rb,d + Rs1,d = 1006.48 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 193.01 - 0.00 + 60.69 + 0.00 = 253.71 kN/m ==&gt; µ = V,d / Rd = 253.71 / 1006.48 = 0.25</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.59	-6.1	-	-	-	102.59	-6.1	-	-	-	102.55	-6.0	0.00	0.00	0.00	102.55	-6.0	0.00	0.00	0.00	102.50	-5.9	0.00	0.00	3.45	102.50	-5.9	0.58	3.45	3.45	102.45	-5.9	0.58	3.41	6.91	102.45	-5.9	1.18	6.91	6.91	102.40	-5.8	1.18	6.81	10.36	101.90	-4.9	9.15	44.91	44.91	101.85	-4.8	9.15	44.11	48.36	101.85	-4.8	10.04	48.37	48.36	101.80	-4.7	10.04	47.48	51.82	101.50	-4.2	17.27	72.55	72.54	101.45	-4.1	17.27	71.02	76.00	101.45	-4.1	18.48	76.00	76.00	101.40	-4.0	18.48	74.37	79.45	100.50	-2.4	50.00	121.60	141.63	100.45	-2.3	50.00	117.21	145.09	100.45	-2.3	50.00	117.21	145.09	100.40	-2.3	50.00	112.83	148.54	99.50	-0.7	50.00	34.77	210.72	99.45	-0.6	50.00	30.47	214.18	99.45	-0.6	50.00	30.47	214.18	99.40	-0.5	50.00	26.16	217.63	99.00	0.2	50.00	-8.27	245.27	98.95	0.3	50.00	-12.57	248.72
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99.00	0.2	50.00	-8.27	245.27																																																																																																																																					
98.95	0.3	50.00	-12.57	248.72																																																																																																																																					
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/23																																																																																																																																							
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 23																																																																																																																																							
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>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: 04_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 = 8.80 m</div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/24
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  $\mu_e = 61.391 / 61.421 = 1.000$   
Bettungslager  $B_{h,d} = 61.391 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 61.421 \text{ kN/m}$

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	-420.63	-352.33	-262.87	-50.78	3.900E+7	2.100E+7	-469.35 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	-8.4	0.0	-421.14	0.00	0.00
-7.47	103.72	-8.4	0.0	-421.14	0.00	0.00
-7.47	103.72	-8.4	0.0	-421.14	0.00	0.00
-6.64	103.72	-8.4	0.0	-421.14	0.00	0.00
-5.81	103.72	-8.4	0.0	-421.14	0.00	0.00
-4.98	103.72	-8.4	0.0	-421.14	0.00	0.00
-4.15	103.72	-8.4	0.0	-421.14	0.00	0.00
-3.32	103.72	-8.4	0.0	-421.14	0.00	0.00
-2.49	103.72	-8.5	0.0	-421.14	0.00	0.00
-1.66	103.72	-8.5	0.0	-421.14	0.00	0.00
-0.83	103.72	-8.5	0.1	-421.14	0.00	0.00
0.00	103.72	-8.5	0.1	-421.14	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0073

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

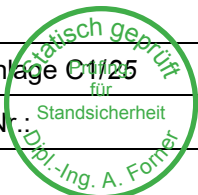
Beziehung:  $(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0$   
Faktor [-] = 0.50  
Ersatzerddruck-Beiwert mit  $\phi_i = 40^\circ$   
Ersatzerddruck-Beiwert  $k_{ah}$  wird angewendet, wenn Kohäsion  $< 0.0$ .  
Ersatzerddruck-Beiwert  $k_{ah}$  wird nur auf ständige Lasten angewendet. 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

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	108.698	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

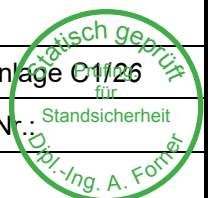
Schnitt:	Anlage C1	Schnitt 3R	Seite Anlage C1/25
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																										
Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																														
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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>37.918</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.918</td><td>42.022</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>100.499</td><td>42.022</td><td>42.842</td><td>0.00</td><td>0.00</td></tr><tr><td>100.499</td><td>99.899</td><td>42.842</td><td>45.304</td><td>0.00</td><td>0.00</td></tr><tr><td>99.899</td><td>80.000</td><td>45.304</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>-78.67</td></tr><tr><td>100.70</td><td>100.50</td><td>-78.67</td><td>-87.17</td></tr><tr><td>100.50</td><td>99.90</td><td>-87.17</td><td>-112.68</td></tr><tr><td>99.90</td><td>80.00</td><td>-112.68</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>-421.1</td></tr><tr><td>103.72</td><td>-223.6</td><td>218.0</td><td>-470.6</td><td></td></tr><tr><td>103.65</td><td>-226.0</td><td>213.1</td><td>-455.5</td><td></td></tr><tr><td>102.64</td><td>-261.7</td><td>133.5</td><td>-279.0</td><td></td></tr><tr><td>102.55</td><td>-265.1</td><td>126.8</td><td>-267.3</td><td></td></tr><tr><td>101.70</td><td>-274.0</td><td>117.2</td><td>-167.1</td><td></td></tr><tr><td>100.70</td><td>-280.6</td><td>103.7</td><td>-47.1</td><td></td></tr><tr><td>100.50</td><td>-281.7</td><td>85.7</td><td>-28.1</td><td></td></tr><tr><td>99.90</td><td>-272.8</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	37.918	0.00	0.00	101.700	100.699	37.918	42.022	0.00	0.00	100.699	100.499	42.022	42.842	0.00	0.00	100.499	99.899	42.842	45.304	0.00	0.00	99.899	80.000	45.304	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	-78.67	100.70	100.50	-78.67	-87.17	100.50	99.90	-87.17	-112.68	99.90	80.00	-112.68	-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	-421.1	103.72	-223.6	218.0	-470.6		103.65	-226.0	213.1	-455.5		102.64	-261.7	133.5	-279.0		102.55	-265.1	126.8	-267.3		101.70	-274.0	117.2	-167.1		100.70	-280.6	103.7	-47.1		100.50	-281.7	85.7	-28.1		99.90	-272.8	0.0	0.0	
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105.240	104.650	35.080	37.590	2.60	8.50																																																																																																																																																																																																																																																																																											
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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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([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>108.70</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>-0.1</td><td>0.0</td><td></td><td></td></tr><tr><td>107.70</td><td>-27.4</td><td>-23.1</td><td>-10.9</td><td></td><td></td></tr><tr><td>107.45</td><td>-34.6</td><td>-30.1</td><td>-17.6</td><td></td><td></td></tr><tr><td>107.45</td><td>-80.1</td><td>-30.1</td><td>-46.7</td><td></td><td></td></tr><tr><td>106.70</td><td>-102.9</td><td>-53.7</td><td>-77.9</td><td></td><td></td></tr><tr><td>106.64</td><td>-104.7</td><td>-55.7</td><td>-81.0</td><td></td><td></td></tr><tr><td>105.74</td><td>-131.8</td><td>-83.1</td><td>-144.5</td><td></td><td></td></tr><tr><td>105.70</td><td>-132.9</td><td>-84.1</td><td>-147.6</td><td></td><td></td></tr><tr><td>105.50</td><td>-138.6</td><td>-89.5</td><td>-164.9</td><td></td><td></td></tr><tr><td>105.24</td><td>-146.2</td><td>-97.1</td><td>-189.2</td><td></td><td></td></tr><tr><td>104.65</td><td>-163.1</td><td>-121.8</td><td>-253.5</td><td></td><td></td></tr><tr><td>103.72</td><td>-190.6</td><td>-170.8</td><td>-388.6</td><td>-352.3</td><td></td></tr><tr><td>103.72</td><td>-190.6</td><td>181.5</td><td>-388.6</td><td></td><td></td></tr><tr><td>103.65</td><td>-192.7</td><td>177.3</td><td>-376.1</td><td></td><td></td></tr><tr><td>102.64</td><td>-223.7</td><td>109.1</td><td>-230.2</td><td></td><td></td></tr><tr><td>102.55</td><td>-226.6</td><td>103.4</td><td>-220.7</td><td></td><td></td></tr><tr><td>101.70</td><td>-234.3</td><td>95.6</td><td>-139.3</td><td></td><td></td></tr><tr><td>100.70</td><td>-239.1</td><td>87.1</td><td>-39.8</td><td></td><td></td></tr><tr><td>100.50</td><td>-240.3</td><td>72.2</td><td>-23.7</td><td></td><td></td></tr><tr><td>99.90</td><td>-233.5</td><td>0.0</td><td>0.0</td><td></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><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>108.70</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>106.64</td><td>-93.0</td><td>-23.7</td><td>-48.0</td><td></td><td></td></tr><tr><td>105.74</td><td>-117.6</td><td>-44.0</td><td>-78.3</td><td></td><td></td></tr><tr><td>105.70</td><td>-118.7</td><td>-45.0</td><td>-79.9</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>105.24</td><td>-132.0</td><td>-58.0</td><td>-103.5</td><td></td><td></td></tr><tr><td>104.65</td><td>-148.9</td><td>-82.7</td><td>-144.8</td><td></td><td></td></tr><tr><td>103.72</td><td>-176.3</td><td>-131.7</td><td>-243.5</td><td>-262.9</td><td></td></tr><tr><td>103.72</td><td>-176.3</td><td>131.1</td><td>-243.5</td><td></td><td></td></tr><tr><td>103.65</td><td>-178.5</td><td>126.9</td><td>-234.5</td><td></td><td></td></tr><tr><td>102.64</td><td>-209.5</td><td>58.7</td><td>-139.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-212.4</td><td>53.0</td><td>-134.5</td><td></td><td></td></tr><tr><td>101.70</td><td>-218.5</td><td>49.2</td><td>-95.0</td><td></td><td></td></tr><tr><td>100.70</td><td>-215.3</td><td>64.7</td><td>-30.7</td><td></td><td></td></tr><tr><td>100.50</td><td>-218.6</td><td>55.2</td><td>-18.6</td><td></td><td></td></tr><tr><td>99.90</td><td>-218.5</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table><div>Schnittgrößen 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107.70	-5.7	-15.6	-7.8																																																																																																																																																																																																																																																																																																																																																																																																														
107.45	-7.1	-19.5	-12.2																																																																																																																																																																																																																																																																																																																																																																																																														
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105.70	-14.2	-39.1	-67.7																																																																																																																																																																																																																																																																																																																																																																																																														
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105.24	-14.2	-39.1	-85.7																																																																																																																																																																																																																																																																																																																																																																																																														
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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><div>102.55</div><div>-14.2</div><div>50.4</div><div>-86.2</div></div><div><div>101.70</div><div>-15.8</div><div>46.3</div><div>-44.3</div></div><div><div>100.70</div><div>-23.8</div><div>22.4</div><div>-9.1</div></div><div><div>100.50</div><div>-21.7</div><div>17.0</div><div>-5.1</div></div><div><div>99.90</div><div>-15.0</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>108.70</div><div>-27.6</div><div>-</div><div>-</div><div>-</div></div><div><div>108.70</div><div>-27.6</div><div>-</div><div>-</div><div>-</div></div><div><div>108.70</div><div>-27.6</div><div>-</div><div>-</div><div>-</div></div><div><div>108.69</div><div>-27.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.69</div><div>-27.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.64</div><div>-27.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.75</div><div>-23.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.70</div><div>-23.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.70</div><div>-23.2</div><div>-</div><div>-</div><div>-</div></div><div><div>107.65</div><div>-23.0</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-22.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-22.1</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-22.1</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-21.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.75</div><div>-19.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.70</div><div>-18.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.70</div><div>-18.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.64</div><div>-18.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.64</div><div>-18.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.59</div><div>-18.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.79</div><div>-15.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.74</div><div>-14.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.74</div><div>-14.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.70</div><div>-14.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.70</div><div>-14.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.65</div><div>-14.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-14.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-13.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.29</div><div>-13.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.24</div><div>-12.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.24</div><div>-12.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.20</div><div>-12.7</div><div>-</div><div>-</div><div>-</div></div><div><div>104.70</div><div>-10.8</div><div>-</div><div>-</div><div>-</div></div><div><div>104.65</div><div>-10.6</div><div>-</div><div>-</div><div>-</div></div><div><div>104.65</div><div>-10.6</div><div>-</div><div>-</div><div>-</div></div><div><div>104.60</div><div>-10.4</div><div>-</div><div>-</div><div>-</div></div><div><div>103.77</div><div>-7.5</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-7.4</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-7.4</div><div>-</div><div>-</div><div>-</div></div><div><div>103.70</div><div>-7.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.70</div><div>-7.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.65</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.65</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.60</div><div>-7.0</div><div>-</div><div>-</div><div>-</div></div><div><div>102.70</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>102.64</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.64</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.59</div><div>-4.1</div><div>-</div><div>-</div><div>-</div></div><div><div>102.59</div><div>-4.1</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-4.0</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-4.0</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.50</div><div>-3.9</div><div>0.00</div><div>0.00</div><div>3.45</div></div><div><div>101.75</div><div>-2.0</div><div>27.88</div><div>55.28</div><div>55.28</div></div><div><div>101.70</div><div>-1.9</div><div>27.88</div><div>51.96</div><div>58.73</div></div><div><div>101.70</div><div>-1.9</div><div>31.51</div><div>58.74</div><div>58.73</div></div><div><div>101.65</div><div>-1.7</div><div>31.51</div><div>55.01</div><div>62.19</div></div><div><div>100.75</div><div>0.3</div><div>50.00</div><div>-15.41</div><div>124.38</div></div><div><div>100.70</div><div>0.4</div><div>50.00</div><div>-20.97</div><div>127.83</div></div><div><div>100.70</div><div>0.4</div><div>50.00</div><div>-20.97</div><div>127.83</div></div></div>					
Schnitt: Anlage C1 Schnitt 3R				Seite Anlage C1/28	
Kapitel: 5 LF 3 (BS-T, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forner





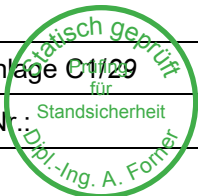
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.650.550.00-26.52131.29</div><div>100.550.850.00-37.60138.20</div><div>100.500.950.00-43.13141.65</div><div>100.500.950.00-43.13141.65</div><div>100.451.050.00-48.66145.11</div><div>99.952.150.00-103.78179.66</div><div>99.902.250.00-109.29183.11</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.12616381</div><div>Theoretischer Fußpunkt = 99.899 m</div></div><div><div>Einbindetiefe tg = 2.65 m</div><div>Profillänge = 8.80 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 &gt;= Bv,k</div><div>G,k = 166.52 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 45.50 kN/m</div><div>Eav,k = 53.39 kN/m (Eah,k = 311.14 kN/m)</div><div>Bv,k = 22.44</div><div>Summe V,k = 242.97 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 100.78 bis 97.26 m) ==&gt; 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>102.5599.9055.00s3: Flussskies, -sand</div></div><div>Mantelfläche bis 99.90 m = 1.000 m²/m/m ==&gt; R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 145.75 / 1.40 = 104.11 kN/m</div><div>R,d = Rb,d + R,s1,d = 969.16 kN/m</div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 199.83 - 0.00 + 62.47 + 54.60 = 316.90 kN/m</div><div>==&gt; µ = V,d / R,d = 316.90 / 969.16 = 0.33</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt:	Anlage C1 Schnitt 3R	Seite Anlage C1/29
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. Fortner



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: 05_BS 3_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 = 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 = 10.45 m</div>		
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/30
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

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 264.970 / 266.149 = 0.996$   
 Bettungslager  $B_{h,d} = 264.970 \text{ kN/m}$   
 Erdwiderstand  $E_{ph,d} = 266.149 \text{ kN/m}$

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	-244.65	-189.46	-189.46	-49.58	3.900E+7	2.100E+7	-241.56

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	-9.3	0.0	-245.28	0.00	0.00
-7.47	103.72	-9.3	0.0	-245.28	0.00	0.00
-7.47	103.72	-9.3	0.0	-245.28	0.00	0.00
-6.64	103.72	-9.3	0.0	-245.28	0.00	0.00
-5.81	103.72	-9.3	0.0	-245.28	0.00	0.00
-4.98	103.72	-9.3	0.0	-245.28	0.00	0.00
-4.15	103.72	-9.3	0.0	-245.28	0.00	0.00
-3.32	103.72	-9.3	0.0	-245.28	0.00	0.00
-2.49	103.72	-9.3	0.1	-245.28	0.00	0.00
-1.66	103.72	-9.3	0.1	-245.28	0.00	0.00
-0.83	103.72	-9.4	0.1	-245.28	0.00	0.00
0.00	103.72	-9.4	0.1	-245.28	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0073

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  $\phi_i = 40^\circ$   
 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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	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 C1	Schnitt 3R	Seite Anlage C1/31
Kapitel: 6	LF 4 (BS-P, mit Lasten)	Archiv Nr.: 103
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>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>98.249</td><td>48.442</td><td>50.289</td><td>0.00</td><td>0.00</td></tr><tr><td>98.249</td><td>80.000</td><td>50.289</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>98.25</td><td>-163.31</td><td>-181.08</td></tr><tr><td>98.25</td><td>80.00</td><td>-181.08</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>-245.3</td></tr><tr><td>103.72</td><td>-223.8</td><td>89.6</td><td>-281.8</td><td></td></tr><tr><td>103.65</td><td>-226.5</td><td>84.3</td><td>-275.7</td><td></td></tr><tr><td>102.64</td><td>-265.1</td><td>-1.2</td><td>-232.1</td><td></td></tr><tr><td>102.55</td><td>-268.8</td><td>-8.5</td><td>-232.6</td><td></td></tr><tr><td>102.10</td><td>-272.7</td><td>-9.9</td><td>-237.6</td><td></td></tr><tr><td>101.70</td><td>-269.7</td><td>3.9</td><td>-239.2</td><td></td></tr><tr><td>100.70</td><td>-242.9</td><td>83.0</td><td>-198.0</td><td></td></tr><tr><td>99.70</td><td>-236.2</td><td>106.3</td><td>-96.3</td><td></td></tr><tr><td>98.70</td><td>-253.2</td><td>49.9</td><td>-11.8</td><td></td></tr><tr><td>98.25</td><td>-255.4</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	105.240	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	98.249	48.442	50.289	0.00	0.00	98.249	80.000	50.289	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	98.25	-163.31	-181.08	98.25	80.00	-181.08	-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	-245.3	103.72	-223.8	89.6	-281.8		103.65	-226.5	84.3	-275.7		102.64	-265.1	-1.2	-232.1		102.55	-268.8	-8.5	-232.6		102.10	-272.7	-9.9	-237.6		101.70	-269.7	3.9	-239.2		100.70	-242.9	83.0	-198.0		99.70	-236.2	106.3	-96.3		98.70	-253.2	49.9	-11.8		98.25	-255.4	0.0	0.0	
106.700	105.650	16.756	24.530	0.00	0.00																																																																																																																																																																																																																																																																																								
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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																																																																																																																																																																																																																																																																																								
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99.699	98.699	44.340	48.442	0.00	0.00																																																																																																																																																																																																																																																																																								
98.699	98.249	48.442	50.289	0.00	0.00																																																																																																																																																																																																																																																																																								
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102.10	-272.7	-9.9	-237.6																																																																																																																																																																																																																																																																																										
101.70	-269.7	3.9	-239.2																																																																																																																																																																																																																																																																																										
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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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<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>108.70</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>-21.0</td><td>-5.6</td><td>-2.2</td><td></td></tr> <tr><td>107.45</td><td>-26.6</td><td>-8.2</td><td>-3.9</td><td></td></tr> <tr><td>107.45</td><td>-72.1</td><td>-8.2</td><td>-33.0</td><td></td></tr> <tr><td>106.70</td><td>-90.2</td><td>-18.7</td><td>-42.9</td><td></td></tr> <tr><td>105.65</td><td>-117.9</td><td>-40.4</td><td>-73.1</td><td></td></tr> <tr><td>105.50</td><td>-122.1</td><td>-44.1</td><td>-79.5</td><td></td></tr> <tr><td>105.24</td><td>-129.5</td><td>-51.3</td><td>-91.9</td><td></td></tr> <tr><td>104.65</td><td>-146.0</td><td>-74.5</td><td>-128.7</td><td></td></tr> 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0	-18.1	-	-	-	107.70	-18.1	-	-	-	107.65	-17.9	-	-	-	107.50	-17.5	-	-	-	107.45	-17.4	-	-	-	107.45	-17.4	-	-	-	107.40	-17.2	-	-	-	106.75	-15.4	-	-	-	106.70	-15.2	-	-	-	106.70	-15.2	-	-	-	106.65	-15.1	-	-	-	105.70	-12.4	-	-	-	105.65	-12.3	-	-	-	105.65	-12.3	-	-	-	105.60	-12.1	-	-	-	105.55	-12.0	-	-	-	105.50	-11.9	-	-	-	105.50	-11.9	-	-	-	105.45	-11.7	-	-	-	105.29	-11.3	-	-	-	105.24	-11.2	-	-	-	105.24	-11.2	-	-	-	105.20	-11.1	-	-	-	104.70	-9.7	-	-	-	104.65	-9.6	-	-	-	104.65	-9.6	-	-	-	104.60	-9.5	-	-	-	103.77	-7.5	-	-	-	103.72	-7.3	-	-	-	103.72	-7.3	-	-	-	103.70	-7.3	-	-	-	103.70	-7.3	-	-	-	103.65	-7.2	-	-	-	103.65	-7.2	-	-	-	103.60	-7.1	-	-	-	102.70	-5.2	-	-	-	102.64	-5.0	-	-	-	102.64	-5.0	-	-	-	102.60	-5.0	-	-	-	102.60	-5.0	-	-	-	102.55	-4.9	0.00	0.00	0.00	102.55	-4.9	0.00	0.00	19.82	102.50	-4.8	0.00	0.00	23.27	102.15	-4.1	11.49	47.45	47.45	102.10	-4.0	11.49	46.43	50.91	102.10	-4.0	12.60	50.91	50.91	102.05	-4.0	12.60	49.79	54.36	101.75	-3.4	21.85	75.09	75.09	101.70	-3.4	21.85	73.27	78.54	101.70	-3.4	23.42	78.54	78.54	101.65	-3.3	23.42	76.62	82.00	100.75	-1.9	50.00	96.05	144.17	100.70	-1.9	50.00	92.64	147.63	100.70	-1.9	50.00	92.64	147.63	100.65	-1.8	50.00	89.27	151.08	99.75	-0.7	50.00	33.31	213.26	99.70	-0.6	50.00	30.41	216.71	99.70	-0.6	50.00	30.41	216.71
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100.65	-1.8	50.00	89.27	151.08																																																																																																																																																																																																																																																																																																																																													
99.75	-0.7	50.00	33.31	213.26																																																																																																																																																																																																																																																																																																																																													
99.70	-0.6	50.00	30.41	216.71																																																																																																																																																																																																																																																																																																																																													
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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 border="1"> <tr><td>99.65</td><td>-0.6</td><td>50.00</td><td>27.53</td><td>220.17</td></tr> <tr><td>98.75</td><td>0.5</td><td>50.00</td><td>-22.58</td><td>282.35</td></tr> <tr><td>98.70</td><td>0.5</td><td>50.00</td><td>-25.31</td><td>285.80</td></tr> <tr><td>98.70</td><td>0.5</td><td>50.00</td><td>-25.31</td><td>285.80</td></tr> <tr><td>98.65</td><td>0.6</td><td>50.00</td><td>-28.03</td><td>289.26</td></tr> <tr><td>98.30</td><td>0.9</td><td>50.00</td><td>-47.09</td><td>313.44</td></tr> <tr><td>98.25</td><td>1.0</td><td>50.00</td><td>-49.81</td><td>316.89</td></tr> </table> <p> Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.06235646  Theoretischer Fußpunkt = 98.249 m </p> <p> Einbindetiefe <math>t_g</math> = 4.30 m  Profillänge = 10.45 m </p> <p> Nachweis Summe V  Nachweis des mobilisierten Erdwiderstands  Bedingung: <math>P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{v,k}</math> = 197.74 kN/m  <math>G'_{v,k}</math> = 0.00 kN/m  <math>P_{v,k}</math> = 45.50 kN/m  <math>E_{av,k}</math> = 58.59 kN/m (<math>E_{ah,k}</math> = 331.30 kN/m)  <math>B_{v,k}</math> = 82.72  Summe <math>V_{v,k}</math> = 219.11 kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit  (Erfahrungswerte nach EA Pfähle)  Verfahren 2: EAU Bild E 4-3 (rechts)  Bohrpfahlwand <math>D</math> = 0.88 m  Verhältniswert (min, max) = 0.00  Spitzendruck <math>q_{c,m}</math> = 7.50 MN/m<sup>2</sup>  (gemittelt von 99.13 bis 95.61 m) <math>\Rightarrow q_{b,k}</math> = 1.60 MN/m<sup>2</sup>  <math>R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05</math> kN/m </p> <p> Mantelreibung  <table border="1"> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k}</math> [kN/m<sup>2</sup>]</th> <th>Bezeichnung</th> </tr> <tr> <td>102.55</td> <td>98.25</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.25 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 236.50 / 1.40 = 168.93</math> kN/m  <math>R_{d} = R_{b,d} + R_{s1,d} = 1033.98</math> kN/m </p> <p> Einwirkungen  <math>V_{d} = G_{d} - G'_{d} + E_{av,d} + P_{v,d} = 266.96 - 0.00 + 74.70 + 61.43 = 403.08</math> kN/m  <math>\Rightarrow \mu = V_{d} / R_{d} = 403.08 / 1033.98 = 0.39</math> </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>			99.65	-0.6	50.00	27.53	220.17	98.75	0.5	50.00	-22.58	282.35	98.70	0.5	50.00	-25.31	285.80	98.70	0.5	50.00	-25.31	285.80	98.65	0.6	50.00	-28.03	289.26	98.30	0.9	50.00	-47.09	313.44	98.25	1.0	50.00	-49.81	316.89	von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung	102.55	98.25	55.00	s3: Flussskies, -sand
99.65	-0.6	50.00	27.53	220.17																																									
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102.55	98.25	55.00	s3: Flussskies, -sand																																										
Schnitt: Anlage C1 Schnitt 3R		Seite Anlage C1/35																																											
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025																																											
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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>Anlage D1 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: 00_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 = 7.50 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 = 296.699 / 577.722 = 0.514 Bettungslager Bh,d = 296.699 kN/m Erdwiderstand Eph,d = 577.722 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]	[-]																																									
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Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/1																																															
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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<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 &gt; 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>102.570</td><td>30.512</td><td>30.719</td><td>5.00</td><td>5.00</td></tr><tr><td>102.570</td><td>102.418</td><td>30.719</td><td>31.339</td><td>5.00</td><td>5.00</td></tr><tr><td>102.418</td><td>102.166</td><td>31.339</td><td>32.373</td><td>5.00</td><td>5.00</td></tr><tr><td>102.166</td><td>101.410</td><td>32.373</td><td>35.474</td><td>5.00</td><td>5.00</td></tr><tr><td>101.410</td><td>101.058</td><td>35.474</td><td>36.921</td><td>5.00</td><td>5.00</td></tr><tr><td>101.058</td><td>100.402</td><td>36.921</td><td>39.608</td><td>5.00</td><td>5.00</td></tr><tr><td>100.402</td><td>99.949</td><td>39.608</td><td>41.469</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>41.469</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	102.570	30.512	30.719	5.00	5.00	102.570	102.418	30.719	31.339	5.00	5.00	102.418	102.166	31.339	32.373	5.00	5.00	102.166	101.410	32.373	35.474	5.00	5.00	101.410	101.058	35.474	36.921	5.00	5.00	101.058	100.402	36.921	39.608	5.00	5.00	100.402	99.949	39.608	41.469	5.00	5.00	99.949	80.000	41.469	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>Schnitt: Anlage D1 Schnitt 4R</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage D1/2</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																																																																																																																																																																																																																																																																																																														
[-]	[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																																																																																																																																																																																																																																																																																																														
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107.450	106.886	0.000	4.176	0.00	0.00																																																																																																																																																																																																																																																																																																																			
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105.410	105.320	24.043	24.394	0.90	1.80																																																																																																																																																																																																																																																																																																																			
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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	102.570	30.512	30.719	5.00	5.00																																																																																																																																																																																																																																																																																																																			
102.570	102.418	30.719	31.339	5.00	5.00																																																																																																																																																																																																																																																																																																																			
102.418	102.166	31.339	32.373	5.00	5.00																																																																																																																																																																																																																																																																																																																			
102.166	101.410	32.373	35.474	5.00	5.00																																																																																																																																																																																																																																																																																																																			
101.410	101.058	35.474	36.921	5.00	5.00																																																																																																																																																																																																																																																																																																																			
101.058	100.402	36.921	39.608	5.00	5.00																																																																																																																																																																																																																																																																																																																			
100.402	99.949	39.608	41.469	5.00	5.00																																																																																																																																																																																																																																																																																																																			
99.949	80.000	41.469	123.290	5.00	5.00																																																																																																																																																																																																																																																																																																																			
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																					
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[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																																																		
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[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																																																																																																																																																																																																																																																																																																																					



Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>103.41 102.62 -66.67 -79.26</div> <div>102.62 102.57 -142.62 -144.76</div> <div>102.57 102.42 -144.76 -151.19</div> <div>102.42 102.17 -151.19 -161.90</div> <div>102.17 101.41 -161.90 -194.03</div> <div>101.41 101.06 -194.03 -209.03</div> <div>101.06 100.40 -209.03 -236.88</div> <div>100.40 99.95 -236.88 -256.16</div> <div>99.95 80.00 -256.16 -1104.02</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>106.89 -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>105.41 -43.8 -12.4 -15.8</div><div>105.32 -43.6 -9.0 -16.8</div><div>105.00 -46.8 -7.5 -19.3</div><div>104.41 -53.5 -9.8 -24.2</div><div>103.41 -66.8 -25.5 -40.5</div><div>102.62 -79.3 -48.4 -69.2</div><div>102.57 -80.0 -49.6 -71.7</div><div>102.42 -72.8 -29.3 -77.6</div><div>102.17 -62.7 -0.6 -81.3</div><div>101.41 -45.8 49.6 -59.4</div><div>101.06 -44.7 55.1 -40.6</div><div>100.40 -53.4 35.7 -8.8</div><div>99.95 -58.6 0.0 0.0</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>106.89 -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>105.41 -38.1 -10.8 -13.7</div><div>105.32 -37.9 -7.9 -14.6</div><div>105.00 -40.7 -6.6 -16.8</div><div>104.41 -46.6 -8.6 -21.1</div><div>103.41 -58.1 -22.1 -35.3</div><div>102.62 -69.0 -41.9 -60.1</div><div>102.57 -69.6 -42.9 -62.2</div><div>102.42 -63.4 -25.4 -67.4</div><div>102.17 -54.5 -0.4 -70.5</div><div>101.41 -39.9 43.0 -51.5</div><div>101.06 -38.9 47.8 -35.2</div><div>100.40 -46.5 30.9 -7.6</div><div>99.95 -51.0 0.0 0.0</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>106.89 -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>105.41 -38.1 -10.8 -13.7</div><div>105.32 -37.9 -7.9 -14.6</div><div>105.00 -40.7 -6.6 -16.8</div><div>104.41 -46.6 -8.6 -21.1</div><div>103.41 -58.1 -22.1 -35.3</div><div>102.62 -69.0 -41.9 -60.1</div></div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 113
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>102.57 -69.6 -42.9 -62.2</div><div>102.42 -63.4 -25.4 -67.4</div><div>102.17 -54.5 -0.4 -70.5</div><div>101.41 -39.9 43.0 -51.5</div><div>101.06 -38.9 47.8 -35.2</div><div>100.40 -46.5 30.9 -7.6</div><div>99.95 -51.0 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>106.20 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>105.41 0.0 0.0 0.0</div><div>105.32 0.0 0.0 0.0</div><div>105.00 0.0 0.0 0.0</div><div>104.41 0.0 0.0 0.0</div><div>103.41 0.0 0.0 0.0</div><div>102.62 0.0 0.0 0.0</div><div>102.57 0.0 0.0 0.0</div><div>102.42 0.0 0.0 0.0</div><div>102.17 0.0 0.0 0.0</div><div>101.41 0.0 0.0 0.0</div><div>101.06 0.0 0.0 0.0</div><div>100.40 0.0 0.0 0.0</div><div>99.95 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 -11.7 - - -</div><div>107.40 -11.6 - - -</div><div>106.95 -10.8 - - -</div><div>106.89 -10.7 - - -</div><div>106.84 -10.6 - - -</div><div>106.50 -10.0 - - -</div><div>106.45 -9.9 - - -</div><div>106.45 -9.9 - - -</div><div>106.40 -9.8 - - -</div><div>106.25 -9.5 - - -</div><div>106.20 -9.4 - - -</div><div>106.15 -9.3 - - -</div><div>106.05 -9.2 - - -</div><div>106.00 -9.1 0.00 0.00 0.00</div><div>106.00 -9.1 0.00 0.00 0.00</div><div>105.95 -9.0 0.00 0.00 4.75</div><div>105.55 -8.3 5.17 42.80 42.79</div><div>105.50 -8.2 5.81 47.55 47.55</div><div>105.45 -8.1 5.81 47.09 51.83</div><div>105.45 -8.1 6.39 51.83 51.83</div><div>105.41 -8.0 6.39 51.32 56.11</div><div>105.41 -8.0 6.99 56.11 56.11</div><div>105.36 -8.0 7.60 60.39 60.39</div><div>105.32 -7.9 7.60 59.78 64.67</div><div>105.32 -7.9 5.00 39.36 50.93</div><div>105.27 -7.8 5.00 38.88 53.68</div><div>105.05 -7.4 5.00 37.01 64.68</div><div>105.00 -7.3 5.00 36.54 67.43</div><div>104.95 -7.2 5.00 36.10 68.71</div><div>104.45 -6.4 5.00 31.77 81.49</div><div>104.41 -6.3 5.00 31.33 82.77</div><div>104.41 -6.3 5.00 31.33 82.77</div><div>104.36 -6.2 5.00 30.90 84.05</div><div>103.46 -4.6 5.00 23.24 107.06</div><div>103.41 -4.6 5.00 22.82 108.34</div><div>103.41 -4.6 5.00 22.82 108.34</div></div></div></div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/4
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 114
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>103.36</td><td>-4.5</td><td>5.00</td><td>22.40</td><td>109.62</td></tr><tr><td>102.67</td><td>-3.3</td><td>5.00</td><td>16.62</td><td>127.52</td></tr><tr><td>102.62</td><td>-3.2</td><td>5.00</td><td>16.21</td><td>128.80</td></tr><tr><td>102.62</td><td>-3.2</td><td>5.00</td><td>16.21</td><td>231.76</td></tr><tr><td>102.57</td><td>-3.2</td><td>5.00</td><td>15.80</td><td>235.24</td></tr><tr><td>102.57</td><td>-3.2</td><td>50.00</td><td>158.04</td><td>235.24</td></tr><tr><td>102.52</td><td>-3.1</td><td>50.00</td><td>153.95</td><td>238.72</td></tr><tr><td>102.47</td><td>-3.0</td><td>50.00</td><td>149.87</td><td>242.20</td></tr><tr><td>102.42</td><td>-2.9</td><td>50.00</td><td>145.81</td><td>245.69</td></tr><tr><td>102.42</td><td>-2.9</td><td>50.00</td><td>145.81</td><td>245.69</td></tr><tr><td>102.37</td><td>-2.8</td><td>50.00</td><td>141.76</td><td>249.17</td></tr><tr><td>102.22</td><td>-2.6</td><td>50.00</td><td>129.71</td><td>259.61</td></tr><tr><td>102.17</td><td>-2.5</td><td>50.00</td><td>125.73</td><td>263.09</td></tr><tr><td>102.17</td><td>-2.5</td><td>50.00</td><td>125.73</td><td>263.09</td></tr><tr><td>102.12</td><td>-2.4</td><td>50.00</td><td>121.76</td><td>266.57</td></tr><tr><td>101.46</td><td>-1.4</td><td>50.00</td><td>71.45</td><td>311.82</td></tr><tr><td>101.41</td><td>-1.4</td><td>50.00</td><td>67.67</td><td>315.31</td></tr><tr><td>101.41</td><td>-1.4</td><td>50.00</td><td>67.67</td><td>315.31</td></tr><tr><td>101.36</td><td>-1.3</td><td>50.00</td><td>63.90</td><td>318.79</td></tr><tr><td>101.11</td><td>-0.9</td><td>50.00</td><td>45.21</td><td>336.19</td></tr><tr><td>101.06</td><td>-0.8</td><td>50.00</td><td>41.50</td><td>339.67</td></tr><tr><td>101.06</td><td>-0.8</td><td>50.00</td><td>41.50</td><td>339.67</td></tr><tr><td>101.01</td><td>-0.8</td><td>50.00</td><td>37.80</td><td>343.15</td></tr><tr><td>100.45</td><td>0.1</td><td>50.00</td><td>-2.58</td><td>381.44</td></tr><tr><td>100.40</td><td>0.1</td><td>50.00</td><td>-6.23</td><td>384.93</td></tr><tr><td>100.40</td><td>0.1</td><td>50.00</td><td>-6.23</td><td>384.93</td></tr><tr><td>100.35</td><td>0.2</td><td>50.00</td><td>-9.88</td><td>388.41</td></tr><tr><td>100.00</td><td>0.7</td><td>50.00</td><td>-35.40</td><td>412.77</td></tr><tr><td>99.95</td><td>0.8</td><td>50.00</td><td>-39.04</td><td>416.25</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08286084 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 141.92 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 37.03 kN/m (Eah,k = 219.81 kN/m) Bv,k = 91.77 Summe V,k = 87.19 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 100.83 bis 97.31 m) ==&gt; 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 106.00 105.32 0.00 S1: Auffüllungen 105.32 102.62 0.00 S2: Auelehm 102.62 99.95 55.00 s3: Flusskies, -sand Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 146.85 / 1.40 = 104.89 kN/m R,d = Rb,d + R,s1,d = 969.94 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 170.31 - 0.00 + 42.59 + 0.00 = 212.89 kN/m ==&gt; µ = V,d / R,d = 212.89 / 969.94 = 0.22</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.36	-4.5	5.00	22.40	109.62	102.67	-3.3	5.00	16.62	127.52	102.62	-3.2	5.00	16.21	128.80	102.62	-3.2	5.00	16.21	231.76	102.57	-3.2	5.00	15.80	235.24	102.57	-3.2	50.00	158.04	235.24	102.52	-3.1	50.00	153.95	238.72	102.47	-3.0	50.00	149.87	242.20	102.42	-2.9	50.00	145.81	245.69	102.42	-2.9	50.00	145.81	245.69	102.37	-2.8	50.00	141.76	249.17	102.22	-2.6	50.00	129.71	259.61	102.17	-2.5	50.00	125.73	263.09	102.17	-2.5	50.00	125.73	263.09	102.12	-2.4	50.00	121.76	266.57	101.46	-1.4	50.00	71.45	311.82	101.41	-1.4	50.00	67.67	315.31	101.41	-1.4	50.00	67.67	315.31	101.36	-1.3	50.00	63.90	318.79	101.11	-0.9	50.00	45.21	336.19	101.06	-0.8	50.00	41.50	339.67	101.06	-0.8	50.00	41.50	339.67	101.01	-0.8	50.00	37.80	343.15	100.45	0.1	50.00	-2.58	381.44	100.40	0.1	50.00	-6.23	384.93	100.40	0.1	50.00	-6.23	384.93	100.35	0.2	50.00	-9.88	388.41	100.00	0.7	50.00	-35.40	412.77	99.95	0.8	50.00	-39.04	416.25
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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>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: 01_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 = 7.50 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 D1 Schnitt 4R		Seite Anlage D1/6
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 <math>\mu_e = 353.918 / 542.709 = 0.652</math> Bettungslager <math>B_{h,d} = 353.918 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 542.709 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>102.418</td><td>34.079</td><td>34.906</td><td>5.00</td><td>5.00</td></tr><tr><td>102.418</td><td>102.267</td><td>34.906</td><td>35.526</td><td>5.00</td><td>5.00</td></tr><tr><td>102.267</td><td>101.410</td><td>35.526</td><td>39.040</td><td>5.00</td><td>5.00</td></tr><tr><td>101.410</td><td>101.108</td><td>39.040</td><td>40.280</td><td>5.00</td><td>5.00</td></tr><tr><td>101.108</td><td>100.402</td><td>40.280</td><td>43.175</td><td>5.00</td><td>5.00</td></tr><tr><td>100.402</td><td>99.949</td><td>43.175</td><td>45.035</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>45.035</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(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 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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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>Schnittgrößen (Bemessungswerte)</div> 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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>99.95-32.20.00.0</div><div>Schnittgrößen (g+w,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 107.45 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 -10.9 105.69 -40.3 -26.7 -18.6 105.50 -41.4 -25.6 -23.6 105.41 -41.4 -23.9 -25.8 105.32 -41.2 -21.5 -27.8 105.00 -43.1 -18.7 -34.2 104.93 -43.5 -18.3 -35.6 104.43 -47.2 -17.8 -44.5 103.42 -56.9 -28.9 -66.6 102.62 -66.9 -49.2 -97.3 102.42 -55.7 -19.3 -104.1 102.27 -48.4 0.1 -105.5 101.41 -24.8 63.9 -72.6 101.11 -23.5 68.2 -52.4 100.40 -31.6 42.6 -10.4 99.95 -32.2 0.0 0.0</div><div><div>Schnittgrößen (q,k) Tiefe N Q M [mNHN] [kN/m] [kN/m] [kN·m/m] 107.45 0.0 0.0 0.0 107.45 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 0.0 105.69 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 0.0 105.00 0.0 0.0 0.0 104.93 0.0 0.0 0.0 104.43 0.0 0.0 0.0 103.42 0.0 0.0 0.0 102.62 0.0 0.0 0.0 102.42 0.0 0.0 0.0 102.27 0.0 0.0 0.0 101.41 0.0 0.0 0.0 101.11 0.0 0.0 0.0 100.40 0.0 0.0 0.0 99.95 0.0 0.0 0.0</div><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] 107.45 -15.4 - - - 107.45 -15.4 - - - 107.45 -15.4 - - - 107.40 -15.3 - - - 106.95 -14.2 - - - 106.89 -14.0 - - - 106.89 -14.0 - - - 106.84 -13.9 - - - 106.50 -13.1 - - - 106.45 -13.0 - - - 106.45 -13.0 - - - 106.40 -12.9 - - - 106.25 -12.5 - - - 106.20 -12.4 - - - 106.20 -12.4 - - -</div></div></div></div></div>		
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Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 19
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																																												
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<table><tr><td>106.15</td><td>-12.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.05</td><td>-12.0</td><td>-</td><td>-</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><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><td></td><td></td></tr><tr><td>105.95</td><td>-11.8</td><td>0.00</td><td>0.00</td><td>4.98</td><td></td><td></td></tr><tr><td>105.74</td><td>-11.2</td><td>2.21</td><td>24.89</td><td>24.89</td><td></td><td></td></tr><tr><td>105.69</td><td>-11.1</td><td>2.21</td><td>24.61</td><td>29.87</td><td></td><td></td></tr><tr><td>105.69</td><td>-11.1</td><td>2.69</td><td>29.87</td><td>29.87</td><td></td><td></td></tr><tr><td>105.64</td><td>-11.0</td><td>2.69</td><td>29.56</td><td>34.29</td><td></td><td></td></tr><tr><td>105.55</td><td>-10.8</td><td>4.00</td><td>43.13</td><td>43.13</td><td></td><td></td></tr><tr><td>105.50</td><td>-10.7</td><td>4.00</td><td>42.68</td><td>47.55</td><td></td><td></td></tr><tr><td>105.50</td><td>-10.7</td><td>4.46</td><td>47.55</td><td>47.55</td><td></td><td></td></tr><tr><td>105.45</td><td>-10.6</td><td>4.46</td><td>47.06</td><td>51.83</td><td></td><td></td></tr><tr><td>105.45</td><td>-10.6</td><td>4.91</td><td>51.83</td><td>51.83</td><td></td><td></td></tr><tr><td>105.41</td><td>-10.4</td><td>4.91</td><td>51.29</td><td>56.11</td><td></td><td></td></tr><tr><td>105.41</td><td>-10.4</td><td>5.37</td><td>56.11</td><td>56.11</td><td></td><td></td></tr><tr><td>105.36</td><td>-10.3</td><td>5.37</td><td>55.52</td><td>60.39</td><td></td><td></td></tr><tr><td>105.36</td><td>-10.3</td><td>5.84</td><td>60.39</td><td>60.39</td><td></td><td></td></tr><tr><td>105.32</td><td>-10.2</td><td>5.84</td><td>59.75</td><td>64.67</td><td></td><td></td></tr><tr><td>105.32</td><td>-10.2</td><td>4.98</td><td>50.93</td><td>50.93</td><td></td><td></td></tr><tr><td>105.27</td><td>-10.1</td><td>4.98</td><td>50.28</td><td>53.68</td><td></td><td></td></tr><tr><td>105.05</td><td>-9.6</td><td>5.00</td><td>47.90</td><td>64.68</td><td></td><td></td></tr><tr><td>105.00</td><td>-9.5</td><td>5.00</td><td>47.26</td><td>67.43</td><td></td><td></td></tr><tr><td>105.00</td><td>-9.5</td><td>5.00</td><td>47.26</td><td>67.43</td><td></td><td></td></tr><tr><td>104.93</td><td>-9.3</td><td>5.00</td><td>46.38</td><td>69.31</td><td></td><td></td></tr><tr><td>104.93</td><td>-9.3</td><td>5.00</td><td>46.38</td><td>69.31</td><td></td><td></td></tr><tr><td>104.88</td><td>-9.2</td><td>5.00</td><td>45.78</td><td>70.60</td><td></td><td></td></tr><tr><td>104.48</td><td>-8.2</td><td>5.00</td><td>41.00</td><td>80.95</td><td></td><td></td></tr><tr><td>104.43</td><td>-8.1</td><td>5.00</td><td>40.40</td><td>82.24</td><td></td><td></td></tr><tr><td>104.43</td><td>-8.1</td><td>5.00</td><td>40.40</td><td>82.24</td><td></td><td></td></tr><tr><td>104.38</td><td>-8.0</td><td>5.00</td><td>39.81</td><td>83.53</td><td></td><td></td></tr><tr><td>103.47</td><td>-5.9</td><td>5.00</td><td>29.32</td><td>106.81</td><td></td><td></td></tr><tr><td>103.42</td><td>-5.7</td><td>5.00</td><td>28.75</td><td>108.11</td><td></td><td></td></tr><tr><td>103.42</td><td>-5.7</td><td>5.00</td><td>28.75</td><td>108.11</td><td></td><td></td></tr><tr><td>103.37</td><td>-5.6</td><td>5.00</td><td>28.18</td><td>109.40</td><td></td><td></td></tr><tr><td>102.67</td><td>-4.1</td><td>5.00</td><td>20.38</td><td>127.51</td><td></td><td></td></tr><tr><td>102.62</td><td>-4.0</td><td>5.00</td><td>19.83</td><td>128.80</td><td></td><td></td></tr><tr><td>102.62</td><td>-4.0</td><td>50.00</td><td>198.33</td><td>231.76</td><td></td><td></td></tr><tr><td>102.57</td><td>-3.9</td><td>50.00</td><td>192.88</td><td>235.24</td><td></td><td></td></tr><tr><td>102.47</td><td>-3.6</td><td>50.00</td><td>182.06</td><td>242.20</td><td></td><td></td></tr><tr><td>102.42</td><td>-3.5</td><td>50.00</td><td>176.69</td><td>245.69</td><td></td><td></td></tr><tr><td>102.42</td><td>-3.5</td><td>50.00</td><td>176.69</td><td>245.69</td><td></td><td></td></tr><tr><td>102.37</td><td>-3.4</td><td>50.00</td><td>171.33</td><td>249.17</td><td></td><td></td></tr><tr><td>102.32</td><td>-3.3</td><td>50.00</td><td>166.00</td><td>252.65</td><td></td><td></td></tr><tr><td>102.27</td><td>-3.2</td><td>50.00</td><td>160.69</td><td>256.13</td><td></td><td></td></tr><tr><td>102.27</td><td>-3.2</td><td>50.00</td><td>160.69</td><td>256.13</td><td></td><td></td></tr><tr><td>102.22</td><td>-3.1</td><td>50.00</td><td>155.40</td><td>259.61</td><td></td><td></td></tr><tr><td>101.46</td><td>-1.6</td><td>50.00</td><td>78.68</td><td>311.82</td><td></td><td></td></tr><tr><td>101.41</td><td>-1.5</td><td>50.00</td><td>73.72</td><td>315.31</td><td></td><td></td></tr><tr><td>101.41</td><td>-1.5</td><td>50.00</td><td>73.72</td><td>315.31</td><td></td><td></td></tr><tr><td>101.36</td><td>-1.4</td><td>50.00</td><td>68.77</td><td>318.79</td><td></td><td></td></tr><tr><td>101.16</td><td>-1.0</td><td>50.00</td><td>49.13</td><td>332.71</td><td></td><td></td></tr><tr><td>101.11</td><td>-0.9</td><td>50.00</td><td>44.25</td><td>336.19</td><td></td><td></td></tr><tr><td>101.11</td><td>-0.9</td><td>50.00</td><td>44.25</td><td>336.19</td><td></td><td></td></tr><tr><td>101.06</td><td>-0.8</td><td>50.00</td><td>39.38</td><td>339.67</td><td></td><td></td></tr><tr><td>100.45</td><td>0.4</td><td>50.00</td><td>-18.42</td><td>381.44</td><td></td><td></td></tr><tr><td>100.40</td><td>0.5</td><td>50.00</td><td>-23.20</td><td>384.93</td><td></td><td></td></tr><tr><td>100.40</td><td>0.5</td><td>50.00</td><td>-23.20</td><td>384.93</td><td></td><td></td></tr><tr><td>100.35</td><td>0.6</td><td>50.00</td><td>-27.98</td><td>388.41</td><td></td><td></td></tr><tr><td>100.00</td><td>1.2</td><td>50.00</td><td>-61.43</td><td>412.77</td><td></td><td></td></tr><tr><td>99.95</td><td>1.3</td><td>50.00</td><td>-66.20</td><td>416.25</td><td></td><td></td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10859372 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p>							106.15	-12.3	-	-	-			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	4.98			105.74	-11.2	2.21	24.89	24.89			105.69	-11.1	2.21	24.61	29.87			105.69	-11.1	2.69	29.87	29.87			105.64	-11.0	2.69	29.56	34.29			105.55	-10.8	4.00	43.13	43.13			105.50	-10.7	4.00	42.68	47.55			105.50	-10.7	4.46	47.55	47.55			105.45	-10.6	4.46	47.06	51.83			105.45	-10.6	4.91	51.83	51.83			105.41	-10.4	4.91	51.29	56.11			105.41	-10.4	5.37	56.11	56.11			105.36	-10.3	5.37	55.52	60.39			105.36	-10.3	5.84	60.39	60.39			105.32	-10.2	5.84	59.75	64.67			105.32	-10.2	4.98	50.93	50.93			105.27	-10.1	4.98	50.28	53.68			105.05	-9.6	5.00	47.90	64.68			105.00	-9.5	5.00	47.26	67.43			105.00	-9.5	5.00	47.26	67.43			104.93	-9.3	5.00	46.38	69.31			104.93	-9.3	5.00	46.38	69.31			104.88	-9.2	5.00	45.78	70.60			104.48	-8.2	5.00	41.00	80.95			104.43	-8.1	5.00	40.40	82.24			104.43	-8.1	5.00	40.40	82.24			104.38	-8.0	5.00	39.81	83.53			103.47	-5.9	5.00	29.32	106.81			103.42	-5.7	5.00	28.75	108.11			103.42	-5.7	5.00	28.75	108.11			103.37	-5.6	5.00	28.18	109.40			102.67	-4.1	5.00	20.38	127.51			102.62	-4.0	5.00	19.83	128.80			102.62	-4.0	50.00	198.33	231.76			102.57	-3.9	50.00	192.88	235.24			102.47	-3.6	50.00	182.06	242.20			102.42	-3.5	50.00	176.69	245.69			102.42	-3.5	50.00	176.69	245.69			102.37	-3.4	50.00	171.33	249.17			102.32	-3.3	50.00	166.00	252.65			102.27	-3.2	50.00	160.69	256.13			102.27	-3.2	50.00	160.69	256.13			102.22	-3.1	50.00	155.40	259.61			101.46	-1.6	50.00	78.68	311.82			101.41	-1.5	50.00	73.72	315.31			101.41	-1.5	50.00	73.72	315.31			101.36	-1.4	50.00	68.77	318.79			101.16	-1.0	50.00	49.13	332.71			101.11	-0.9	50.00	44.25	336.19			101.11	-0.9	50.00	44.25	336.19			101.06	-0.8	50.00	39.38	339.67			100.45	0.4	50.00	-18.42	381.44			100.40	0.5	50.00	-23.20	384.93			100.40	0.5	50.00	-23.20	384.93			100.35	0.6	50.00	-27.98	388.41			100.00	1.2	50.00	-61.43	412.77			99.95	1.3	50.00	-66.20	416.25		
106.15	-12.3	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																													
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105.95	-11.8	0.00	0.00	4.98																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.74	-11.2	2.21	24.89	24.89																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.69	-11.1	2.21	24.61	29.87																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.69	-11.1	2.69	29.87	29.87																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.64	-11.0	2.69	29.56	34.29																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.55	-10.8	4.00	43.13	43.13																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.50	-10.7	4.00	42.68	47.55																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.50	-10.7	4.46	47.55	47.55																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.45	-10.6	4.46	47.06	51.83																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.45	-10.6	4.91	51.83	51.83																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.41	-10.4	4.91	51.29	56.11																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.41	-10.4	5.37	56.11	56.11																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.36	-10.3	5.37	55.52	60.39																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.36	-10.3	5.84	60.39	60.39																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.32	-10.2	5.84	59.75	64.67																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.32	-10.2	4.98	50.93	50.93																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.27	-10.1	4.98	50.28	53.68																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.05	-9.6	5.00	47.90	64.68																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.00	-9.5	5.00	47.26	67.43																																																																																																																																																																																																																																																																																																																																																																																																																																													
105.00	-9.5	5.00	47.26	67.43																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.93	-9.3	5.00	46.38	69.31																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.93	-9.3	5.00	46.38	69.31																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.88	-9.2	5.00	45.78	70.60																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.48	-8.2	5.00	41.00	80.95																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.43	-8.1	5.00	40.40	82.24																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.43	-8.1	5.00	40.40	82.24																																																																																																																																																																																																																																																																																																																																																																																																																																													
104.38	-8.0	5.00	39.81	83.53																																																																																																																																																																																																																																																																																																																																																																																																																																													
103.47	-5.9	5.00	29.32	106.81																																																																																																																																																																																																																																																																																																																																																																																																																																													
103.42	-5.7	5.00	28.75	108.11																																																																																																																																																																																																																																																																																																																																																																																																																																													
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103.37	-5.6	5.00	28.18	109.40																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.67	-4.1	5.00	20.38	127.51																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.62	-4.0	5.00	19.83	128.80																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.62	-4.0	50.00	198.33	231.76																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.57	-3.9	50.00	192.88	235.24																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.47	-3.6	50.00	182.06	242.20																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.42	-3.5	50.00	176.69	245.69																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.42	-3.5	50.00	176.69	245.69																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.37	-3.4	50.00	171.33	249.17																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.32	-3.3	50.00	166.00	252.65																																																																																																																																																																																																																																																																																																																																																																																																																																													
102.27	-3.2	50.00	160.69	256.13																																																																																																																																																																																																																																																																																																																																																																																																																																													
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102.22	-3.1	50.00	155.40	259.61																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.46	-1.6	50.00	78.68	311.82																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.41	-1.5	50.00	73.72	315.31																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.41	-1.5	50.00	73.72	315.31																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.36	-1.4	50.00	68.77	318.79																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.16	-1.0	50.00	49.13	332.71																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.11	-0.9	50.00	44.25	336.19																																																																																																																																																																																																																																																																																																																																																																																																																																													
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101.06	-0.8	50.00	39.38	339.67																																																																																																																																																																																																																																																																																																																																																																																																																																													
100.45	0.4	50.00	-18.42	381.44																																																																																																																																																																																																																																																																																																																																																																																																																																													
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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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{s,k} = 141.92 \text{ kN/m}</math> <math>G'_{s,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 43.29 \text{ kN/m}</math> (<math>E_{ah,k} = 257.00 \text{ kN/m}</math>) <math>B_{v,k} = 108.91</math> Summe <math>V_{s,k} = 76.30 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 146.85 / 1.40 = 104.89 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 969.94 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 49.78 + 0.00 = 220.09 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{s,d} / R_{d} = 220.09 / 969.94 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			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	99.95	55.00	s3: Flussskies, -sand
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	99.95	55.00	s3: Flussskies, -sand															
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1111																
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 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 4 Datei: 02_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.45 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 <math>\mu_e = 236.319 / 238.606 = 0.990</math> Bettungslager <math>B_{h,d} = 236.319</math> kN/m Erdwiderstand <math>E_{ph,d} = 238.606</math> kN/m</div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/12
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1112
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<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-104.36</td><td>-90.39</td><td>-90.39</td><td>-8.20</td><td>6.900E+4</td><td>2.100E+7</td><td>-115.24</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-12.4</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.0</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.4</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-104.36</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-104.36</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\00_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>-0.0108</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>a,k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>104.400</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.250</td><td>23.343</td><td>23.343</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-104.36	-90.39	-90.39	-8.20	6.900E+4	2.100E+7	-115.24	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-12.4	0.0	-104.36	0.00	0.00	-0.90	106.95	-12.5	0.0	-104.36	0.00	0.00	-0.90	106.95	-12.5	0.0	-104.36	0.00	0.00	-0.80	106.95	-12.7	0.0	-104.36	0.00	0.00	-0.70	106.95	-12.8	0.0	-104.36	0.00	0.00	-0.60	106.95	-13.0	0.0	-104.36	0.00	0.00	-0.50	106.95	-13.1	0.0	-104.36	0.00	0.00	-0.40	106.95	-13.3	0.0	-104.36	0.00	0.00	-0.30	106.95	-13.4	0.0	-104.36	0.00	0.00	-0.20	106.95	-13.6	0.0	-104.36	0.00	0.00	-0.10	106.95	-13.7	0.0	-104.36	0.00	0.00	0.00	106.95	-13.9	0.0	-104.36	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0108	Schicht	UK	γ <sub>m,k</sub>	γ <sub>a,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	104.400	23.343	23.343	5.00	5.00	104.400	104.250	23.343	23.343	5.00	5.00	104.250	103.400	23.343	23.343	5.00	5.00
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																																			
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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>35.313</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>35.313</td><td>39.416</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>39.416</td><td>43.519</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.999</td><td>43.519</td><td>45.365</td><td>5.00</td><td>5.00</td></tr><tr><td>98.999</td><td>80.000</td><td>45.365</td><td>123.290</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.80</td></tr><tr><td>99.45</td><td>99.00</td><td>-131.80</td><td>-150.94</td></tr><tr><td>99.00</td><td>80.00</td><td>-150.94</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>-16.1</td><td>-4.0</td><td>-104.4</td></tr><tr><td>106.95</td><td>-16.7</td><td>88.2</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.9</td><td>86.2</td><td>1.6</td><td></td></tr><tr><td>106.45</td><td>-33.5</td><td>72.1</td><td>36.1</td><td></td></tr><tr><td>106.20</td><td>-41.9</td><td>64.0</td><td>53.2</td><td></td></tr><tr><td>105.50</td><td>-65.3</td><td>41.5</td><td>90.1</td><td></td></tr><tr><td>105.45</td><td>-67.0</td><td>39.9</td><td>92.1</td><td></td></tr><tr><td>105.32</td><td>-71.3</td><td>35.5</td><td>97.0</td><td></td></tr><tr><td>105.00</td><td>-81.1</td><td>23.9</td><td>106.6</td><td></td></tr><tr><td>104.40</td><td>-98.4</td><td>4.2</td><td>115.0</td><td></td></tr><tr><td>104.25</td><td>-102.8</td><td>-0.7</td><td>115.3</td><td></td></tr><tr><td>103.40</td><td>-127.4</td><td>-28.6</td><td>102.8</td><td></td></tr><tr><td>102.62</td><td>-150.0</td><td>-54.2</td><td>70.5</td><td></td></tr><tr><td>102.55</td><td>-152.3</td><td>-56.5</td><td>66.6</td><td></td></tr><tr><td>102.45</td><td>-155.0</td><td>-60.5</td><td>60.8</td><td></td></tr><tr><td>101.85</td><td>-161.0</td><td>-68.7</td><td>20.6</td><td></td></tr><tr><td>101.45</td><td>-158.8</td><td>-59.4</td><td>-5.4</td><td></td></tr><tr><td>100.45</td><td>-133.6</td><td>10.3</td><td>-33.9</td><td></td></tr><tr><td>99.45</td><td>-127.7</td><td>26.6</td><td>-6.8</td><td></td></tr><tr><td>99.00</td><td>-135.5</td><td>0.0</td><td>0.0</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></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>-14.6</td><td>-14.0</td><td>-3.5</td><td>-90.4</td></tr><tr><td>106.95</td><td>-14.6</td><td>76.4</td><td>-3.5</td><td></td></tr><tr><td>106.89</td><td>-16.4</td><td>74.6</td><td>1.3</td><td></td></tr><tr><td>106.45</td><td>-29.1</td><td>62.4</td><td>31.2</td><td></td></tr><tr><td>106.20</td><td>-36.5</td><td>55.3</td><td>46.0</td><td></td></tr><tr><td>105.50</td><td>-56.8</td><td>35.8</td><td>77.8</td><td></td></tr></table>								103.400	102.620	23.343	23.343	5.00	5.00	102.620	102.550	23.343	23.343	5.00	5.00	102.550	102.450	30.799	31.210	5.00	5.00	102.450	101.850	31.210	33.671	5.00	5.00	101.850	101.450	33.671	35.313	5.00	5.00	101.450	100.449	35.313	39.416	5.00	5.00	100.449	99.449	39.416	43.519	5.00	5.00	99.449	98.999	43.519	45.365	5.00	5.00	98.999	80.000	45.365	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	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	-89.29	100.45	99.45	-89.29	-131.80	99.45	99.00	-131.80	-150.94	99.00	80.00	-150.94	-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	-16.1	-4.0	-104.4	106.95	-16.7	88.2	-4.0		106.89	-18.9	86.2	1.6		106.45	-33.5	72.1	36.1		106.20	-41.9	64.0	53.2		105.50	-65.3	41.5	90.1		105.45	-67.0	39.9	92.1		105.32	-71.3	35.5	97.0		105.00	-81.1	23.9	106.6		104.40	-98.4	4.2	115.0		104.25	-102.8	-0.7	115.3		103.40	-127.4	-28.6	102.8		102.62	-150.0	-54.2	70.5		102.55	-152.3	-56.5	66.6		102.45	-155.0	-60.5	60.8		101.85	-161.0	-68.7	20.6		101.45	-158.8	-59.4	-5.4		100.45	-133.6	10.3	-33.9		99.45	-127.7	26.6	-6.8		99.00	-135.5	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		106.95	-14.6	-14.0	-3.5	-90.4	106.95	-14.6	76.4	-3.5		106.89	-16.4	74.6	1.3		106.45	-29.1	62.4	31.2		106.20	-36.5	55.3	46.0		105.50	-56.8	35.8	77.8	
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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>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>-14.6</td><td>-14.0</td><td>-3.5</td><td>-90.4</td></tr><tr><td>106.95</td><td>-14.6</td><td>76.4</td><td>-3.5</td><td></td></tr><tr><td>106.89</td><td>-16.4</td><td>74.6</td><td>1.3</td><td></td></tr><tr><td>106.45</td><td>-29.1</td><td>62.4</td><td>31.2</td><td></td></tr><tr><td>106.20</td><td>-36.5</td><td>55.3</td><td>46.0</td><td></td></tr><tr><td>105.50</td><td>-56.8</td><td>35.8</td><td>77.8</td><td></td></tr><tr><td>105.45</td><td>-58.2</td><td>34.4</td><td>79.6</td><td></td></tr><tr><td>105.32</td><td>-62.0</td><td>30.6</td><td>83.8</td><td></td></tr><tr><td>105.00</td><td>-70.5</td><td>20.5</td><td>92.0</td><td></td></tr><tr><td>104.40</td><td>-85.6</td><td>3.5</td><td>99.2</td><td></td></tr><tr><td>104.25</td><td>-89.4</td><td>-0.7</td><td>99.4</td><td></td></tr><tr><td>103.40</td><td>-110.8</td><td>-24.8</td><td>88.5</td><td></td></tr><tr><td>102.62</td><td>-130.4</td><td>-46.9</td><td>60.5</td><td></td></tr><tr><td>102.55</td><td>-132.4</td><td>-48.9</td><td>57.2</td><td></td></tr><tr><td>102.45</td><td>-134.8</td><td>-52.4</td><td>52.1</td><td></td></tr><tr><td>101.85</td><td>-140.0</td><td>-59.4</td><td>17.4</td><td></td></tr><tr><td>101.45</td><td>-138.1</td><td>-51.3</td><td>-5.1</td><td></td></tr><tr><td>100.45</td><td>-116.2</td><td>9.1</td><td>-29.6</td><td></td></tr><tr><td>99.45</td><td>-111.1</td><td>23.1</td><td>-5.9</td><td></td></tr><tr><td>99.00</td><td>-117.8</td><td>0.0</td><td>0.0</td><td></td></tr></table> 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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>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.41</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.27</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.67</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.8</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-5.7</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-5.7</td><td>0.60</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-5.6</td><td>0.60</td><td>3.40</td><td>6.91</td></tr><tr><td>102.45</td><td>-5.6</td><td>1.23</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-5.5</td><td>1.23</td><td>6.80</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.7</td><td>9.65</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-4.6</td><td>9.65</td><td>44.05</td><td>48.36</td></tr><tr><td>101.85</td><td>-4.6</td><td>10.60</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-4.5</td><td>10.60</td><td>47.42</td><td>51.82</td></tr><tr><td>101.50</td><td>-3.9</td><td>18.42</td><td>72.55</td><td>72.54</td></tr><tr><td>101.45</td><td>-3.8</td><td>18.42</td><td>70.90</td><td>76.00</td></tr><tr><td>101.45</td><td>-3.8</td><td>19.75</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-3.8</td><td>19.75</td><td>74.24</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.2</td><td>50.00</td><td>108.20</td><td>141.64</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>103.83</td><td>145.09</td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>103.83</td><td>145.09</td></tr><tr><td>100.40</td><td>-2.0</td><td>50.00</td><td>99.46</td><td>148.54</td></tr><tr><td>99.50</td><td>-0.4</td><td>50.00</td><td>21.65</td><td>210.73</td></tr><tr><td>99.45</td><td>-0.3</td><td>50.00</td><td>17.36</td><td>214.18</td></tr><tr><td>99.45</td><td>-0.3</td><td>50.00</td><td>17.36</td><td>214.18</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.7	-	-	-	107.40	-12.6	-	-	-	107.00	-12.1	-	-	-	106.95	-12.1	-	-	-	106.95	-12.1	-	-	-	106.89	-12.0	-	-	-	106.89	-12.0	-	-	-	106.84	-11.9	-	-	-	106.50	-11.5	-	-	-	106.45	-11.5	-	-	-	106.45	-11.5	-	-	-	106.40	-11.4	-	-	-	106.25	-11.2	-	-	-	106.20	-11.2	-	-	-	106.20	-11.2	-	-	-	106.15	-11.1	-	-	-	105.55	-10.4	-	-	-	105.50	-10.3	-	-	-	105.50	-10.3	-	-	-	105.45	-10.2	-	-	-	105.45	-10.2	-	-	-	105.41	-10.2	-	-	-	105.36	-10.1	-	-	-	105.32	-10.1	-	-	-	105.32	-10.1	-	-	-	105.27	-10.0	-	-	-	105.05	-9.7	-	-	-	105.00	-9.6	-	-	-	105.00	-9.6	-	-	-	104.95	-9.6	-	-	-	104.45	-8.9	-	-	-	104.40	-8.8	-	-	-	104.40	-8.8	-	-	-	104.35	-8.7	-	-	-	104.30	-8.6	-	-	-	104.25	-8.6	-	-	-	104.25	-8.6	-	-	-	104.20	-8.5	-	-	-	103.45	-7.3	-	-	-	103.40	-7.2	-	-	-	103.40	-7.2	-	-	-	103.35	-7.2	-	-	-	102.67	-6.0	-	-	-	102.62	-5.9	-	-	-	102.62	-5.9	-	-	-	102.55	-5.8	0.00	0.00	0.00	102.55	-5.8	0.00	0.00	0.00	102.50	-5.7	0.00	0.00	3.45	102.50	-5.7	0.60	3.45	3.45	102.45	-5.6	0.60	3.40	6.91	102.45	-5.6	1.23	6.91	6.91	102.40	-5.5	1.23	6.80	10.36	101.90	-4.7	9.65	44.91	44.91	101.85	-4.6	9.65	44.05	48.36	101.85	-4.6	10.60	48.36	48.36	101.80	-4.5	10.60	47.42	51.82	101.50	-3.9	18.42	72.55	72.54	101.45	-3.8	18.42	70.90	76.00	101.45	-3.8	19.75	76.00	76.00	101.40	-3.8	19.75	74.24	79.45	100.50	-2.2	50.00	108.20	141.64	100.45	-2.1	50.00	103.83	145.09	100.45	-2.1	50.00	103.83	145.09	100.40	-2.0	50.00	99.46	148.54	99.50	-0.4	50.00	21.65	210.73	99.45	-0.3	50.00	17.36	214.18	99.45	-0.3	50.00	17.36	214.18
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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><div>99.40</div><div>-0.3</div><div>50.00</div><div>13.07</div><div>217.63</div></div><div><div>99.05</div><div>0.3</div><div>50.00</div><div>-16.95</div><div>241.82</div></div><div><div>99.00</div><div>0.4</div><div>50.00</div><div>-21.24</div><div>245.27</div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.09824389</div><div>Theoretischer Fußpunkt = 98.999 m</div></div><div><div>Einbindetiefe tg = 3.55 m</div><div>Profillänge = 8.45 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 &gt;= Bv,k</div><div>G,k = 159.90 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 45.23 kN/m (Eah,k = 261.06 kN/m)</div><div>Bv,k = 81.31</div><div>Summe V,k = 123.82 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 99.88 bis 96.36 m) ==&gt; 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>99.00</div><div>55.00</div><div>s3: Flussskies, -sand</div></div></div><div>Mantelfläche bis 99.00 m = 1.000 m²/m/m ==&gt; Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 195.25 / 1.40 = 139.46 kN/m</div><div>Rd = Rb,d + Rs1,d = 1004.51 kN/m</div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 191.88 - 0.00 + 52.01 + 0.00 = 243.89 kN/m</div><div>==&gt; µ = V,d / Rd = 243.89 / 1004.51 = 0.24</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/17
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1117
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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<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 4 Datei: 03_BS 4_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><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>1.75</td><td>1.25</td><td>0.29</td><td>0.28</td><td>0.69</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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</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>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th></tr><tr><td>1</td><td>10.00</td><td>0.00</td><td>1.75</td><td>107.45</td><td>107.45</td><td>107.45</td><td>105.69</td><td>104.93</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 = 8.70 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 <math>\mu_e = 275.502 / 275.543 = 1.000</math> Bettungslager <math>B_{h,d} = 275.502</math> kN/m Erdwiderstand <math>E_{ph,d} = 275.543</math> 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	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	1.75	107.45	107.45	107.45	105.69	104.93	nein	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	50.000	50.000
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<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>Nw,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>-127.59</td><td>-110.58</td><td>-110.58</td><td>-8.38</td><td>6.900E+4</td><td>2.100E+7</td><td>-140.99</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><th>x</th><th>y</th><th>wx,d</th><th>wy,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>-12.4</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.6</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.6</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.5</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-14.0</td><td>0.0</td><td>-127.59</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.2</td><td>0.1</td><td>-127.59</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\00_BS 4_LF1.1 (ohne Lasten).vrb</div> <div>eingelesen.</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>-0.0108</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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>105.32</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 &gt; 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>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>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><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>34.226</td><td>34.226</td><td>0.00</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><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><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><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><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><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><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><td>0.93</td></tr><tr><td>105.407</td><td>105.320</td><td>34.226</td><td>34.226</td><td>0.93</td><td>1.80</td></tr><tr><td>105.320</td><td>105.000</td><td>34.226</td><td>34.226</td><td>1.80</td><td>5.00</td></tr></table>								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	-127.59	-110.58	-110.58	-8.38	6.900E+4	2.100E+7	-140.99	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	-12.4	0.0	-127.59	0.00	0.00	-0.90	106.95	-12.6	0.0	-127.59	0.00	0.00	-0.90	106.95	-12.6	0.0	-127.59	0.00	0.00	-0.80	106.95	-12.8	0.0	-127.59	0.00	0.00	-0.70	106.95	-12.9	0.0	-127.59	0.00	0.00	-0.60	106.95	-13.1	0.0	-127.59	0.00	0.00	-0.50	106.95	-13.3	0.0	-127.59	0.00	0.00	-0.40	106.95	-13.5	0.0	-127.59	0.00	0.00	-0.30	106.95	-13.7	0.0	-127.59	0.00	0.00	-0.20	106.95	-13.9	0.0	-127.59	0.00	0.00	-0.10	106.95	-14.0	0.0	-127.59	0.00	0.00	0.00	106.95	-14.2	0.1	-127.59	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0108	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	107.448	34.226	34.226	0.00	0.00	107.448	106.950	34.226	34.226	0.00	0.00	106.950	106.886	34.226	34.226	0.00	0.00	106.886	106.450	34.226	34.226	0.00	0.00	106.450	106.198	34.226	34.226	0.00	0.00	106.198	105.686	34.226	34.226	0.00	0.00	105.686	105.500	34.226	34.226	0.00	0.00	105.500	105.407	34.226	34.226	0.00	0.93	105.407	105.320	34.226	34.226	0.93	1.80	105.320	105.000	34.226	34.226	1.80	5.00	<div>statistisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>		Seite Anlage D11/19	
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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>104.250</td><td>28.521</td><td>28.521</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</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>47.085</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.749</td><td>47.085</td><td>49.957</td><td>5.00</td><td>5.00</td></tr><tr><td>98.749</td><td>80.000</td><td>49.957</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>-131.80</td></tr><tr><td>99.45</td><td>98.75</td><td>-131.80</td><td>-161.56</td></tr><tr><td>98.75</td><td>80.00</td><td>-161.56</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>-127.6</td></tr><tr><td>106.95</td><td>-18.0</td><td>107.9</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.4</td><td>105.4</td><td>1.9</td><td></td></tr><tr><td>106.45</td><td>-36.1</td><td>88.2</td><td>44.1</td><td></td></tr><tr><td>106.20</td><td>-45.2</td><td>78.3</td><td>65.1</td><td></td></tr><tr><td>105.69</td><td>-63.7</td><td>58.2</td><td>100.0</td><td></td></tr><tr><td>105.50</td><td>-70.4</td><td>50.8</td><td>110.2</td><td></td></tr><tr><td>105.41</td><td>-73.8</td><td>47.1</td><td>114.7</td><td></td></tr><tr><td>105.32</td><td>-76.9</td><td>43.6</td><td>118.7</td><td></td></tr><tr><td>105.00</td><td>-87.2</td><td>29.7</td><td>130.4</td><td></td></tr><tr><td>104.93</td><td>-89.4</td><td>26.8</td><td>132.5</td><td></td></tr><tr><td>104.45</td><td>-104.0</td><td>8.3</td><td>140.9</td><td></td></tr><tr><td>104.25</td><td>-110.1</td><td>0.6</td><td>141.7</td><td></td></tr><tr><td>103.40</td><td>-136.1</td><td>-32.4</td><td>128.2</td><td></td></tr><tr><td>102.62</td><td>-159.9</td><td>-62.7</td><td>91.1</td><td></td></tr><tr><td>102.55</td><td>-162.4</td><td>-65.4</td><td>86.6</td><td></td></tr><tr><td>102.45</td><td>-165.2</td><td>-69.8</td><td>79.9</td><td></td></tr><tr><td>101.85</td><td>-171.2</td><td>-80.5</td><td>33.4</td><td></td></tr><tr><td>101.45</td><td>-169.0</td><td>-72.7</td><td>2.4</td><td></td></tr><tr><td>100.45</td><td>-141.9</td><td>-2.6</td><td>-41.0</td><td></td></tr><tr><td>99.45</td><td>-125.6</td><td>35.9</td><td>-15.6</td><td></td></tr><tr><td>98.75</td><td>-135.6</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	104.250	28.521	28.521	5.00	5.00	104.250	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	47.085	5.00	5.00	99.449	98.749	47.085	49.957	5.00	5.00	98.749	80.000	49.957	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	-131.80	99.45	98.75	-131.80	-161.56	98.75	80.00	-161.56	-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	-127.6	106.95	-18.0	107.9	-4.9		106.89	-20.4	105.4	1.9		106.45	-36.1	88.2	44.1		106.20	-45.2	78.3	65.1		105.69	-63.7	58.2	100.0		105.50	-70.4	50.8	110.2		105.41	-73.8	47.1	114.7		105.32	-76.9	43.6	118.7		105.00	-87.2	29.7	130.4		104.93	-89.4	26.8	132.5		104.45	-104.0	8.3	140.9		104.25	-110.1	0.6	141.7		103.40	-136.1	-32.4	128.2		102.62	-159.9	-62.7	91.1		102.55	-162.4	-65.4	86.6		102.45	-165.2	-69.8	79.9		101.85	-171.2	-80.5	33.4		101.45	-169.0	-72.7	2.4		100.45	-141.9	-2.6	-41.0		99.45	-125.6	35.9	-15.6		98.75	-135.6	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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<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>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.69</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.69</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.64</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>105.45</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.41</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.41</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.27</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.93</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.93</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.88</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</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><tr><td>102.67</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr></table>						104.45	0.0	0.0	0.0	104.25	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	98.75	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.9	-	-	-	107.45	-12.9	-	-	-	107.45	-12.9	-	-	-	107.40	-12.9	-	-	-	107.00	-12.4	-	-	-	106.95	-12.4	-	-	-	106.95	-12.4	-	-	-	106.89	-12.3	-	-	-	106.89	-12.3	-	-	-	106.84	-12.2	-	-	-	106.50	-11.9	-	-	-	106.45	-11.8	-	-	-	106.45	-11.8	-	-	-	106.40	-11.8	-	-	-	106.25	-11.6	-	-	-	106.20	-11.6	-	-	-	106.20	-11.6	-	-	-	106.15	-11.5	-	-	-	105.74	-11.0	-	-	-	105.69	-11.0	-	-	-	105.69	-11.0	-	-	-	105.64	-10.9	-	-	-	105.55	-10.8	-	-	-	105.50	-10.7	-	-	-	105.50	-10.7	-	-	-	105.45	-10.7	-	-	-	105.45	-10.7	-	-	-	105.41	-10.6	-	-	-	105.41	-10.6	-	-	-	105.36	-10.6	-	-	-	105.36	-10.6	-	-	-	105.32	-10.5	-	-	-	105.32	-10.5	-	-	-	105.27	-10.5	-	-	-	105.05	-10.2	-	-	-	105.00	-10.1	-	-	-	105.00	-10.1	-	-	-	104.95	-10.1	-	-	-	104.95	-10.1	-	-	-	104.93	-10.0	-	-	-	104.93	-10.0	-	-	-	104.88	-10.0	-	-	-	104.50	-9.4	-	-	-	104.45	-9.4	-	-	-	104.45	-9.4	-	-	-	104.40	-9.3	-	-	-	104.30	-9.2	-	-	-	104.25	-9.1	-	-	-	104.25	-9.1	-	-	-	104.20	-9.0	-	-	-	103.45	-7.9	-	-	-	103.40	-7.8	-	-	-	103.40	-7.8	-	-	-	103.35	-7.7	-	-	-	102.67	-6.6	-	-	-
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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>102.62</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-6.3</td><td>0.55</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-6.2</td><td>0.55</td><td>3.41</td><td>6.91</td></tr><tr><td>102.45</td><td>-6.2</td><td>1.12</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-6.1</td><td>1.12</td><td>6.81</td><td>10.36</td></tr><tr><td>101.90</td><td>-5.2</td><td>8.66</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-5.1</td><td>8.66</td><td>44.12</td><td>48.36</td></tr><tr><td>101.85</td><td>-5.1</td><td>9.49</td><td>48.36</td><td>48.36</td></tr><tr><td>101.80</td><td>-5.0</td><td>9.49</td><td>47.50</td><td>51.82</td></tr><tr><td>101.50</td><td>-4.5</td><td>16.28</td><td>72.55</td><td>72.54</td></tr><tr><td>101.45</td><td>-4.4</td><td>16.28</td><td>71.06</td><td>76.00</td></tr><tr><td>101.45</td><td>-4.4</td><td>17.41</td><td>76.00</td><td>76.00</td></tr><tr><td>101.40</td><td>-4.3</td><td>17.41</td><td>74.41</td><td>79.45</td></tr><tr><td>100.50</td><td>-2.6</td><td>50.00</td><td>132.02</td><td>141.63</td></tr><tr><td>100.45</td><td>-2.6</td><td>50.00</td><td>127.54</td><td>145.09</td></tr><tr><td>100.45</td><td>-2.6</td><td>50.00</td><td>127.54</td><td>145.09</td></tr><tr><td>100.40</td><td>-2.5</td><td>50.00</td><td>123.07</td><td>148.54</td></tr><tr><td>99.50</td><td>-0.9</td><td>50.00</td><td>43.74</td><td>210.72</td></tr><tr><td>99.45</td><td>-0.8</td><td>50.00</td><td>39.38</td><td>214.18</td></tr><tr><td>99.45</td><td>-0.8</td><td>50.00</td><td>39.38</td><td>214.18</td></tr><tr><td>99.40</td><td>-0.7</td><td>50.00</td><td>35.02</td><td>217.63</td></tr><tr><td>98.80</td><td>0.3</td><td>50.00</td><td>-17.14</td><td>259.08</td></tr><tr><td>98.75</td><td>0.4</td><td>50.00</td><td>-21.48</td><td>262.54</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09951383 Theoretischer Fußpunkt = 98.749 m</p> <p>Einbindetiefe tg = 3.80 m Profillänge = 8.70 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 164.63 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 54.62 kN/m (Eah,k = 314.00 kN/m) Bv,k = 94.83 Summe V,k = 124.41 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 99.63 bis 96.11 m) ==&gt; 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 98.75 55.00 s3: Flussskies, -sand Mantelfläche bis 98.75 m = 1.000 m²/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 209.00 / 1.40 = 149.29 kN/m Rd = Rb,d + Rs1,d = 1014.33 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 197.56 - 0.00 + 62.81 + 0.00 = 260.36 kN/m ==&gt; µ = V,d / Rd = 260.36 / 1014.33 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.62	-6.5	-	-	-	102.62	-6.5	-	-	-	102.55	-6.3	0.00	0.00	0.00	102.55	-6.3	0.00	0.00	0.00	102.50	-6.3	0.00	0.00	3.45	102.50	-6.3	0.55	3.45	3.45	102.45	-6.2	0.55	3.41	6.91	102.45	-6.2	1.12	6.91	6.91	102.40	-6.1	1.12	6.81	10.36	101.90	-5.2	8.66	44.91	44.91	101.85	-5.1	8.66	44.12	48.36	101.85	-5.1	9.49	48.36	48.36	101.80	-5.0	9.49	47.50	51.82	101.50	-4.5	16.28	72.55	72.54	101.45	-4.4	16.28	71.06	76.00	101.45	-4.4	17.41	76.00	76.00	101.40	-4.3	17.41	74.41	79.45	100.50	-2.6	50.00	132.02	141.63	100.45	-2.6	50.00	127.54	145.09	100.45	-2.6	50.00	127.54	145.09	100.40	-2.5	50.00	123.07	148.54	99.50	-0.9	50.00	43.74	210.72	99.45	-0.8	50.00	39.38	214.18	99.45	-0.8	50.00	39.38	214.18	99.40	-0.7	50.00	35.02	217.63	98.80	0.3	50.00	-17.14	259.08	98.75	0.4	50.00	-21.48	262.54
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Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/23																																																																																																																																							
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 23																																																																																																																																							
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>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: 04_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</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 = 9.15 m</div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/24
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

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 89.182 / 89.329 = 0.998$   
Bettungslager  $B_{h,d} = 89.182 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 89.329 \text{ kN/m}$

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	-405.88	-339.92	-253.74	-50.30	3.900E+7	2.100E+7	-452.79 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	$w_{x,d}$	$w_{y,d}$	$N_{d'}$	$Q_{d'}$	$M_{d'}$
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-8.30	103.72	-9.0	0.0	-406.35	0.00	0.00
-7.47	103.72	-9.0	0.0	-406.35	0.00	0.00
-7.47	103.72	-9.0	0.0	-406.35	0.00	0.00
-6.64	103.72	-9.0	0.0	-406.35	0.00	0.00
-5.81	103.72	-9.0	0.0	-406.35	0.00	0.00
-4.98	103.72	-9.0	0.0	-406.35	0.00	0.00
-4.15	103.72	-9.0	0.0	-406.35	0.00	0.00
-3.32	103.72	-9.0	0.0	-406.35	0.00	0.00
-2.49	103.72	-9.0	0.0	-406.35	0.00	0.00
-1.66	103.72	-9.0	0.0	-406.35	0.00	0.00
-0.83	103.72	-9.0	0.1	-406.35	0.00	0.00
0.00	103.72	-9.1	0.1	-406.35	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0078

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 D1	Schnitt 4R	Seite Anlage D1/25
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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																				
<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>37.854</td><td>0.00</td><td>0.00</td></tr><tr><td>101.700</td><td>100.699</td><td>37.854</td><td>41.957</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>100.099</td><td>41.957</td><td>44.419</td><td>0.00</td><td>0.00</td></tr><tr><td>100.099</td><td>99.699</td><td>44.419</td><td>46.060</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>99.549</td><td>46.060</td><td>46.676</td><td>0.00</td><td>0.00</td></tr><tr><td>99.549</td><td>80.000</td><td>46.676</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>-78.66</td></tr><tr><td>100.70</td><td>100.10</td><td>-78.66</td><td>-104.17</td></tr><tr><td>100.10</td><td>99.70</td><td>-104.17</td><td>-121.18</td></tr><tr><td>99.70</td><td>99.55</td><td>-121.18</td><td>-127.56</td></tr><tr><td>99.55</td><td>80.00</td><td>-127.56</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>-406.3</td></tr><tr><td>103.72</td><td>-223.5</td><td>202.7</td><td>-471.4</td><td></td></tr><tr><td>103.65</td><td>-225.9</td><td>197.9</td><td>-457.4</td><td></td></tr><tr><td>102.66</td><td>-260.8</td><td>120.0</td><td>-298.7</td><td></td></tr><tr><td>102.62</td><td>-262.3</td><td>116.5</td><td>-294.0</td><td></td></tr><tr><td>102.55</td><td>-264.9</td><td>111.3</td><td>-286.0</td><td></td></tr><tr><td>101.70</td><td>-273.7</td><td>102.1</td><td>-198.9</td><td></td></tr><tr><td>100.70</td><td>-270.7</td><td>118.2</td><td>-83.5</td><td></td></tr><tr><td>100.10</td><td>-278.5</td><td>76.6</td><td>-22.8</td><td></td></tr><tr><td>99.70</td><td>-274.8</td><td>24.5</td><td>-1.9</td><td></td></tr><tr><td>99.55</td><td>-271.5</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	37.854	0.00	0.00	101.700	100.699	37.854	41.957	0.00	0.00	100.699	100.099	41.957	44.419	0.00	0.00	100.099	99.699	44.419	46.060	0.00	0.00	99.699	99.549	46.060	46.676	0.00	0.00	99.549	80.000	46.676	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	-78.66	100.70	100.10	-78.66	-104.17	100.10	99.70	-104.17	-121.18	99.70	99.55	-121.18	-127.56	99.55	80.00	-127.56	-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	-406.3	103.72	-223.5	202.7	-471.4		103.65	-225.9	197.9	-457.4		102.66	-260.8	120.0	-298.7		102.62	-262.3	116.5	-294.0		102.55	-264.9	111.3	-286.0		101.70	-273.7	102.1	-198.9		100.70	-270.7	118.2	-83.5		100.10	-278.5	76.6	-22.8		99.70	-274.8	24.5	-1.9		99.55	-271.5	0.0	0.0	
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<div><div>Schnittgrößen 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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>103.72-14.2-39.1-145.1-95.6</div><div>103.72-14.247.1-145.1</div><div>103.65-14.247.1-141.8</div><div>102.66-14.247.1-95.2</div><div>102.62-14.247.1-93.3</div><div>102.55-14.247.1-90.0</div><div>101.70-15.444.2-50.7</div><div>100.70-22.825.5-14.7</div><div>100.10-22.312.3-3.4</div><div>99.70-18.73.4-0.3</div><div>99.55-17.40.00.0</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>-27.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-27.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-27.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-27.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-27.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.64</td><td>-27.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-23.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-23.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-23.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-23.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-22.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-22.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-22.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-22.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.64</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.64</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.59</td><td>-18.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.79</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-4.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.66</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.66</td><td>-4.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.62</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-4.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-4.5</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></table></div></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.70	-27.8	-	-	-	108.70	-27.8	-	-	-	108.70	-27.8	-	-	-	108.69	-27.8	-	-	-	108.69	-27.8	-	-	-	108.64	-27.6	-	-	-	107.75	-23.7	-	-	-	107.70	-23.5	-	-	-	107.70	-23.5	-	-	-	107.65	-23.3	-	-	-	107.50	-22.7	-	-	-	107.45	-22.5	-	-	-	107.45	-22.5	-	-	-	107.40	-22.2	-	-	-	106.75	-19.5	-	-	-	106.70	-19.3	-	-	-	106.70	-19.3	-	-	-	106.64	-19.0	-	-	-	106.64	-19.0	-	-	-	106.59	-18.8	-	-	-	105.79	-15.5	-	-	-	105.74	-15.3	-	-	-	105.74	-15.3	-	-	-	105.70	-15.1	-	-	-	105.70	-15.1	-	-	-	105.65	-14.9	-	-	-	105.55	-14.5	-	-	-	105.50	-14.3	-	-	-	105.50	-14.3	-	-	-	105.45	-14.2	-	-	-	105.36	-13.8	-	-	-	105.32	-13.6	-	-	-	105.32	-13.6	-	-	-	105.26	-13.4	-	-	-	104.70	-11.3	-	-	-	104.65	-11.1	-	-	-	104.65	-11.1	-	-	-	104.60	-10.9	-	-	-	103.77	-8.0	-	-	-	103.72	-7.9	-	-	-	103.72	-7.9	-	-	-	103.70	-7.8	-	-	-	103.70	-7.8	-	-	-	103.65	-7.7	-	-	-	103.65	-7.7	-	-	-	103.60	-7.5	-	-	-	102.70	-4.9	-	-	-	102.66	-4.8	-	-	-	102.66	-4.8	-	-	-	102.62	-4.7	-	-	-	102.62	-4.7	-	-	-	102.55	-4.5	0.00	0.00	0.00	102.55	-4.5	0.00	0.00	0.00	102.50	-4.4	0.00	0.00	3.45
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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>101.75</td><td>-2.6</td><td>21.19</td><td>55.28</td><td>55.28</td></tr><tr><td>101.70</td><td>-2.5</td><td>21.19</td><td>52.86</td><td>58.73</td></tr><tr><td>101.70</td><td>-2.5</td><td>23.54</td><td>58.73</td><td>58.73</td></tr><tr><td>101.65</td><td>-2.4</td><td>23.54</td><td>56.06</td><td>62.19</td></tr><tr><td>100.75</td><td>-0.4</td><td>50.00</td><td>21.90</td><td>124.37</td></tr><tr><td>100.70</td><td>-0.3</td><td>50.00</td><td>16.71</td><td>127.83</td></tr><tr><td>100.70</td><td>-0.3</td><td>50.00</td><td>16.71</td><td>127.83</td></tr><tr><td>100.65</td><td>-0.2</td><td>50.00</td><td>11.54</td><td>131.28</td></tr><tr><td>100.15</td><td>0.8</td><td>50.00</td><td>-39.59</td><td>165.83</td></tr><tr><td>100.10</td><td>0.9</td><td>50.00</td><td>-44.67</td><td>169.28</td></tr><tr><td>100.10</td><td>0.9</td><td>50.00</td><td>-44.67</td><td>169.28</td></tr><tr><td>100.05</td><td>1.0</td><td>50.00</td><td>-49.73</td><td>172.74</td></tr><tr><td>99.75</td><td>1.6</td><td>50.00</td><td>-80.09</td><td>193.47</td></tr><tr><td>99.70</td><td>1.7</td><td>50.00</td><td>-85.15</td><td>196.92</td></tr><tr><td>99.70</td><td>1.7</td><td>50.00</td><td>-85.15</td><td>196.92</td></tr><tr><td>99.65</td><td>1.8</td><td>50.00</td><td>-90.20</td><td>200.38</td></tr><tr><td>99.60</td><td>1.9</td><td>50.00</td><td>-95.26</td><td>203.83</td></tr><tr><td>99.55</td><td>2.0</td><td>50.00</td><td>-100.31</td><td>207.28</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.11580094 Theoretischer Fußpunkt = 99.549 m</p> <p>Einbindetiefe tg = 3.00 m Profillänge = 9.15 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k G,k = 173.14 kN/m G',k = 0.00 kN/m Pv,k = 45.50 kN/m Eav,k = 56.48 kN/m (Eah,k = 327.64 kN/m) Bv,k = 32.17 Summe V,k = 242.95 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 Verhältnisswert (min, max) = 0.00 Spitzendruck qc,m = 7.50 MN/m² (gemittelt von 100.43 bis 96.91 m) ==&gt; 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 99.55 55.00 s3: Flussskies, -sand Mantelfläche bis 99.55 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 165.00 / 1.40 = 117.86 kN/m R,d = Rb,d + R,s1,d = 982.91 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 207.77 - 0.00 + 66.02 + 54.60 = 328.40 kN/m ==&gt; µ = V,d / R,d = 328.40 / 982.91 = 0.33</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						101.75	-2.6	21.19	55.28	55.28	101.70	-2.5	21.19	52.86	58.73	101.70	-2.5	23.54	58.73	58.73	101.65	-2.4	23.54	56.06	62.19	100.75	-0.4	50.00	21.90	124.37	100.70	-0.3	50.00	16.71	127.83	100.70	-0.3	50.00	16.71	127.83	100.65	-0.2	50.00	11.54	131.28	100.15	0.8	50.00	-39.59	165.83	100.10	0.9	50.00	-44.67	169.28	100.10	0.9	50.00	-44.67	169.28	100.05	1.0	50.00	-49.73	172.74	99.75	1.6	50.00	-80.09	193.47	99.70	1.7	50.00	-85.15	196.92	99.70	1.7	50.00	-85.15	196.92	99.65	1.8	50.00	-90.20	200.38	99.60	1.9	50.00	-95.26	203.83	99.55	2.0	50.00	-100.31	207.28
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Schnitt:		Anlage D1 Schnitt 4R		Seite Anlage D1/29																																																																																											
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11129																																																																																											
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>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: 05_BS 4_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 = 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 = 10.55 m</div>		
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/30
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

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 280.763 / 280.902 = 1.000$   
Bettungslager  $B_{h,d} = 280.763 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 280.902 \text{ kN/m}$

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	-239.17	-185.16	-185.16	-49.51	3.900E+7	2.100E+7	-236.08

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	-9.9	0.0	-239.80	0.00	0.00
-7.47	103.72	-10.0	0.0	-239.80	0.00	0.00
-7.47	103.72	-10.0	0.0	-239.80	0.00	0.00
-6.64	103.72	-10.0	0.0	-239.80	0.00	0.00
-5.81	103.72	-10.0	0.0	-239.80	0.00	0.00
-4.98	103.72	-10.0	0.0	-239.80	0.00	0.00
-4.15	103.72	-10.0	0.0	-239.80	0.00	0.00
-3.32	103.72	-10.0	0.0	-239.80	0.00	0.00
-2.49	103.72	-10.0	0.1	-239.80	0.00	0.00
-1.66	103.72	-10.0	0.1	-239.80	0.00	0.00
-0.83	103.72	-10.0	0.1	-239.80	0.00	0.00
0.00	103.72	-10.0	0.1	-239.80	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0078

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 D1	Schnitt 4R	Seite Anlage D1/31
Kapitel: 6	LF 4 (BS-P, 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>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>98.149</td><td>48.378</td><td>50.635</td><td>0.00</td><td>0.00</td></tr><tr><td>98.149</td><td>80.000</td><td>50.635</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>98.15</td><td>-163.31</td><td>-185.03</td></tr><tr><td>98.15</td><td>80.00</td><td>-185.03</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>-239.8</td></tr><tr><td>103.72</td><td>-223.7</td><td>83.6</td><td>-282.7</td><td></td></tr><tr><td>103.65</td><td>-226.3</td><td>78.4</td><td>-277.0</td><td></td></tr><tr><td>102.66</td><td>-264.2</td><td>-5.2</td><td>-239.2</td><td></td></tr><tr><td>102.62</td><td>-265.8</td><td>-9.0</td><td>-239.5</td><td></td></tr><tr><td>102.55</td><td>-268.6</td><td>-14.6</td><td>-240.4</td><td></td></tr><tr><td>102.10</td><td>-272.5</td><td>-16.0</td><td>-248.1</td><td></td></tr><tr><td>101.70</td><td>-269.5</td><td>-2.2</td><td>-252.2</td><td></td></tr><tr><td>100.70</td><td>-241.2</td><td>80.9</td><td>-216.3</td><td></td></tr><tr><td>99.70</td><td>-231.0</td><td>113.0</td><td>-111.9</td><td></td></tr><tr><td>98.70</td><td>-247.4</td><td>61.6</td><td>-18.0</td><td></td></tr><tr><td>98.15</td><td>-250.0</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	98.149	48.378	50.635	0.00	0.00	98.149	80.000	50.635	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	98.15	-163.31	-185.03	98.15	80.00	-185.03	-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	-239.8	103.72	-223.7	83.6	-282.7		103.65	-226.3	78.4	-277.0		102.66	-264.2	-5.2	-239.2		102.62	-265.8	-9.0	-239.5		102.55	-268.6	-14.6	-240.4		102.10	-272.5	-16.0	-248.1		101.70	-269.5	-2.2	-252.2		100.70	-241.2	80.9	-216.3		99.70	-231.0	113.0	-111.9		98.70	-247.4	61.6	-18.0		98.15	-250.0	0.0	0.0	
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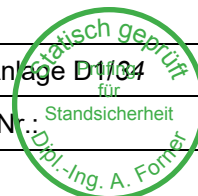
Dipl.-Ing. A. Forner



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Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 103																																																																																																																																																																																																																																																																																																																																										
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> 100.70    0.0    0.0    0.0  99.70    0.0    0.0    0.0  98.70    0.0    0.0    0.0  98.15    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   -22.1   -   -   -  108.70   -22.1   -   -   -  108.70   -22.1   -   -   -  108.69   -22.1   -   -   -  108.69   -22.1   -   -   -  108.64   -21.9   -   -   -  107.75   -19.2   -   -   -  107.70   -19.1   -   -   -  107.70   -19.1   -   -   -  107.65   -18.9   -   -   -  107.50   -18.5   -   -   -  107.45   -18.3   -   -   -  107.45   -18.3   -   -   -  107.40   -18.2   -   -   -  106.75   -16.2   -   -   -  106.70   -16.1   -   -   -  106.70   -16.1   -   -   -  106.65   -15.9   -   -   -  105.70   -13.2   -   -   -  105.65   -13.0   -   -   -  105.65   -13.0   -   -   -  105.60   -12.9   -   -   -  105.55   -12.7   -   -   -  105.50   -12.6   -   -   -  105.50   -12.6   -   -   -  105.45   -12.5   -   -   -  105.36   -12.2   -   -   -  105.32   -12.1   -   -   -  105.32   -12.1   -   -   -  105.26   -11.9   -   -   -  104.70   -10.4   -   -   -  104.65   -10.2   -   -   -  104.65   -10.2   -   -   -  104.60   -10.1   -   -   -  103.77   -8.0   -   -   -  103.72   -7.8   -   -   -  103.72   -7.8   -   -   -  103.70   -7.8   -   -   -  103.70   -7.8   -   -   -  103.65   -7.7   -   -   -  103.65   -7.7   -   -   -  103.60   -7.6   -   -   -  102.70   -5.5   -   -   -  102.66   -5.5   -   -   -  102.66   -5.5   -   -   -  102.62   -5.4   -   -   -  102.62   -5.4   -   -   -  102.55   -5.2   0.00   0.00   0.00  102.55   -5.2   0.00   0.00   19.82  102.50   -5.1   0.00   0.00   23.27  102.15   -4.4   10.68   47.45   47.45  102.10   -4.3   10.68   46.44   50.91  102.10   -4.3   11.70   50.91   50.91  102.05   -4.3   11.70   49.81   54.36  101.75   -3.7   20.25   75.09   75.09  101.70   -3.6   20.25   73.30   78.54  101.70   -3.6   21.70   78.54   78.54  101.65   -3.5   21.70   76.65   82.00  100.75   -2.1   50.00   104.89   144.17  100.70   -2.0   50.00   101.27   147.63  100.70   -2.0   50.00   101.27   147.63  100.65   -2.0   50.00   97.70   151.08 </div> </div>		
Schnitt:	Anlage D1    Schnitt 4R	Seite Anlage D1/34
Kapitel:	6    LF 4 (BS-P, mit Lasten)	Archiv Nr.: 1034
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>99.75 -0.8 50.00 38.59 213.26</div> <div>99.70 -0.7 50.00 35.55 216.71</div> <div>99.70 -0.7 50.00 35.55 216.71</div> <div>99.65 -0.7 50.00 32.52 220.17</div> <div>98.75 0.4 50.00 -19.83 282.34</div> <div>98.70 0.5 50.00 -22.67 285.80</div> <div>98.70 0.5 50.00 -22.67 285.80</div> <div>98.65 0.5 50.00 -25.50 289.25</div> <div>98.20 1.0 50.00 -50.95 320.34</div> <div>98.15 1.1 50.00 -53.77 323.80</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.06472247</div> <div>Theoretischer Fußpunkt = 98.149 m</div> <div>Einbindetiefe tg = 4.40 m</div> <div>Profillänge = 10.55 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k</div> <div>G,k = 199.64 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 45.50 kN/m</div> <div>Eav,k = 59.46 kN/m (Eah,k = 336.60 kN/m)</div> <div>Bv,k = 87.65</div> <div>Summe V,k = 216.95 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 99.03 bis 95.51 m) ==&gt; 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>98.15</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table></div> <div>Mantelfläche bis 98.15 m = 1.000 m²/m/m ==&gt; 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 = 269.51 - 0.00 + 75.81 + 61.43 = 406.75 kN/m</div> <div>=&gt; µ = V,d / Rd = 406.75 / 1037.91 = 0.39</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.15	55.00	s3: Flusskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung							
102.55	98.15	55.00	s3: Flusskies, -sand							
Schnitt: Anlage D1 Schnitt 4R		Seite Anlage D1/35								
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 22								
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 E1 Schnitt 5R</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 5 Datei: 00_BS 5_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 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 mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 7.50 m</div> <div>Bettungsmodule 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</div> <div>Ausnutzungsgrad mue = 293.342 / 550.770 = 0.533 Bettungslager Bh,d = 293.342 kN/m Erdwiderstand Eph,d = 550.770 kN/m</div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/19.
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 119. für Standsicherheit Dipl.-Ing. A. Forner
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>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 &gt; 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>102.200</td><td>30.193</td><td>31.219</td><td>5.00</td><td>5.00</td></tr><tr><td>102.200</td><td>101.449</td><td>31.219</td><td>34.297</td><td>5.00</td><td>5.00</td></tr><tr><td>101.449</td><td>101.099</td><td>34.297</td><td>35.733</td><td>5.00</td><td>5.00</td></tr><tr><td>101.099</td><td>100.449</td><td>35.733</td><td>38.400</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.949</td><td>38.400</td><td>40.452</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>40.452</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><tr><td>103.45</td><td>102.60</td><td>-64.26</td><td>-77.75</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	102.200	30.193	31.219	5.00	5.00	102.200	101.449	31.219	34.297	5.00	5.00	101.449	101.099	34.297	35.733	5.00	5.00	101.099	100.449	35.733	38.400	5.00	5.00	100.449	99.949	38.400	40.452	5.00	5.00	99.949	80.000	40.452	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	103.45	102.60	-64.26	-77.75	<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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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>102.60102.45-139.63-146.01</div><div>102.45102.20-146.01-156.64</div><div>102.20101.45-156.64-188.53</div><div>101.45101.10-188.53-203.41</div><div>101.10100.45-203.41-231.05</div><div>100.4599.95-231.05-252.31</div><div>99.9580.00-252.31-1100.18</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>105.50-44.7-16.3-14.5</div><div>105.40-45.7-15.0-16.1</div><div>105.00-49.6-11.8-21.3</div><div>104.45-55.8-12.8-27.8</div><div>103.45-69.0-26.3-46.1</div><div>102.60-82.4-49.4-77.5</div><div>102.45-75.2-28.9-83.4</div><div>102.20-65.00.2-86.9</div><div>101.45-48.051.7-64.0</div><div>101.10-46.857.8-44.6</div><div>100.45-55.439.6-10.8</div><div>99.95-60.80.00.0</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>106.89-11.1-1.2-0.2</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>105.50-38.9-14.2-12.6</div><div>105.40-39.8-13.1-14.0</div><div>105.00-43.2-10.3-18.5</div><div>104.45-48.5-11.1-24.3</div><div>103.45-60.1-22.7-40.1</div><div>102.60-71.7-42.7-67.3</div><div>102.45-65.4-25.0-72.4</div><div>102.20-56.60.3-75.3</div><div>101.45-41.844.8-55.5</div><div>101.10-40.750.1-38.6</div><div>100.45-48.234.4-9.4</div><div>99.95-52.90.00.0</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>105.50-38.9-14.2-12.6</div><div>105.40-39.8-13.1-14.0</div><div>105.00-43.2-10.3-18.5</div><div>104.45-48.5-11.1-24.3</div><div>103.45-60.1-22.7-40.1</div><div>102.60-71.7-42.7-67.3</div><div>102.45-65.4-25.0-72.4</div><div>102.20-56.60.3-75.3</div><div>101.45-41.844.8-55.5</div><div>101.10-40.750.1-38.6</div></div></div></div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 119
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>100.45   -48.2   34.4   -9.4 99.95   -52.9   0.0   0.0</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   0.0 106.89   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   0.0 105.50   0.0   0.0   0.0 105.40   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   0.0 102.20   0.0   0.0   0.0 101.45   0.0   0.0   0.0 101.10   0.0   0.0   0.0 100.45   0.0   0.0   0.0 99.95   0.0   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   w   ks   sig,Bh,k   eph,k</div><div>[m]   [mm]   [kN/m³]   [kN/m²]   [kN/m²]</div><div>107.45   -11.8   -   -   - 107.40   -11.7   -   -   - 106.95   -10.9   -   -   - 106.89   -10.8   -   -   - 106.89   -10.8   -   -   - 106.84   -10.7   -   -   - 106.50   -10.1   -   -   - 106.45   -10.0   -   -   - 106.45   -10.0   -   -   - 106.40   -9.9   -   -   - 106.30   -9.7   -   -   - 106.25   -9.6   -   -   - 106.25   -9.6   -   -   - 106.20   -9.6   -   -   - 106.05   -9.3   -   -   - 106.00   -9.2   0.00   0.00   0.00 106.00   -9.2   0.00   0.00   0.00 105.95   -9.1   0.00   0.00   4.52 105.86   -8.9   1.52   13.55   13.55 105.81   -8.8   1.52   13.42   18.07 105.81   -8.8   2.57   22.68   22.68 105.76   -8.7   2.57   22.44   25.35 105.55   -8.4   4.30   36.01   36.01 105.50   -8.3   4.30   35.60   38.67 105.50   -8.3   4.67   38.67   38.67 105.45   -8.2   4.67   38.25   41.25 105.45   -8.2   5.00   40.91   41.25 105.40   -8.1   5.00   40.45   43.83 105.40   -8.1   5.00   40.45   43.83 105.35   -8.0   5.00   40.00   46.41 105.05   -7.5   5.00   37.29   61.88 105.00   -7.4   5.00   36.84   64.46 105.00   -7.4   5.00   36.84   64.46 104.95   -7.3   5.00   36.39   65.75 104.50   -6.5   5.00   32.36   77.35 104.45   -6.4   5.00   31.91   78.64 104.45   -6.4   5.00   31.91   78.64 104.40   -6.3   5.00   31.47   79.93 103.50   -4.7   5.00   23.56   103.13 103.45   -4.6   5.00   23.12   104.42 103.45   -4.6   5.00   23.12   104.42 103.40   -4.5   5.00   22.69   105.71</div></div></div></div></div></div>		
Schnitt: Anlage E1   Schnitt 5R		Seite Anlage E1/4
Kapitel: 1   LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 114
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>102.65</td><td>-3.3</td><td>5.00</td><td>16.34</td><td>125.05</td></tr><tr><td>102.60</td><td>-3.2</td><td>5.00</td><td>15.92</td><td>126.34</td></tr><tr><td>102.60</td><td>-3.2</td><td>50.00</td><td>159.25</td><td>226.90</td></tr><tr><td>102.55</td><td>-3.1</td><td>50.00</td><td>155.12</td><td>230.35</td></tr><tr><td>102.50</td><td>-3.0</td><td>50.00</td><td>151.01</td><td>233.81</td></tr><tr><td>102.45</td><td>-2.9</td><td>50.00</td><td>146.91</td><td>237.26</td></tr><tr><td>102.45</td><td>-2.9</td><td>50.00</td><td>146.91</td><td>237.26</td></tr><tr><td>102.40</td><td>-2.9</td><td>50.00</td><td>142.83</td><td>240.72</td></tr><tr><td>102.25</td><td>-2.6</td><td>50.00</td><td>130.67</td><td>251.08</td></tr><tr><td>102.20</td><td>-2.5</td><td>50.00</td><td>126.66</td><td>254.54</td></tr><tr><td>102.20</td><td>-2.5</td><td>50.00</td><td>126.66</td><td>254.54</td></tr><tr><td>102.15</td><td>-2.5</td><td>50.00</td><td>122.65</td><td>257.99</td></tr><tr><td>101.50</td><td>-1.4</td><td>50.00</td><td>72.00</td><td>302.91</td></tr><tr><td>101.45</td><td>-1.4</td><td>50.00</td><td>68.20</td><td>306.36</td></tr><tr><td>101.45</td><td>-1.4</td><td>50.00</td><td>68.20</td><td>306.36</td></tr><tr><td>101.40</td><td>-1.3</td><td>50.00</td><td>64.42</td><td>309.82</td></tr><tr><td>101.15</td><td>-0.9</td><td>50.00</td><td>45.64</td><td>327.09</td></tr><tr><td>101.10</td><td>-0.8</td><td>50.00</td><td>41.91</td><td>330.55</td></tr><tr><td>101.10</td><td>-0.8</td><td>50.00</td><td>41.91</td><td>330.55</td></tr><tr><td>101.05</td><td>-0.8</td><td>50.00</td><td>38.19</td><td>334.00</td></tr><tr><td>100.50</td><td>0.0</td><td>50.00</td><td>-2.33</td><td>372.00</td></tr><tr><td>100.45</td><td>0.1</td><td>50.00</td><td>-5.99</td><td>375.46</td></tr><tr><td>100.45</td><td>0.1</td><td>50.00</td><td>-5.99</td><td>375.46</td></tr><tr><td>100.40</td><td>0.2</td><td>50.00</td><td>-9.64</td><td>378.91</td></tr><tr><td>100.00</td><td>0.8</td><td>50.00</td><td>-38.87</td><td>406.55</td></tr><tr><td>99.95</td><td>0.9</td><td>50.00</td><td>-42.53</td><td>410.01</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08366393 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 141.92 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 35.62 kN/m (Eah,k = 215.05 kN/m) Bv,k = 89.06 Summe V,k = 88.48 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 100.83 bis 97.31 m) ==&gt; 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>105.81</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>99.95</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 145.75 / 1.40 = 104.11 kN/m R,d = Rb,d + R,s1,d = 969.16 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 170.31 - 0.00 + 40.96 + 0.00 = 211.27 kN/m ==&gt; µ = V,d / R,d = 211.27 / 969.16 = 0.22</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.65	-3.3	5.00	16.34	125.05	102.60	-3.2	5.00	15.92	126.34	102.60	-3.2	50.00	159.25	226.90	102.55	-3.1	50.00	155.12	230.35	102.50	-3.0	50.00	151.01	233.81	102.45	-2.9	50.00	146.91	237.26	102.45	-2.9	50.00	146.91	237.26	102.40	-2.9	50.00	142.83	240.72	102.25	-2.6	50.00	130.67	251.08	102.20	-2.5	50.00	126.66	254.54	102.20	-2.5	50.00	126.66	254.54	102.15	-2.5	50.00	122.65	257.99	101.50	-1.4	50.00	72.00	302.91	101.45	-1.4	50.00	68.20	306.36	101.45	-1.4	50.00	68.20	306.36	101.40	-1.3	50.00	64.42	309.82	101.15	-0.9	50.00	45.64	327.09	101.10	-0.8	50.00	41.91	330.55	101.10	-0.8	50.00	41.91	330.55	101.05	-0.8	50.00	38.19	334.00	100.50	0.0	50.00	-2.33	372.00	100.45	0.1	50.00	-5.99	375.46	100.45	0.1	50.00	-5.99	375.46	100.40	0.2	50.00	-9.64	378.91	100.00	0.8	50.00	-38.87	406.55	99.95	0.9	50.00	-42.53	410.01	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.81	0.00	S1: Auffüllungen	105.81	102.60	0.00	S2: Auelehm	102.60	99.95	55.00	s3: Flusskies, -sand
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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>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: 01_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 = 7.50 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 E1 Schnitt 5R		Seite Anlage E1/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 109 für Standsicherheit
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025





Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																					
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<div>Ausnutzungsgrad <math>\mu_e = 351.920 / 516.897 = 0.681</math> Bettungslager <math>B_{h,d} = 351.920 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 516.897 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.81</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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>105.81</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 (<math>[g+q],k</math>)</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>9.770</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>102.250</td><td>33.760</td><td>34.581</td><td>5.00</td><td>5.00</td></tr><tr><td>102.250</td><td>101.449</td><td>34.581</td><td>37.863</td><td>5.00</td><td>5.00</td></tr><tr><td>101.449</td><td>101.099</td><td>37.863</td><td>39.300</td><td>5.00</td><td>5.00</td></tr><tr><td>101.099</td><td>100.449</td><td>39.300</td><td>41.967</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.949</td><td>41.967</td><td>44.019</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>44.019</td><td>125.840</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><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>1</td><td>105.81</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><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>106.25</td><td>106.00</td><td>0.00</td><td>0.00</td></tr></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	105.81	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	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	9.770	0.00	0.00	106.886	106.450	9.770	20.174	0.00	0.00	106.450	106.253	20.175	24.878	0.00	0.00	106.253	106.000	24.878	27.044	0.00	0.00	106.000	105.815	27.044	28.416	0.00	0.00	105.815	105.810	28.416	28.424	0.00	0.00	105.810	105.500	34.850	35.232	0.00	0.00	105.500	105.447	35.232	35.070	0.00	0.53	105.447	105.127	35.070	34.104	0.53	3.73	105.127	105.000	34.104	34.644	3.73	5.00	105.000	104.450	34.644	36.984	5.00	5.00	104.450	103.450	36.984	41.239	5.00	5.00	103.450	102.600	41.239	44.856	5.00	5.00	102.600	102.450	33.144	33.760	5.00	5.00	102.450	102.250	33.760	34.581	5.00	5.00	102.250	101.449	34.581	37.863	5.00	5.00	101.449	101.099	37.863	39.300	5.00	5.00	101.099	100.449	39.300	41.967	5.00	5.00	100.449	99.949	41.967	44.019	5.00	5.00	99.949	80.000	44.019	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	106.00	Schicht	UK	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	<div>Statisch geprüft</div> <div>17.06.2024</div> <div>für</div> <div>Standicherheit</div> <div>Dipl.-Ing. A. Forner</div>
Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi_i$	$d(a)/\phi_i$	$q_c$	$c_{u,k}$																																																																																																																																																																																																																																																																																													
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<table><tr><td>106.00</td><td>105.81</td><td>0.00</td><td>-10.84</td></tr><tr><td>105.81</td><td>105.81</td><td>-10.84</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>105.45</td><td>-23.80</td><td>-25.49</td></tr><tr><td>105.45</td><td>105.13</td><td>-25.49</td><td>-35.63</td></tr><tr><td>105.13</td><td>105.00</td><td>-35.63</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><tr><td>103.45</td><td>102.60</td><td>-64.26</td><td>-77.75</td></tr><tr><td>102.60</td><td>102.45</td><td>-139.63</td><td>-146.01</td></tr><tr><td>102.45</td><td>102.25</td><td>-146.01</td><td>-154.51</td></tr><tr><td>102.25</td><td>101.45</td><td>-154.51</td><td>-188.53</td></tr><tr><td>101.45</td><td>101.10</td><td>-188.53</td><td>-203.41</td></tr><tr><td>101.10</td><td>100.45</td><td>-203.41</td><td>-231.05</td></tr><tr><td>100.45</td><td>99.95</td><td>-231.05</td><td>-252.31</td></tr><tr><td>99.95</td><td>80.00</td><td>-252.31</td><td>-1100.18</td></tr></table> <p>Schnittgrößen (Bemessungswerte)</p> 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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> 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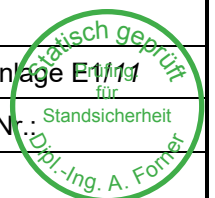
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<table><tr><td>106.00</td><td>-12.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-12.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-12.2</td><td>0.00</td><td>0.00</td><td>4.41</td></tr><tr><td>105.86</td><td>-11.9</td><td>1.11</td><td>13.22</td><td>13.22</td></tr><tr><td>105.81</td><td>-11.8</td><td>1.11</td><td>13.09</td><td>17.62</td></tr><tr><td>105.81</td><td>-11.8</td><td>1.49</td><td>17.62</td><td>17.62</td></tr><tr><td>105.81</td><td>-11.8</td><td>1.49</td><td>17.60</td><td>18.07</td></tr><tr><td>105.81</td><td>-11.8</td><td>1.92</td><td>22.68</td><td>22.68</td></tr><tr><td>105.76</td><td>-11.7</td><td>1.92</td><td>22.43</td><td>25.35</td></tr><tr><td>105.55</td><td>-11.1</td><td>3.23</td><td>36.01</td><td>36.01</td></tr><tr><td>105.50</td><td>-11.0</td><td>3.23</td><td>35.58</td><td>38.67</td></tr><tr><td>105.50</td><td>-11.0</td><td>3.51</td><td>38.67</td><td>38.67</td></tr><tr><td>105.45</td><td>-10.9</td><td>3.51</td><td>38.20</td><td>41.42</td></tr><tr><td>105.45</td><td>-10.9</td><td>3.81</td><td>41.42</td><td>41.42</td></tr><tr><td>105.39</td><td>-10.7</td><td>3.81</td><td>40.91</td><td>44.17</td></tr><tr><td>105.18</td><td>-10.2</td><td>5.00</td><td>51.02</td><td>55.16</td></tr><tr><td>105.13</td><td>-10.1</td><td>5.00</td><td>50.35</td><td>57.90</td></tr><tr><td>105.13</td><td>-10.1</td><td>5.00</td><td>50.35</td><td>57.90</td></tr><tr><td>105.08</td><td>-10.0</td><td>5.00</td><td>49.82</td><td>60.09</td></tr><tr><td>105.04</td><td>-9.9</td><td>5.00</td><td>49.29</td><td>62.27</td></tr><tr><td>105.00</td><td>-9.8</td><td>5.00</td><td>48.76</td><td>64.46</td></tr><tr><td>105.00</td><td>-9.8</td><td>5.00</td><td>48.76</td><td>64.46</td></tr><tr><td>104.95</td><td>-9.6</td><td>5.00</td><td>48.14</td><td>65.75</td></tr><tr><td>104.50</td><td>-8.5</td><td>5.00</td><td>42.55</td><td>77.35</td></tr><tr><td>104.45</td><td>-8.4</td><td>5.00</td><td>41.94</td><td>78.64</td></tr><tr><td>104.45</td><td>-8.4</td><td>5.00</td><td>41.94</td><td>78.64</td></tr><tr><td>104.40</td><td>-8.3</td><td>5.00</td><td>41.32</td><td>79.93</td></tr><tr><td>103.50</td><td>-6.1</td><td>5.00</td><td>30.46</td><td>103.13</td></tr><tr><td>103.45</td><td>-6.0</td><td>5.00</td><td>29.87</td><td>104.42</td></tr><tr><td>103.45</td><td>-6.0</td><td>5.00</td><td>29.87</td><td>104.42</td></tr><tr><td>103.40</td><td>-5.9</td><td>5.00</td><td>29.28</td><td>105.71</td></tr><tr><td>102.65</td><td>-4.1</td><td>5.00</td><td>20.63</td><td>125.05</td></tr><tr><td>102.60</td><td>-4.0</td><td>5.00</td><td>20.07</td><td>126.34</td></tr><tr><td>102.60</td><td>-4.0</td><td>50.00</td><td>200.73</td><td>226.90</td></tr><tr><td>102.55</td><td>-3.9</td><td>50.00</td><td>195.14</td><td>230.35</td></tr><tr><td>102.50</td><td>-3.8</td><td>50.00</td><td>189.57</td><td>233.81</td></tr><tr><td>102.45</td><td>-3.7</td><td>50.00</td><td>184.02</td><td>237.26</td></tr><tr><td>102.45</td><td>-3.7</td><td>50.00</td><td>184.02</td><td>237.26</td></tr><tr><td>102.40</td><td>-3.6</td><td>50.00</td><td>178.50</td><td>240.72</td></tr><tr><td>102.30</td><td>-3.4</td><td>50.00</td><td>167.52</td><td>247.63</td></tr><tr><td>102.25</td><td>-3.2</td><td>50.00</td><td>162.06</td><td>251.08</td></tr><tr><td>102.25</td><td>-3.2</td><td>50.00</td><td>162.06</td><td>251.08</td></tr><tr><td>102.20</td><td>-3.1</td><td>50.00</td><td>156.63</td><td>254.54</td></tr><tr><td>101.50</td><td>-1.7</td><td>50.00</td><td>82.89</td><td>302.91</td></tr><tr><td>101.45</td><td>-1.6</td><td>50.00</td><td>77.77</td><td>306.36</td></tr><tr><td>101.45</td><td>-1.6</td><td>50.00</td><td>77.77</td><td>306.36</td></tr><tr><td>101.40</td><td>-1.5</td><td>50.00</td><td>72.67</td><td>309.82</td></tr><tr><td>101.15</td><td>-0.9</td><td>50.00</td><td>47.38</td><td>327.09</td></tr><tr><td>101.10</td><td>-0.8</td><td>50.00</td><td>42.36</td><td>330.55</td></tr><tr><td>101.10</td><td>-0.8</td><td>50.00</td><td>42.36</td><td>330.55</td></tr><tr><td>101.05</td><td>-0.7</td><td>50.00</td><td>37.35</td><td>334.00</td></tr><tr><td>100.50</td><td>0.3</td><td>50.00</td><td>-17.19</td><td>372.00</td></tr><tr><td>100.45</td><td>0.4</td><td>50.00</td><td>-22.12</td><td>375.46</td></tr><tr><td>100.45</td><td>0.4</td><td>50.00</td><td>-22.12</td><td>375.46</td></tr><tr><td>100.40</td><td>0.5</td><td>50.00</td><td>-27.04</td><td>378.91</td></tr><tr><td>100.00</td><td>1.3</td><td>50.00</td><td>-66.38</td><td>406.55</td></tr><tr><td>99.95</td><td>1.4</td><td>50.00</td><td>-71.29</td><td>410.01</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.11259953 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p>							106.00	-12.3	0.00	0.00	0.00	106.00	-12.3	0.00	0.00	0.00	105.95	-12.2	0.00	0.00	4.41	105.86	-11.9	1.11	13.22	13.22	105.81	-11.8	1.11	13.09	17.62	105.81	-11.8	1.49	17.62	17.62	105.81	-11.8	1.49	17.60	18.07	105.81	-11.8	1.92	22.68	22.68	105.76	-11.7	1.92	22.43	25.35	105.55	-11.1	3.23	36.01	36.01	105.50	-11.0	3.23	35.58	38.67	105.50	-11.0	3.51	38.67	38.67	105.45	-10.9	3.51	38.20	41.42	105.45	-10.9	3.81	41.42	41.42	105.39	-10.7	3.81	40.91	44.17	105.18	-10.2	5.00	51.02	55.16	105.13	-10.1	5.00	50.35	57.90	105.13	-10.1	5.00	50.35	57.90	105.08	-10.0	5.00	49.82	60.09	105.04	-9.9	5.00	49.29	62.27	105.00	-9.8	5.00	48.76	64.46	105.00	-9.8	5.00	48.76	64.46	104.95	-9.6	5.00	48.14	65.75	104.50	-8.5	5.00	42.55	77.35	104.45	-8.4	5.00	41.94	78.64	104.45	-8.4	5.00	41.94	78.64	104.40	-8.3	5.00	41.32	79.93	103.50	-6.1	5.00	30.46	103.13	103.45	-6.0	5.00	29.87	104.42	103.45	-6.0	5.00	29.87	104.42	103.40	-5.9	5.00	29.28	105.71	102.65	-4.1	5.00	20.63	125.05	102.60	-4.0	5.00	20.07	126.34	102.60	-4.0	50.00	200.73	226.90	102.55	-3.9	50.00	195.14	230.35	102.50	-3.8	50.00	189.57	233.81	102.45	-3.7	50.00	184.02	237.26	102.45	-3.7	50.00	184.02	237.26	102.40	-3.6	50.00	178.50	240.72	102.30	-3.4	50.00	167.52	247.63	102.25	-3.2	50.00	162.06	251.08	102.25	-3.2	50.00	162.06	251.08	102.20	-3.1	50.00	156.63	254.54	101.50	-1.7	50.00	82.89	302.91	101.45	-1.6	50.00	77.77	306.36	101.45	-1.6	50.00	77.77	306.36	101.40	-1.5	50.00	72.67	309.82	101.15	-0.9	50.00	47.38	327.09	101.10	-0.8	50.00	42.36	330.55	101.10	-0.8	50.00	42.36	330.55	101.05	-0.7	50.00	37.35	334.00	100.50	0.3	50.00	-17.19	372.00	100.45	0.4	50.00	-22.12	375.46	100.45	0.4	50.00	-22.12	375.46	100.40	0.5	50.00	-27.04	378.91	100.00	1.3	50.00	-66.38	406.55	99.95	1.4	50.00	-71.29	410.01
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105.86	-11.9	1.11	13.22	13.22																																																																																																																																																																																																																																																																																															
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105.76	-11.7	1.92	22.43	25.35																																																																																																																																																																																																																																																																																															
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105.50	-11.0	3.51	38.67	38.67																																																																																																																																																																																																																																																																																															
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105.45	-10.9	3.81	41.42	41.42																																																																																																																																																																																																																																																																																															
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101.10	-0.8	50.00	42.36	330.55																																																																																																																																																																																																																																																																																															
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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: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{s,k} = 141.92 \text{ kN/m}</math></p> <p><math>G'_{s,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 41.75 \text{ kN/m}</math> (<math>E_{ah,k} = 252.53 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 106.34</math></p> <p>Summe <math>V_{k} = 77.34 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></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>99.95</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 145.75 / 1.40 = 104.11 \text{ kN/m}</math></p> <p><math>R_{d} = R_{b,d} + R_{s1,d} = 969.16 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{d} = G_{d} - G'_{s,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 48.01 + 0.00 = 218.32 \text{ kN/m}</math></p> <p><math>\Rightarrow \mu = V_{d} / R_{d} = 218.32 / 969.16 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>					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	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung																	
106.00	105.81	0.00	S1: Auffüllungen																	
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102.60	99.95	55.00	s3: Flussskies, -sand																	
Schnitt:	Anlage E1 Schnitt 5R		Seite Anlage E1	11/19																
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>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: 02_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</div> <div>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.50 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 <math>\mu_e = 236.523 / 238.603 = 0.991</math> Bettungslager <math>B_{h,d} = 236.523</math> kN/m Erdwiderstand <math>E_{ph,d} = 238.603</math> kN/m</div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/12
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr. 1112
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statistisch geprüft  
für  
Standsicherheit  
Dipl.-Ing. A. Forster



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																												
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<div>Anker und Steifen</div> <div>N<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-101.53</td><td>-87.93</td><td>-87.93</td><td>-8.20</td><td>6.900E+4</td><td>2.100E+7</td><td>-112.11</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-12.6</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.0</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.4</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-101.53</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.0</td><td>0.0</td><td>-101.53</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\00_BS 5_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>-0.0109</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ'<sub>m,k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>δ</td><td>θ</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>27.540</td><td>27.540</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></tr><tr><td>106.886</td><td>106.450</td><td>27.540</td><td>27.540</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></tr><tr><td>106.253</td><td>105.810</td><td>27.540</td><td>27.540</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></tr><tr><td>105.500</td><td>105.450</td><td>27.540</td><td>27.540</td><td>0.00</td></tr><tr><td>105.450</td><td>105.000</td><td>27.540</td><td>27.540</td><td>0.50</td></tr><tr><td>105.000</td><td>104.400</td><td>22.950</td><td>22.950</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>22.950</td><td>22.950</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>22.950</td><td>22.950</td><td>5.00</td></tr></table>								Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-101.53	-87.93	-87.93	-8.20	6.900E+4	2.100E+7	-112.11	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-12.6	0.0	-101.53	0.00	0.00	-0.90	106.95	-12.7	0.0	-101.53	0.00	0.00	-0.90	106.95	-12.7	0.0	-101.53	0.00	0.00	-0.80	106.95	-12.8	0.0	-101.53	0.00	0.00	-0.70	106.95	-13.0	0.0	-101.53	0.00	0.00	-0.60	106.95	-13.1	0.0	-101.53	0.00	0.00	-0.50	106.95	-13.3	0.0	-101.53	0.00	0.00	-0.40	106.95	-13.4	0.0	-101.53	0.00	0.00	-0.30	106.95	-13.6	0.0	-101.53	0.00	0.00	-0.20	106.95	-13.7	0.0	-101.53	0.00	0.00	-0.10	106.95	-13.9	0.0	-101.53	0.00	0.00	0.00	106.95	-14.0	0.0	-101.53	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0109	Schicht	UK	γ <sub>m,k</sub>	γ' <sub>m,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	δ	θ	k <sub>agh</sub> (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]	107.450	106.950	27.540	27.540	0.00	106.950	106.886	27.540	27.540	0.00	106.886	106.450	27.540	27.540	0.00	106.450	106.253	27.540	27.540	0.00	106.253	105.810	27.540	27.540	0.00	105.810	105.500	27.540	27.540	0.00	105.500	105.450	27.540	27.540	0.00	105.450	105.000	27.540	27.540	0.50	105.000	104.400	22.950	22.950	5.00	104.400	104.300	22.950	22.950	5.00	104.300	103.400	22.950	22.950	5.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																								
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-0.70	106.95	-13.0	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
-0.60	106.95	-13.1	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
-0.50	106.95	-13.3	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
-0.40	106.95	-13.4	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
-0.30	106.95	-13.6	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
-0.20	106.95	-13.7	0.0	-101.53	0.00	0.00																																																																																																																																																																																																																																																																																																												
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Schicht	UK	γ <sub>m,k</sub>	γ' <sub>m,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>																																																																																																																																																																																																																																																																																																								
[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	δ	θ	k <sub>agh</sub> (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																																																																																																																																																																																																																																																																																																											
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107.450	106.950	27.540	27.540	0.00																																																																																																																																																																																																																																																																																																														
106.950	106.886	27.540	27.540	0.00																																																																																																																																																																																																																																																																																																														
106.886	106.450	27.540	27.540	0.00																																																																																																																																																																																																																																																																																																														
106.450	106.253	27.540	27.540	0.00																																																																																																																																																																																																																																																																																																														
106.253	105.810	27.540	27.540	0.00																																																																																																																																																																																																																																																																																																														
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105.000	104.400	22.950	22.950	5.00																																																																																																																																																																																																																																																																																																														
104.400	104.300	22.950	22.950	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>102.600</td><td>22.950</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>102.600</td><td>102.550</td><td>22.950</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>29.783</td><td>30.193</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>30.193</td><td>32.655</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>32.655</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>42.502</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.949</td><td>42.502</td><td>44.554</td><td>5.00</td><td>5.00</td></tr><tr><td>98.949</td><td>80.000</td><td>44.554</td><td>122.273</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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><td></td><td></td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td></td><td></td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td><td></td><td></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><td></td><td></td></tr><tr><td>[mNHN]</td><td>[mNHN]</td><td>[kN/m²]</td><td>[kN/m²]</td><td></td><td></td></tr><tr><td>102.60</td><td>102.55</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>102.55</td><td>102.45</td><td>0.00</td><td>-4.25</td><td></td><td></td></tr><tr><td>102.45</td><td>101.85</td><td>-4.25</td><td>-29.76</td><td></td><td></td></tr><tr><td>101.85</td><td>101.45</td><td>-29.76</td><td>-46.77</td><td></td><td></td></tr><tr><td>101.45</td><td>100.45</td><td>-46.77</td><td>-89.29</td><td></td><td></td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.80</td><td></td><td></td></tr><tr><td>99.45</td><td>98.95</td><td>-131.80</td><td>-153.06</td><td></td><td></td></tr><tr><td>98.95</td><td>80.00</td><td>-153.06</td><td>-958.43</td><td></td><td></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><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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.95</td><td>-16.6</td><td>-15.8</td><td>-4.0</td><td>-101.5</td><td></td></tr><tr><td>106.95</td><td>-16.6</td><td>85.7</td><td>-4.0</td><td></td><td></td></tr><tr><td>106.89</td><td>-18.8</td><td>83.7</td><td>1.5</td><td></td><td></td></tr><tr><td>106.45</td><td>-33.3</td><td>69.9</td><td>34.9</td><td></td><td></td></tr><tr><td>106.25</td><td>-39.9</td><td>63.6</td><td>48.1</td><td></td><td></td></tr><tr><td>105.81</td><td>-54.6</td><td>49.6</td><td>73.2</td><td></td><td></td></tr><tr><td>105.50</td><td>-64.0</td><td>39.8</td><td>87.0</td><td></td><td></td></tr><tr><td>105.45</td><td>-65.5</td><td>38.2</td><td>89.0</td><td></td><td></td></tr><tr><td>105.00</td><td>-79.1</td><td>22.4</td><td>102.7</td><td></td><td></td></tr><tr><td>104.40</td><td>-96.4</td><td>3.0</td><td>110.3</td><td></td><td></td></tr><tr><td>104.30</td><td>-99.3</td><td>-0.2</td><td>110.5</td><td></td><td></td></tr><tr><td>103.40</td><td>-125.2</td><td>-29.4</td><td>97.1</td><td></td><td></td></tr><tr><td>102.60</td><td>-148.3</td><td>-55.3</td><td>63.3</td><td></td><td></td></tr><tr><td>102.55</td><td>-149.9</td><td>-56.9</td><td>60.4</td><td></td><td></td></tr><tr><td>102.45</td><td>-152.7</td><td>-60.8</td><td>54.6</td><td></td><td></td></tr><tr><td>101.85</td><td>-158.7</td><td>-68.3</td><td>14.5</td><td></td><td></td></tr><tr><td>101.45</td><td>-156.4</td><td>-58.5</td><td>-11.3</td><td></td><td></td></tr><tr><td>100.45</td><td>-131.2</td><td>12.3</td><td>-38.3</td><td></td><td></td></tr><tr><td>99.45</td><td>-125.3</td><td>29.9</td><td>-8.5</td><td></td><td></td></tr><tr><td>98.95</td><td>-133.7</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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.95</td><td>-14.5</td><td>-13.8</td><td>-3.4</td><td>-87.9</td><td></td></tr><tr><td>106.95</td><td>-14.5</td><td>74.2</td><td>-3.4</td><td></td><td></td></tr><tr><td>106.89</td><td>-16.3</td><td>72.4</td><td>1.2</td><td></td><td></td></tr><tr><td>106.45</td><td>-29.0</td><td>60.4</td><td>30.2</td><td></td><td></td></tr><tr><td>106.25</td><td>-34.7</td><td>55.0</td><td>41.6</td><td></td><td></td></tr><tr><td>105.81</td><td>-47.5</td><td>42.8</td><td>63.2</td><td></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	42.502	5.00	5.00	99.449	98.949	42.502	44.554	5.00	5.00	98.949	80.000	44.554	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	-89.29			100.45	99.45	-89.29	-131.80			99.45	98.95	-131.80	-153.06			98.95	80.00	-153.06	-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	-16.6	-15.8	-4.0	-101.5		106.95	-16.6	85.7	-4.0			106.89	-18.8	83.7	1.5			106.45	-33.3	69.9	34.9			106.25	-39.9	63.6	48.1			105.81	-54.6	49.6	73.2			105.50	-64.0	39.8	87.0			105.45	-65.5	38.2	89.0			105.00	-79.1	22.4	102.7			104.40	-96.4	3.0	110.3			104.30	-99.3	-0.2	110.5			103.40	-125.2	-29.4	97.1			102.60	-148.3	-55.3	63.3			102.55	-149.9	-56.9	60.4			102.45	-152.7	-60.8	54.6			101.85	-158.7	-68.3	14.5			101.45	-156.4	-58.5	-11.3			100.45	-131.2	12.3	-38.3			99.45	-125.3	29.9	-8.5			98.95	-133.7	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			106.95	-14.5	-13.8	-3.4	-87.9		106.95	-14.5	74.2	-3.4			106.89	-16.3	72.4	1.2			106.45	-29.0	60.4	30.2			106.25	-34.7	55.0	41.6			105.81	-47.5	42.8	63.2		
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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	-89.29																																																																																																																																																																																																																																																																																																																																																													
100.45	99.45	-89.29	-131.80																																																																																																																																																																																																																																																																																																																																																													
99.45	98.95	-131.80	-153.06																																																																																																																																																																																																																																																																																																																																																													
98.95	80.00	-153.06	-958.43																																																																																																																																																																																																																																																																																																																																																													
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105.45	-65.5	38.2	89.0																																																																																																																																																																																																																																																																																																																																																													
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102.60	-148.3	-55.3	63.3																																																																																																																																																																																																																																																																																																																																																													
102.55	-149.9	-56.9	60.4																																																																																																																																																																																																																																																																																																																																																													
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101.85	-158.7	-68.3	14.5																																																																																																																																																																																																																																																																																																																																																													
101.45	-156.4	-58.5	-11.3																																																																																																																																																																																																																																																																																																																																																													
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106.25	-34.7	55.0	41.6																																																																																																																																																																																																																																																																																																																																																													
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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>105.50</td><td>-55.6</td><td>34.2</td><td>75.1</td></tr><tr><td>105.45</td><td>-57.0</td><td>32.8</td><td>76.8</td></tr><tr><td>105.00</td><td>-68.8</td><td>19.2</td><td>88.6</td></tr><tr><td>104.40</td><td>-83.8</td><td>2.4</td><td>95.1</td></tr><tr><td>104.30</td><td>-86.3</td><td>-0.4</td><td>95.2</td></tr><tr><td>103.40</td><td>-108.9</td><td>-25.5</td><td>83.6</td></tr><tr><td>102.60</td><td>-129.0</td><td>-47.9</td><td>54.2</td></tr><tr><td>102.55</td><td>-130.4</td><td>-49.3</td><td>51.8</td></tr><tr><td>102.45</td><td>-132.8</td><td>-52.6</td><td>46.7</td></tr><tr><td>101.85</td><td>-138.0</td><td>-59.0</td><td>12.0</td></tr><tr><td>101.45</td><td>-136.1</td><td>-50.5</td><td>-10.2</td></tr><tr><td>100.45</td><td>-114.1</td><td>10.9</td><td>-33.4</td></tr><tr><td>99.45</td><td>-109.0</td><td>26.0</td><td>-7.4</td></tr><tr><td>98.95</td><td>-116.3</td><td>0.0</td><td>0.0</td></tr></table> <p>Schnittgrößen (g+w,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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>-14.5</td><td>-13.8</td><td>-3.4</td><td>-87.9</td></tr><tr><td>106.95</td><td>-14.5</td><td>74.2</td><td>-3.4</td><td></td></tr><tr><td>106.89</td><td>-16.3</td><td>72.4</td><td>1.2</td><td></td></tr><tr><td>106.45</td><td>-29.0</td><td>60.4</td><td>30.2</td><td></td></tr><tr><td>106.25</td><td>-34.7</td><td>55.0</td><td>41.6</td><td></td></tr><tr><td>105.81</td><td>-47.5</td><td>42.8</td><td>63.2</td><td></td></tr><tr><td>105.50</td><td>-55.6</td><td>34.2</td><td>75.1</td><td></td></tr><tr><td>105.45</td><td>-57.0</td><td>32.8</td><td>76.8</td><td></td></tr><tr><td>105.00</td><td>-68.8</td><td>19.2</td><td>88.6</td><td></td></tr><tr><td>104.40</td><td>-83.8</td><td>2.4</td><td>95.1</td><td></td></tr><tr><td>104.30</td><td>-86.3</td><td>-0.4</td><td>95.2</td><td></td></tr><tr><td>103.40</td><td>-108.9</td><td>-25.5</td><td>83.6</td><td></td></tr><tr><td>102.60</td><td>-129.0</td><td>-47.9</td><td>54.2</td><td></td></tr><tr><td>102.55</td><td>-130.4</td><td>-49.3</td><td>51.8</td><td></td></tr><tr><td>102.45</td><td>-132.8</td><td>-52.6</td><td>46.7</td><td></td></tr><tr><td>101.85</td><td>-138.0</td><td>-59.0</td><td>12.0</td><td></td></tr><tr><td>101.45</td><td>-136.1</td><td>-50.5</td><td>-10.2</td><td></td></tr><tr><td>100.45</td><td>-114.1</td><td>10.9</td><td>-33.4</td><td></td></tr><tr><td>99.45</td><td>-109.0</td><td>26.0</td><td>-7.4</td><td></td></tr><tr><td>98.95</td><td>-116.3</td><td>0.0</td><td>0.0</td><td></td></tr></table> <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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.95</td><td>0.0</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><td></td></tr><tr><td>106.45</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>105.81</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>105.45</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></td></tr><tr><td>104.40</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>104.30</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>103.40</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.60</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>101.85</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>98.95</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>107.45</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr></table>						105.50	-55.6	34.2	75.1	105.45	-57.0	32.8	76.8	105.00	-68.8	19.2	88.6	104.40	-83.8	2.4	95.1	104.30	-86.3	-0.4	95.2	103.40	-108.9	-25.5	83.6	102.60	-129.0	-47.9	54.2	102.55	-130.4	-49.3	51.8	102.45	-132.8	-52.6	46.7	101.85	-138.0	-59.0	12.0	101.45	-136.1	-50.5	-10.2	100.45	-114.1	10.9	-33.4	99.45	-109.0	26.0	-7.4	98.95	-116.3	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		106.95	-14.5	-13.8	-3.4	-87.9	106.95	-14.5	74.2	-3.4		106.89	-16.3	72.4	1.2		106.45	-29.0	60.4	30.2		106.25	-34.7	55.0	41.6		105.81	-47.5	42.8	63.2		105.50	-55.6	34.2	75.1		105.45	-57.0	32.8	76.8		105.00	-68.8	19.2	88.6		104.40	-83.8	2.4	95.1		104.30	-86.3	-0.4	95.2		103.40	-108.9	-25.5	83.6		102.60	-129.0	-47.9	54.2		102.55	-130.4	-49.3	51.8		102.45	-132.8	-52.6	46.7		101.85	-138.0	-59.0	12.0		101.45	-136.1	-50.5	-10.2		100.45	-114.1	10.9	-33.4		99.45	-109.0	26.0	-7.4		98.95	-116.3	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		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		106.25	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		105.00	0.0	0.0	0.0		104.40	0.0	0.0	0.0		104.30	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		98.95	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.8	-	-	-	107.40	-12.7	-	-	-	107.00	-12.3	-	-	-
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	-	-	106.25	-11.3	-	-	-	106.25	-11.3	-	-	-	106.20	-11.3	-	-	-	105.86	-10.8	-	-	-	105.81	-10.8	-	-	-	105.81	-10.8	-	-	-	105.76	-10.7	-	-	-	105.55	-10.4	-	-	-	105.50	-10.4	-	-	-	105.50	-10.4	-	-	-	105.45	-10.3	-	-	-	105.45	-10.3	-	-	-	105.40	-10.2	-	-	-	105.05	-9.8	-	-	-	105.00	-9.7	-	-	-	105.00	-9.7	-	-	-	104.95	-9.6	-	-	-	104.45	-8.9	-	-	-	104.40	-8.8	-	-	-	104.40	-8.8	-	-	-	104.35	-8.7	-	-	-	104.35	-8.7	-	-	-	104.30	-8.7	-	-	-	104.30	-8.7	-	-	-	104.25	-8.6	-	-	-	103.45	-7.3	-	-	-	103.40	-7.2	-	-	-	103.40	-7.2	-	-	-	103.35	-7.2	-	-	-	102.65	-6.0	-	-	-	102.60	-5.9	-	-	-	102.60	-5.9	-	-	-	102.55	-5.8	0.00	0.00	0.00	102.55	-5.8	0.00	0.00	0.00	102.50	-5.7	0.00	0.00	3.45	102.50	-5.7	0.61	3.45	3.45	102.45	-5.6	0.61	3.40	6.91	102.45	-5.6	1.23	6.91	6.91	102.40	-5.5	1.23	6.80	10.36	101.90	-4.6	9.67	44.91	44.91	101.85	-4.6	9.67	44.05	48.36	101.85	-4.6	10.61	48.36	48.36	101.80	-4.5	10.61	47.42	51.82	101.50	-3.9	18.46	72.55	72.54	101.45	-3.8	18.46	70.90	76.00	101.45	-3.8	19.78	76.00	76.00	101.40	-3.8	19.78	74.23	79.45	100.50	-2.2	50.00	108.06	141.63	100.45	-2.1	50.00	103.71	145.09	100.45	-2.1	50.00	103.71	145.09	100.40	-2.0	50.00	99.36	148.54	99.50	-0.4	50.00	22.03	210.72	99.45	-0.4	50.00	17.77	214.18	99.45	-0.4	50.00	17.77	214.18	99.40	-0.3	50.00	13.51	217.63	99.00	0.4	50.00	-20.54	245.27	98.95	0.5	50.00	-24.79	248.72
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102.50	-5.7	0.61	3.45	3.45																																																																																																																																																																																																																																																																																																																																													
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102.45	-5.6	1.23	6.91	6.91																																																																																																																																																																																																																																																																																																																																													
102.40	-5.5	1.23	6.80	10.36																																																																																																																																																																																																																																																																																																																																													
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101.85	-4.6	9.67	44.05	48.36																																																																																																																																																																																																																																																																																																																																													
101.85	-4.6	10.61	48.36	48.36																																																																																																																																																																																																																																																																																																																																													
101.80	-4.5	10.61	47.42	51.82																																																																																																																																																																																																																																																																																																																																													
101.50	-3.9	18.46	72.55	72.54																																																																																																																																																																																																																																																																																																																																													
101.45	-3.8	18.46	70.90	76.00																																																																																																																																																																																																																																																																																																																																													
101.45	-3.8	19.78	76.00	76.00																																																																																																																																																																																																																																																																																																																																													
101.40	-3.8	19.78	74.23	79.45																																																																																																																																																																																																																																																																																																																																													
100.50	-2.2	50.00	108.06	141.63																																																																																																																																																																																																																																																																																																																																													
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100.45	-2.1	50.00	103.71	145.09																																																																																																																																																																																																																																																																																																																																													
100.40	-2.0	50.00	99.36	148.54																																																																																																																																																																																																																																																																																																																																													
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99.45	-0.4	50.00	17.77	214.18																																																																																																																																																																																																																																																																																																																																													
99.45	-0.4	50.00	17.77	214.18																																																																																																																																																																																																																																																																																																																																													
99.40	-0.3	50.00	13.51	217.63																																																																																																																																																																																																																																																																																																																																													
99.00	0.4	50.00	-20.54	245.27																																																																																																																																																																																																																																																																																																																																													
98.95	0.5	50.00	-24.79	248.72																																																																																																																																																																																																																																																																																																																																													
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1 116																																																																																																																																																																																																																																																																																																																																															
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1116																																																																																																																																																																																																																																																																																																																																															
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: -0.09748026 Theoretischer Fußpunkt = 98.949 m  Einbindetiefe tg = 3.60 m Profillänge = 8.50 m  Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 160.84 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 44.07 kN/m (Eah,k = 257.55 kN/m) Bv,k = 81.38 Summe V,k = 123.53 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 qc,m = 7.50 MN/m² (gemittelt von 99.83 bis 96.31 m) ==&gt; 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  Mantelreibung von bis qs,k [kN/m²] Bezeichnung 102.55 98.95 55.00 s3: Flusskies, -sand Mantelfläche bis 98.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 198.00 / 1.40 = 141.43 kN/m Rd = Rb,d + Rs1,d = 1006.48 kN/m  Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 193.01 - 0.00 + 50.68 + 0.00 = 243.69 kN/m ==&gt; µ = V,d / Rd = 243.69 / 1006.48 = 0.24  Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/17
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1117
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft  
für  
Standssicherheit  
Dipl.-Ing. A. Forster



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																					
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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>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 5 Datei: 03_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><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>1.65</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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</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>[m]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th><th>[mNHN]</th></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 = 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 <math>\mu_e = 287.892 / 291.057 = 0.989</math> Bettungslager <math>B_{h,d} = 287.892</math> kN/m Erdwiderstand <math>E_{p,d} = 291.057</math> 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]	[-]																																																															
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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																																																																				
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Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:																																																																					
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>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>Nw,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>-123.36</td><td>-106.91</td><td>-106.91</td><td>-8.40</td><td>6.900E+4</td><td>2.100E+7</td><td>-136.31</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>wx,d</th><th>wy,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>-12.6</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.4</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.8</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-14.0</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-14.2</td><td>0.0</td><td>-123.36</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.3</td><td>0.1</td><td>-123.36</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\00_BS 5_LF1.1 (ohne Lasten).vrb</div> <div>eingelassen.</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>-0.0109</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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>105.81</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 &gt; 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>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>105.81</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><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>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>107.448</td><td>106.950</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>106.950</td><td>106.886</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>106.886</td><td>106.450</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>106.450</td><td>106.253</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>106.253</td><td>105.815</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>105.815</td><td>105.810</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>105.810</td><td>105.500</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.450</td><td>33.818</td><td>33.818</td><td>0.00</td><td>0.50</td></tr><tr><td>105.450</td><td>105.127</td><td>33.818</td><td>33.818</td><td>0.50</td><td>3.73</td></tr></table>			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	-123.36	-106.91	-106.91	-8.40	6.900E+4	2.100E+7	-136.31	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	-12.6	0.0	-123.36	0.00	0.00	-0.90	106.95	-12.7	0.0	-123.36	0.00	0.00	-0.90	106.95	-12.7	0.0	-123.36	0.00	0.00	-0.80	106.95	-12.9	0.0	-123.36	0.00	0.00	-0.70	106.95	-13.1	0.0	-123.36	0.00	0.00	-0.60	106.95	-13.3	0.0	-123.36	0.00	0.00	-0.50	106.95	-13.4	0.0	-123.36	0.00	0.00	-0.40	106.95	-13.6	0.0	-123.36	0.00	0.00	-0.30	106.95	-13.8	0.0	-123.36	0.00	0.00	-0.20	106.95	-14.0	0.0	-123.36	0.00	0.00	-0.10	106.95	-14.2	0.0	-123.36	0.00	0.00	0.00	106.95	-14.3	0.1	-123.36	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0109	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	107.448	33.818	33.818	0.00	0.00	107.448	106.950	33.818	33.818	0.00	0.00	106.950	106.886	33.818	33.818	0.00	0.00	106.886	106.450	33.818	33.818	0.00	0.00	106.450	106.253	33.818	33.818	0.00	0.00	106.253	105.815	33.818	33.818	0.00	0.00	105.815	105.810	33.818	33.818	0.00	0.00	105.810	105.500	33.818	33.818	0.00	0.00	105.500	105.450	33.818	33.818	0.00	0.50	105.450	105.127	33.818	33.818	0.50	3.73	<div>Statisch geprüft</div> <div>11/19</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
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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>104.300</td><td>28.182</td><td>28.182</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</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>37.863</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>37.863</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>98.549</td><td>46.068</td><td>49.761</td><td>5.00</td><td>5.00</td></tr><tr><td>98.549</td><td>80.000</td><td>49.761</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>-131.80</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>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>-123.4</td></tr><tr><td>106.95</td><td>-18.0</td><td>103.9</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.3</td><td>101.4</td><td>1.7</td><td></td></tr><tr><td>106.45</td><td>-35.9</td><td>84.5</td><td>42.2</td><td></td></tr><tr><td>106.25</td><td>-43.0</td><td>76.8</td><td>58.1</td><td></td></tr><tr><td>105.81</td><td>-58.7</td><td>59.8</td><td>88.1</td><td></td></tr><tr><td>105.81</td><td>-58.9</td><td>59.6</td><td>88.3</td><td></td></tr><tr><td>105.50</td><td>-68.9</td><td>47.5</td><td>104.9</td><td></td></tr><tr><td>105.45</td><td>-70.5</td><td>45.6</td><td>107.3</td><td></td></tr><tr><td>105.13</td><td>-80.9</td><td>32.2</td><td>119.8</td><td></td></tr><tr><td>105.00</td><td>-85.0</td><td>26.6</td><td>123.6</td><td></td></tr><tr><td>104.40</td><td>-103.3</td><td>3.5</td><td>132.6</td><td></td></tr><tr><td>104.30</td><td>-106.3</td><td>-0.3</td><td>132.8</td><td></td></tr><tr><td>103.40</td><td>-133.7</td><td>-34.9</td><td>116.9</td><td></td></tr><tr><td>102.60</td><td>-158.1</td><td>-65.6</td><td>76.8</td><td></td></tr><tr><td>102.55</td><td>-159.8</td><td>-67.5</td><td>73.4</td><td></td></tr><tr><td>102.45</td><td>-162.6</td><td>-71.8</td><td>66.5</td><td></td></tr><tr><td>101.85</td><td>-168.6</td><td>-81.8</td><td>19.1</td><td></td></tr><tr><td>101.45</td><td>-166.4</td><td>-73.6</td><td>-12.4</td><td></td></tr><tr><td>100.45</td><td>-139.1</td><td>-1.8</td><td>-56.1</td><td></td></tr><tr><td>99.45</td><td>-120.1</td><td>44.6</td><td>-26.2</td><td></td></tr><tr><td>98.55</td><td>-131.5</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	104.300	28.182	28.182	5.00	5.00	104.300	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	37.863	5.00	5.00	101.450	100.449	37.863	41.965	5.00	5.00	100.449	99.449	41.965	46.068	5.00	5.00	99.449	98.549	46.068	49.761	5.00	5.00	98.549	80.000	49.761	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	-131.80	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		107.45	-0.1	-0.1	0.0		106.95	-18.0	-19.4	-4.9	-123.4	106.95	-18.0	103.9	-4.9		106.89	-20.3	101.4	1.7		106.45	-35.9	84.5	42.2		106.25	-43.0	76.8	58.1		105.81	-58.7	59.8	88.1		105.81	-58.9	59.6	88.3		105.50	-68.9	47.5	104.9		105.45	-70.5	45.6	107.3		105.13	-80.9	32.2	119.8		105.00	-85.0	26.6	123.6		104.40	-103.3	3.5	132.6		104.30	-106.3	-0.3	132.8		103.40	-133.7	-34.9	116.9		102.60	-158.1	-65.6	76.8		102.55	-159.8	-67.5	73.4		102.45	-162.6	-71.8	66.5		101.85	-168.6	-81.8	19.1		101.45	-166.4	-73.6	-12.4		100.45	-139.1	-1.8	-56.1		99.45	-120.1	44.6	-26.2		98.55	-131.5	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>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.0</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>107.00</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-12.3</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>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.30</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-11.1</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>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.8</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>105.45</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.13</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.13</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.08</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.04</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</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>104.35</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</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><tr><td>102.65</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table>						104.40	0.0	0.0	0.0	104.30	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	98.55	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-13.0	-	-	-	107.45	-13.0	-	-	-	107.45	-13.0	-	-	-	107.40	-13.0	-	-	-	107.00	-12.5	-	-	-	106.95	-12.5	-	-	-	106.95	-12.5	-	-	-	106.89	-12.4	-	-	-	106.89	-12.4	-	-	-	106.84	-12.3	-	-	-	106.50	-12.0	-	-	-	106.45	-11.9	-	-	-	106.45	-11.9	-	-	-	106.40	-11.8	-	-	-	106.30	-11.7	-	-	-	106.25	-11.7	-	-	-	106.25	-11.7	-	-	-	106.20	-11.6	-	-	-	105.86	-11.2	-	-	-	105.81	-11.2	-	-	-	105.81	-11.2	-	-	-	105.81	-11.2	-	-	-	105.81	-11.2	-	-	-	105.76	-11.1	-	-	-	105.55	-10.9	-	-	-	105.50	-10.8	-	-	-	105.50	-10.8	-	-	-	105.45	-10.7	-	-	-	105.45	-10.7	-	-	-	105.40	-10.7	-	-	-	105.18	-10.4	-	-	-	105.13	-10.3	-	-	-	105.13	-10.3	-	-	-	105.08	-10.3	-	-	-	105.04	-10.2	-	-	-	105.00	-10.2	-	-	-	105.00	-10.2	-	-	-	104.95	-10.1	-	-	-	104.45	-9.4	-	-	-	104.40	-9.3	-	-	-	104.40	-9.3	-	-	-	104.35	-9.3	-	-	-	104.35	-9.3	-	-	-	104.30	-9.2	-	-	-	104.30	-9.2	-	-	-	104.25	-9.1	-	-	-	103.45	-7.9	-	-	-	103.40	-7.8	-	-	-	103.40	-7.8	-	-	-	103.35	-7.7	-	-	-	102.65	-6.5	-	-	-	102.60	-6.4	-	-	-	102.60	-6.4	-	-	-	102.55	-6.4	0.00	0.00	0.00	102.55	-6.4	0.00	0.00	0.00
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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>102.50 -6.3 0.00 0.00 3.45</div> <div>102.50 -6.3 0.55 3.45 3.45</div> <div>102.45 -6.2 0.55 3.41 6.91</div> <div>102.45 -6.2 1.12 6.91 6.91</div> <div>102.40 -6.1 1.12 6.81 10.36</div> <div>101.90 -5.2 8.62 44.91 44.91</div> <div>101.85 -5.1 8.62 44.14 48.36</div> <div>101.85 -5.1 9.44 48.36 48.36</div> <div>101.80 -5.0 9.44 47.52 51.82</div> <div>101.50 -4.5 16.14 72.55 72.54</div> <div>101.45 -4.4 16.14 71.10 76.00</div> <div>101.45 -4.4 17.25 76.00 76.00</div> <div>101.40 -4.3 17.25 74.46 79.45</div> <div>100.50 -2.7 50.00 136.19 141.63</div> <div>100.45 -2.6 50.00 131.85 145.08</div> <div>100.45 -2.6 50.00 131.85 145.08</div> <div>100.40 -2.6 50.00 127.53 148.54</div> <div>99.50 -1.0 50.00 51.27 210.72</div> <div>99.45 -0.9 50.00 47.10 214.17</div> <div>99.45 -0.9 50.00 47.10 214.17</div> <div>99.40 -0.9 50.00 42.94 217.63</div> <div>98.60 0.5 50.00 -23.29 272.90</div> <div>98.55 0.5 50.00 -27.43 276.35</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.09466406</div> <div>Theoretischer Fußpunkt = 98.549 m</div> <div>Einbindetiefe tg = 4.00 m</div> <div>Profillänge = 8.90 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: <math>P_{v,k} + G'_{,k} + E_{av,k} \geq B_{v,k}</math></div> <div><math>G_{,k} = 168.41 \text{ kN/m}</math></div> <div><math>G'_{,k} = 0.00 \text{ kN/m}</math></div> <div><math>P_{v,k} = 0.00 \text{ kN/m}</math></div> <div><math>E_{av,k} = 54.80 \text{ kN/m}</math> (<math>E_{ah,k} = 318.17 \text{ kN/m}</math>)</div> <div><math>B_{v,k} = 99.11</math></div> <div>Summe <math>V_{,k} = 124.11 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></div> <div>(gemittelt von 99.43 bis 95.91 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math></div> <div><math>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}</math></div> <div>Mantelreibung</div> <div><table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></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 = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math></div> <div><math>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}</math></div> <div><math>R_{,d} = R_{b,d} + R_{s1,d} = 1022.19 \text{ kN/m}</math></div> <div>Einwirkungen</div> <div><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 202.10 - 0.00 + 63.02 + 0.00 = 265.11 \text{ kN/m}</math></div> <div><math>\Rightarrow \mu = V_{,d} / R_{,d} = 265.11 / 1022.19 = 0.26</math></div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</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 E1 Schnitt 5R		Seite Anlage E1/23								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 1123								
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 5 Datei: 04_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 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 = 9.10 m</div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/24
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

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 93.562 / 93.741 = 0.998$   
Bettungslager  $B_{h,d} = 93.562 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 93.741 \text{ kN/m}$

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	-394.44	-330.25	-246.17	-50.05	3.900E+7	2.100E+7	-439.98

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	-9.0	0.0	-394.90	0.00	0.00
-7.47	103.72	-9.0	0.0	-394.90	0.00	0.00
-7.47	103.72	-9.0	0.0	-394.90	0.00	0.00
-6.64	103.72	-9.0	0.0	-394.90	0.00	0.00
-5.81	103.72	-9.0	0.0	-394.90	0.00	0.00
-4.98	103.72	-9.0	0.0	-394.90	0.00	0.00
-4.15	103.72	-9.0	0.0	-394.90	0.00	0.00
-3.32	103.72	-9.0	0.0	-394.90	0.00	0.00
-2.49	103.72	-9.0	0.0	-394.90	0.00	0.00
-1.66	103.72	-9.0	0.0	-394.90	0.00	0.00
-0.83	103.72	-9.0	0.1	-394.90	0.00	0.00
0.00	103.72	-9.1	0.1	-394.90	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0078

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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	108.598	0.000	14.416	0.00
108.598	108.594	14.416	19.528	0.00
108.594	107.600	19.528	26.888	0.00
107.600	107.450	26.888	27.999	0.00

Schnitt: Anlage E1	Schnitt 5R	Seite Anlage E1/25
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr. 1125
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>107.450106.60027.99934.2920.000.00</div><div>106.600106.55734.29234.6130.000.00</div><div>106.557105.81034.61327.1170.000.00</div><div>105.810105.66333.17231.1290.000.00</div><div>105.663105.55031.12932.0910.000.00</div><div>105.550105.50032.09132.5170.000.00</div><div>105.500104.55032.51736.5590.009.50</div><div>104.550103.72036.55940.0919.5017.80</div><div>103.720103.55040.09140.81417.8019.50</div><div>103.550102.60040.81444.85619.5029.00</div><div>102.600102.55033.14433.34929.0029.50</div><div>102.550101.60033.34937.2480.000.00</div><div>101.600100.59937.24841.3510.000.00</div><div>100.599100.04941.35143.6080.000.00</div><div>100.04999.59943.60845.4540.000.00</div><div>99.59999.49945.45445.8640.000.00</div><div>99.49980.00045.864125.8400.000.00</div></div><div><div>Hydrodynamische Wasserdruckspannung</div><div>(dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</div><div><div>w(oben)w(unten)z(oben)z(unten)</div><div>[kN/m²][kN/m²][mNHN][mNHN]</div><div>0.000.00108.60102.55</div></div></div><div><div>Passive Erddruckbeiwerte</div><div>bestimmt nach: DIN 4085:2017</div><div><div>SchichtUKkpghkpchphi,kdeltatheta</div><div>[-][mNHN][-][°][°][°]</div><div>380.006.0066.05432.500-21.6816.35</div></div></div><div><div>Passive Erddruckordinaten (Bemessungswerte)</div><div>Teilsicherheit Erdwiderstand = 1.30</div><div>Anpassungsfaktor Erdwiderstand = 0.80</div><div><div>vonbisobenunten</div><div>[mNHN][mNHN][kN/m²][kN/m²]</div><div>102.55101.600.00-40.39</div><div>101.60100.60-40.39-82.91</div><div>100.60100.05-82.91-106.30</div><div>100.0599.60-106.30-125.43</div><div>99.6099.50-125.43-129.68</div><div>99.5080.00-129.68-958.43</div></div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQMA(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>108.600.00.00.0</div><div>108.60-0.10.00.0</div><div>108.59-0.2-0.10.0</div><div>107.60-32.3-29.0-13.7</div><div>107.45-37.4-34.0-18.5</div><div>107.45-90.8-34.0-52.7</div><div>106.60-121.1-66.5-94.9</div><div>106.56-122.7-68.3-97.9</div><div>105.81-149.0-95.8-159.6</div><div>105.66-153.7-101.3-174.1</div><div>105.55-157.2-105.4-185.8</div><div>105.50-158.8-107.2-191.1</div><div>104.55-189.6-150.4-312.3</div><div>103.72-217.5-200.6-457.1-394.9</div><div>103.72-217.5194.3-457.1</div><div>103.55-223.3182.6-425.1</div><div>102.60-256.5108.2-285.7</div><div>102.55-258.4104.5-280.4</div><div>101.60-266.798.7-188.9</div><div>100.60-264.3113.8-75.9</div><div>100.05-271.575.0-22.3</div><div>99.60-267.116.3-0.8</div><div>99.50-264.90.00.0</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="4">Anlage E1 Schnitt 5R</td><td colspan="2">Seite Anlage E1/26</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="4">5 LF 3 (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 E1 Schnitt 5R				Seite Anlage E1/26		Kapitel:		5 LF 3 (BS-T, mit Lasten)				Archiv Nr.:		Vorgang:		Genehmigungsstatik				Projekt-Nr.: 2004-0025	
Schnitt:		Anlage E1 Schnitt 5R				Seite Anlage E1/26																									
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><div>Schnittgrößen 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(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>108.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.60</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.59</td><td>0.0</td><td>-0.1</td><td>0.0</td><td></td><td></td></tr><tr><td>107.60</td><td>-5.7</td><td>-15.6</td><td>-7.8</td><td></td><td></td></tr><tr><td>107.45</td><td>-6.5</td><td>-17.9</td><td>-10.3</td><td></td><td></td></tr><tr><td>106.60</td><td>-11.3</td><td>-31.2</td><td>-31.1</td><td></td><td></td></tr><tr><td>106.56</td><td>-11.6</td><td>-31.8</td><td>-32.5</td><td></td><td></td></tr><tr><td>105.81</td><td>-14.1</td><td>-38.6</td><td>-59.4</td><td></td><td></td></tr><tr><td>105.66</td><td>-14.1</td><td>-38.8</td><td>-65.1</td><td></td><td></td></tr><tr><td>105.55</td><td>-14.1</td><td>-38.8</td><td>-69.5</td><td></td><td></td></tr><tr><td>105.50</td><td>-14.1</td><td>-38.8</td><td>-71.4</td><td></td><td></td></tr><tr><td>104.55</td><td>-14.1</td><td>-38.8</td><td>-108.3</td><td></td><td></td></tr><tr><td>103.72</td><td>-14.1</td><td>-38.8</td><td>-140.6</td><td>-93.3</td><td></td></tr><tr><td>103.72</td><td>-14.1</td><td>45.2</td><td>-140.6</td><td></td><td></td></tr></tbody></table></div>						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	0.0	0.0	0.0			108.59	-0.1	-0.1	0.0			107.60	-27.4	-23.1	-10.9			107.45	-31.7	-27.3	-14.7			107.45	-76.2	-27.3	-43.2			106.60	-101.9	-53.7	-77.3			106.56	-103.3	-55.2	-79.6			105.81	-125.8	-78.3	-129.8			105.66	-129.8	-83.0	-141.7			105.55	-132.9	-86.6	-151.3			105.50	-134.3	-88.2	-155.6			104.55	-161.1	-125.5	-256.1			103.72	-185.3	-168.7	-377.5	-330.2		103.72	-185.3	161.6	-377.5			103.55	-190.4	151.5	-350.9			102.60	-219.3	87.8	-236.2			102.55	-220.9	84.7	-231.9			101.60	-228.0	80.1	-158.1			100.60	-225.0	95.9	-64.3			100.05	-231.4	63.6	-18.9			99.60	-228.1	13.9	-0.7			99.50	-226.3	0.0	0.0			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	0.0	0.0	0.0			108.59	-0.1	0.0	0.0			107.60	-21.7	-7.6	-3.2			107.45	-25.2	-9.4	-4.4			107.45	-69.7	-9.4	-32.9			106.60	-90.6	-22.6	-46.1			106.56	-91.7	-23.4	-47.1			105.81	-111.7	-39.7	-70.4			105.66	-115.7	-44.2	-76.6			105.55	-118.8	-47.7	-81.8			105.50	-120.2	-49.3	-84.2			104.55	-147.0	-86.7	-147.8			103.72	-171.2	-129.8	-236.9	-246.2		103.72	-171.2	116.4	-236.9			103.55	-176.3	106.3	-218.0			102.60	-205.2	42.6	-146.3			102.55	-206.8	39.5	-144.2			101.60	-212.4	38.5	-112.4			100.60	-202.0	72.9	-51.7			100.05	-209.3	52.2	-15.8			99.60	-209.8	11.8	-0.6			99.50	-208.8	0.0	0.0			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	0.0	0.0	0.0			108.59	0.0	-0.1	0.0			107.60	-5.7	-15.6	-7.8			107.45	-6.5	-17.9	-10.3			106.60	-11.3	-31.2	-31.1			106.56	-11.6	-31.8	-32.5			105.81	-14.1	-38.6	-59.4			105.66	-14.1	-38.8	-65.1			105.55	-14.1	-38.8	-69.5			105.50	-14.1	-38.8	-71.4			104.55	-14.1	-38.8	-108.3			103.72	-14.1	-38.8	-140.6	-93.3		103.72	-14.1	45.2	-140.6		
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108.59	0.0	-0.1	0.0																																																																																																																																																																																																																																																																																																																																																																																																														
107.60	-5.7	-15.6	-7.8																																																																																																																																																																																																																																																																																																																																																																																																														
107.45	-6.5	-17.9	-10.3																																																																																																																																																																																																																																																																																																																																																																																																														
106.60	-11.3	-31.2	-31.1																																																																																																																																																																																																																																																																																																																																																																																																														
106.56	-11.6	-31.8	-32.5																																																																																																																																																																																																																																																																																																																																																																																																														
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Schnitt:		Anlage E1 Schnitt 5R		Seite Anlage E1/27																																																																																																																																																																																																																																																																																																																																																																																																													
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1127																																																																																																																																																																																																																																																																																																																																																																																																													
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> 103.55 -14.1 45.2 -132.9  102.60 -14.1 45.2 -89.9  102.55 -14.1 45.2 -87.7  101.60 -15.6 41.6 -45.6  100.60 -23.0 22.9 -12.6  100.05 -22.0 11.5 -3.2  99.60 -18.3 2.1 -0.1  99.50 -17.5 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> 108.60 -27.0 - -  108.60 -27.0 - -  108.60 -27.0 - -  108.59 -27.0 - -  108.59 -27.0 - -  108.54 -26.7 - -  107.65 -23.0 - -  107.60 -22.8 - -  107.60 -22.8 - -  107.55 -22.6 - -  107.50 -22.4 - -  107.45 -22.2 - -  107.45 -22.2 - -  107.40 -21.9 - -  106.65 -18.8 - -  106.60 -18.6 - -  106.60 -18.6 - -  106.56 -18.4 - -  106.56 -18.4 - -  106.51 -18.2 - -  105.86 -15.6 - -  105.81 -15.4 - -  105.81 -15.4 - -  105.76 -15.2 - -  105.71 -15.0 - -  105.66 -14.9 - -  105.66 -14.9 - -  105.60 -14.6 - -  105.60 -14.6 - -  105.55 -14.4 - -  105.55 -14.4 - -  105.50 -14.2 - -  105.50 -14.2 - -  105.45 -14.0 - -  104.60 -10.8 - -  104.55 -10.7 - -  104.55 -10.7 - -  104.50 -10.5 - -  103.77 -8.0 - -  103.72 -7.9 - -  103.72 -7.9 - -  103.66 -7.7 - -  103.60 -7.5 - -  103.55 -7.3 - -  103.55 -7.3 - -  103.50 -7.2 - -  102.65 -4.8 - -  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 -4.5 0.00 0.00 3.45  101.65 -2.5 25.35 62.19 62.19  101.60 -2.3 25.35 59.37 65.64  101.60 -2.3 28.04 65.64 65.64  101.55 -2.2 28.04 62.54 69.09  100.65 -0.3 50.00 16.64 131.28  100.60 -0.2 50.00 11.56 134.73 </div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/28
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/28
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>100.60</td><td>-0.2</td><td>50.00</td><td>11.56</td><td>134.73</td></tr><tr><td>100.55</td><td>-0.1</td><td>50.00</td><td>6.50</td><td>138.19</td></tr><tr><td>100.10</td><td>0.8</td><td>50.00</td><td>-38.61</td><td>169.28</td></tr><tr><td>100.05</td><td>0.9</td><td>50.00</td><td>-43.59</td><td>172.74</td></tr><tr><td>100.05</td><td>0.9</td><td>50.00</td><td>-43.59</td><td>172.74</td></tr><tr><td>100.00</td><td>1.0</td><td>50.00</td><td>-48.56</td><td>176.19</td></tr><tr><td>99.65</td><td>1.7</td><td>50.00</td><td>-83.31</td><td>200.37</td></tr><tr><td>99.60</td><td>1.8</td><td>50.00</td><td>-88.27</td><td>203.83</td></tr><tr><td>99.60</td><td>1.8</td><td>50.00</td><td>-88.27</td><td>203.83</td></tr><tr><td>99.55</td><td>1.9</td><td>50.00</td><td>-93.23</td><td>207.28</td></tr><tr><td>99.55</td><td>1.9</td><td>50.00</td><td>-93.23</td><td>207.28</td></tr><tr><td>99.50</td><td>2.0</td><td>50.00</td><td>-98.19</td><td>210.74</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] <math>\phi_{i,[g+q],k}</math>: -0.11363394 Theoretischer Fußpunkt = 99.499 m</p> <p>Einbindetiefe <math>t_g</math> = 3.05 m Profillänge = 9.10 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{v,k}</math> = 172.20 kN/m <math>G'_{v,k}</math> = 0.00 kN/m <math>P_{v,k}</math> = 44.50 kN/m <math>E_{av,k}</math> = 54.97 kN/m (<math>E_{ah,k}</math> = 322.89 kN/m) <math>B_{v,k}</math> = 33.66 Summe <math>V_{v,k}</math> = 238.00 kN/m (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D</math> = 0.88 m Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m}</math> = 7.50 MN/m<sup>2</sup> (gemittelt von 100.38 bis 96.86 m) ==&gt; <math>q_{b,k}</math> = 1.60 MN/m<sup>2</sup> <math>R_{b,d}</math> = <math>A \cdot q_{b,k} / \gamma(q_{b,k})</math> = 0.7569 · 1.60 · 1000 / 1.40 = 865.05 kN/m</p> <p>Mantelreibung von bis <math>q_{s,k}</math> [kN/m<sup>2</sup>] Bezeichnung 102.55 99.50 55.00 s3: Flussskies, -sand Mantelfläche bis 99.50 m = 1.000 m<sup>2</sup>/m/m ==&gt; <math>R_{s1,d}</math> <math>R_{s1,d}</math> = <math>\eta(s) \cdot R_{s1,k} / \gamma(q_{s,k})</math> = 1.000 · 167.75 / 1.40 = 119.82 kN/m <math>R_{d}</math> = <math>R_{b,d} + R_{s1,d}</math> = 984.87 kN/m</p> <p>Einwirkungen <math>V_{d}</math> = <math>G_{d} - G'_{v,k} + E_{av,d} + P_{v,d}</math> = 206.64 - 0.00 + 64.27 + 53.40 = 324.31 kN/m ==&gt; <math>\mu</math> = <math>V_{d} / R_{d}</math> = 324.31 / 984.87 = 0.33</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.60	-0.2	50.00	11.56	134.73	100.55	-0.1	50.00	6.50	138.19	100.10	0.8	50.00	-38.61	169.28	100.05	0.9	50.00	-43.59	172.74	100.05	0.9	50.00	-43.59	172.74	100.00	1.0	50.00	-48.56	176.19	99.65	1.7	50.00	-83.31	200.37	99.60	1.8	50.00	-88.27	203.83	99.60	1.8	50.00	-88.27	203.83	99.55	1.9	50.00	-93.23	207.28	99.55	1.9	50.00	-93.23	207.28	99.50	2.0	50.00	-98.19	210.74
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99.55	1.9	50.00	-93.23	207.28																																																										
99.50	2.0	50.00	-98.19	210.74																																																										
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/29																																																												
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1129																																																												
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 5 Datei: 05_BS 5_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 = 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 = 10.30 m</div>		
Schnitt: Anlage E1 Schnitt 5R		Seite Anlage E1/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1130
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>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 80.00 45.000 45.000</div> <div>Ausnutzungsgrad <math>\mu_{ue} = 257.912 / 258.921 = 0.996</math></div> <div>Bettungslager <math>B_{h,d} = 257.912 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 258.921 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div><table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td><math>N_{d'}</math></td><td><math>N(g+q+w),k</math></td><td><math>N(g+w),k</math></td><td><math>N_{w,k}</math></td><td>EA</td><td>EI</td><td><math>N_{d'}</math></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>-239.57</td><td>-185.48</td><td>-185.48</td><td>-49.37</td><td>3.900E+7</td><td>2.100E+7</td><td>-236.49 Steife</td></tr></table></div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [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><math>w_{x,d}</math></td><td><math>w_{y,d}</math></td><td><math>N_{d'}</math></td><td><math>Q_{d'}</math></td><td><math>M_{d'}</math></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>-9.9</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-10.0</td><td>0.0</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-10.0</td><td>0.1</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-10.0</td><td>0.1</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-10.0</td><td>0.1</td><td>-240.19</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-10.0</td><td>0.1</td><td>-240.19</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>-0.0078</td></tr></table></div> <div>Bodenkennwerte</div> <div><table><tr><td>Schicht</td><td>UK</td><td><math>\gamma_{m,k}</math></td><td><math>\gamma_{a,k}</math></td><td><math>\phi_{i,k}</math></td><td><math>c(pas),k</math></td><td><math>c(akt),k</math></td><td><math>d(p)/\phi</math></td><td><math>d(a)/\phi</math></td><td><math>q_c</math></td><td><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></td><td><math>k_{ach}</math></td><td><math>\phi_{i,k}</math></td><td><math>\delta</math></td><td><math>\theta</math></td><td><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>108.594</td><td>0.000</td><td>1.992</td><td>0.00</td><td>0.00</td></tr><tr><td>108.594</td><td>107.600</td><td>1.992</td><td>9.352</td><td>0.00</td><td>0.00</td></tr><tr><td>107.600</td><td>107.450</td><td>9.352</td><td>10.463</td><td>0.00</td><td>0.00</td></tr><tr><td>107.450</td><td>106.600</td><td>10.463</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	-239.57	-185.48	-185.48	-49.37	3.900E+7	2.100E+7	-236.49 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	-9.9	0.0	-240.19	0.00	0.00	-7.47	103.72	-10.0	0.0	-240.19	0.00	0.00	-7.47	103.72	-10.0	0.0	-240.19	0.00	0.00	-6.64	103.72	-10.0	0.0	-240.19	0.00	0.00	-5.81	103.72	-10.0	0.0	-240.19	0.00	0.00	-4.98	103.72	-10.0	0.0	-240.19	0.00	0.00	-4.15	103.72	-10.0	0.0	-240.19	0.00	0.00	-3.32	103.72	-10.0	0.0	-240.19	0.00	0.00	-2.49	103.72	-10.0	0.1	-240.19	0.00	0.00	-1.66	103.72	-10.0	0.1	-240.19	0.00	0.00	-0.83	103.72	-10.0	0.1	-240.19	0.00	0.00	0.00	103.72	-10.0	0.1	-240.19	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0078	Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	$q_c$	$c_{u,k}$	[-]	[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	Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	von	bis	oben	unten	Wasserdruck	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	108.600	108.594	0.000	1.992	0.00	0.00	108.594	107.600	1.992	9.352	0.00	0.00	107.600	107.450	9.352	10.463	0.00	0.00	107.450	106.600	10.463	16.756	0.00	0.00	<div>Statisch geprüft</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Schnitt: Anlage E1 Schnitt 5R	Seite Anlage E1/01
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>106.600</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>39.567</td><td>0.00</td><td>0.00</td></tr><tr><td>100.599</td><td>99.599</td><td>39.567</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>98.299</td><td>47.772</td><td>49.003</td><td>0.00</td><td>0.00</td></tr><tr><td>98.299</td><td>80.000</td><td>49.003</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>-127.79</td></tr><tr><td>99.60</td><td>98.60</td><td>-127.79</td><td>-167.26</td></tr><tr><td>98.60</td><td>98.30</td><td>-167.26</td><td>-179.11</td></tr><tr><td>98.30</td><td>80.00</td><td>-179.11</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>-240.2</td></tr><tr><td>103.72</td><td>-217.3</td><td>87.1</td><td>-273.9</td><td></td></tr><tr><td>103.55</td><td>-223.6</td><td>74.6</td><td>-260.1</td><td></td></tr><tr><td>102.60</td><td>-259.6</td><td>-5.4</td><td>-225.9</td><td></td></tr><tr><td>102.55</td><td>-261.6</td><td>-9.3</td><td>-226.3</td><td></td></tr><tr><td>102.10</td><td>-265.5</td><td>-10.1</td><td>-231.5</td><td></td></tr><tr><td>101.60</td><td>-260.9</td><td>9.7</td><td>-232.4</td><td></td></tr><tr><td>100.60</td><td>-234.4</td><td>89.0</td><td>-182.6</td><td></td></tr><tr><td>99.60</td><td>-232.2</td><td>101.8</td><td>-80.2</td><td></td></tr><tr><td>98.60</td><td>-248.7</td><td>35.0</td><td>-5.4</td><td></td></tr><tr><td>98.30</td><td>-249.4</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	39.567	0.00	0.00	100.599	99.599	39.567	43.669	0.00	0.00	99.599	98.599	43.669	47.772	0.00	0.00	98.599	98.299	47.772	49.003	0.00	0.00	98.299	80.000	49.003	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	-127.79	99.60	98.60	-127.79	-167.26	98.60	98.30	-167.26	-179.11	98.30	80.00	-179.11	-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	-240.2	103.72	-217.3	87.1	-273.9		103.55	-223.6	74.6	-260.1		102.60	-259.6	-5.4	-225.9		102.55	-261.6	-9.3	-226.3		102.10	-265.5	-10.1	-231.5		101.60	-260.9	9.7	-232.4		100.60	-234.4	89.0	-182.6		99.60	-232.2	101.8	-80.2		98.60	-248.7	35.0	-5.4		98.30	-249.4	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>108.60</td><td>-21.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.60</td><td>-21.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.60</td><td>-21.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.59</td><td>-21.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.59</td><td>-21.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.54</td><td>-21.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-18.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.60</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.60</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.55</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-18.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.65</td><td>-15.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.60</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.60</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.55</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.55</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</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>102.60</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>19.82</td></tr><tr><td>102.50</td><td>-5.1</td><td>0.00</td><td>0.00</td><td>23.27</td></tr><tr><td>102.15</td><td>-4.5</td><td>10.66</td><td>47.45</td><td>47.45</td></tr><tr><td>102.10</td><td>-4.4</td><td>10.66</td><td>46.44</td><td>50.91</td></tr><tr><td>102.10</td><td>-4.4</td><td>11.68</td><td>50.91</td><td>50.91</td></tr><tr><td>102.05</td><td>-4.3</td><td>11.68</td><td>49.80</td><td>54.36</td></tr><tr><td>101.65</td><td>-3.5</td><td>23.21</td><td>82.00</td><td>82.00</td></tr><tr><td>101.60</td><td>-3.4</td><td>23.21</td><td>79.96</td><td>85.45</td></tr><tr><td>101.60</td><td>-3.4</td><td>24.81</td><td>85.45</td><td>85.45</td></tr><tr><td>101.55</td><td>-3.4</td><td>24.81</td><td>83.29</td><td>88.91</td></tr><tr><td>100.65</td><td>-1.9</td><td>45.00</td><td>86.36</td><td>151.08</td></tr><tr><td>100.60</td><td>-1.8</td><td>45.00</td><td>83.05</td><td>154.54</td></tr><tr><td>100.60</td><td>-1.8</td><td>45.00</td><td>83.05</td><td>154.54</td></tr><tr><td>100.55</td><td>-1.8</td><td>45.00</td><td>79.78</td><td>157.99</td></tr><tr><td>99.65</td><td>-0.5</td><td>45.00</td><td>24.65</td><td>220.17</td></tr><tr><td>99.60</td><td>-0.5</td><td>45.00</td><td>21.75</td><td>223.62</td></tr><tr><td>99.60</td><td>-0.5</td><td>45.00</td><td>21.75</td><td>223.62</td></tr><tr><td>99.55</td><td>-0.4</td><td>45.00</td><td>18.87</td><td>227.08</td></tr><tr><td>98.65</td><td>0.7</td><td>45.00</td><td>-31.82</td><td>289.26</td></tr><tr><td>98.60</td><td>0.8</td><td>45.00</td><td>-34.60</td><td>292.71</td></tr><tr><td>98.60</td><td>0.8</td><td>45.00</td><td>-34.60</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	-21.6	-	-	-	108.60	-21.6	-	-	-	108.60	-21.6	-	-	-	108.59	-21.6	-	-	-	108.59	-21.6	-	-	-	108.54	-21.5	-	-	-	107.65	-18.8	-	-	-	107.60	-18.7	-	-	-	107.60	-18.7	-	-	-	107.55	-18.5	-	-	-	107.50	-18.4	-	-	-	107.45	-18.2	-	-	-	107.45	-18.2	-	-	-	107.40	-18.1	-	-	-	106.65	-15.8	-	-	-	106.60	-15.7	-	-	-	106.60	-15.7	-	-	-	106.55	-15.6	-	-	-	105.86	-13.6	-	-	-	105.81	-13.4	-	-	-	105.81	-13.4	-	-	-	105.76	-13.3	-	-	-	105.60	-12.8	-	-	-	105.55	-12.7	-	-	-	105.55	-12.7	-	-	-	105.50	-12.5	-	-	-	105.50	-12.5	-	-	-	105.45	-12.4	-	-	-	104.60	-10.1	-	-	-	104.55	-9.9	-	-	-	104.55	-9.9	-	-	-	104.50	-9.8	-	-	-	103.77	-8.0	-	-	-	103.72	-7.8	-	-	-	103.72	-7.8	-	-	-	103.66	-7.7	-	-	-	103.60	-7.6	-	-	-	103.55	-7.4	-	-	-	103.55	-7.4	-	-	-	103.50	-7.3	-	-	-	102.65	-5.4	-	-	-	102.60	-5.3	-	-	-	102.60	-5.3	-	-	-	102.55	-5.2	0.00	0.00	0.00	102.55	-5.2	0.00	0.00	19.82	102.50	-5.1	0.00	0.00	23.27	102.15	-4.5	10.66	47.45	47.45	102.10	-4.4	10.66	46.44	50.91	102.10	-4.4	11.68	50.91	50.91	102.05	-4.3	11.68	49.80	54.36	101.65	-3.5	23.21	82.00	82.00	101.60	-3.4	23.21	79.96	85.45	101.60	-3.4	24.81	85.45	85.45	101.55	-3.4	24.81	83.29	88.91	100.65	-1.9	45.00	86.36	151.08	100.60	-1.8	45.00	83.05	154.54	100.60	-1.8	45.00	83.05	154.54	100.55	-1.8	45.00	79.78	157.99	99.65	-0.5	45.00	24.65	220.17	99.60	-0.5	45.00	21.75	223.62	99.60	-0.5	45.00	21.75	223.62	99.55	-0.4	45.00	18.87	227.08	98.65	0.7	45.00	-31.82	289.26	98.60	0.8	45.00	-34.60	292.71	98.60	0.8	45.00	-34.60	292.71
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98.65	0.7	45.00	-31.82	289.26																																																																																																																																																																																																																																																																																																																																																
98.60	0.8	45.00	-34.60	292.71																																																																																																																																																																																																																																																																																																																																																
98.60	0.8	45.00	-34.60	292.71																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage E1 Schnitt 5R		Seite Anlage E1/04																																																																																																																																																																																																																																																																																																																																																
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1104																																																																																																																																																																																																																																																																																																																																																
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    0.8    45.00    -37.38    296.16  98.35    1.1    45.00    -48.50    309.98  98.30    1.1    45.00    -51.28    313.44 </p> <p> Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k} = -0.07075044</math>  Theoretischer Fußpunkt = 98.299 m </p> <p> Einbindetiefe <math>t_g = 4.25</math> m  Profillänge = 10.30 m </p> <p> Nachweis Summe V  Nachweis des mobilisierten Erdwiderstands  Bedingung: <math>P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{i,k} = 194.91</math> kN/m  <math>G'_{i,k} = 0.00</math> kN/m  <math>P_{v,k} = 44.50</math> kN/m  <math>E_{av,k} = 55.84</math> kN/m (<math>E_{ah,k} = 320.90</math> kN/m)  <math>B_{v,k} = 80.52</math>  Summe <math>V_{i,k} = 214.73</math> kN/m (Druck) </p> <p> Nachweis der vertikalen Tragfähigkeit  (Erfahrungswerte nach EA Pfähle)  Verfahren 2: EAU Bild E 4-3 (rechts)  Bohrpfahlwand <math>D = 0.88</math> m  Verhältnisswert (min, max) = 0.00  Spitzendruck <math>q_{c,m} = 7.50</math> MN/m<sup>2</sup>  (gemittelt von 99.18 bis 95.66 m) <math>\Rightarrow q_{b,k} = 1.60</math> MN/m<sup>2</sup>  <math>R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05</math> kN/m </p> <p> Mantelreibung  <table border="0"> <tr> <td>von</td> <td>bis</td> <td><math>q_{s,k}</math> [kN/m<sup>2</sup>]</td> <td>Bezeichnung</td> </tr> <tr> <td>102.55</td> <td>98.30</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </table> Mantelfläche bis 98.30 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 233.75 / 1.40 = 166.96</math> kN/m  <math>R_{i,d} = R_{b,d} + R_{s1,d} = 1032.01</math> kN/m </p> <p> Einwirkungen  <math>V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 263.12 - 0.00 + 71.20 + 60.08 = 394.40</math> kN/m  <math>\Rightarrow \mu = V_{i,d} / R_{i,d} = 394.40 / 1032.01 = 0.38</math> </p> <p> Horizontaler Wasserdruck herkömmlich bestimmt. </p>			von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung	102.55	98.30	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung							
102.55	98.30	55.00	s3: Flussskies, -sand							
Schnitt: Anlage E1    Schnitt 5R		Seite Anlage E1/35								
Kapitel: 6    LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11035								
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 F1 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: 00_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 ==&gt; dreieckförmig verteilt (Maximum oben)</p> <p>Blocklasten nicht umgelagert</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 7.50 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]	[-]																																																							
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																																																								
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/19.																																																													
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 19.11.2024																																																													
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>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</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 <math>\mu_{ue} = 302.307 / 565.092 = 0.535</math></div> <div>Bettungslager <math>B_{h,d} = 302.307 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 565.092 \text{ kN/m}</math></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>1 105.55 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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&gt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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>1 105.55 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 (<math>[g+q],k</math>)</div> <div>von bis oben unten Wasserdruck</div> <div>[mNHN] [mNHN] [kN/m²] [kN/m²] [kN/m²]</div> <div>107.450 106.886 0.000 4.176 0.00 0.00</div> <div>106.886 106.450 4.176 13.267 0.00 0.00</div> <div>106.450 106.280 13.268 16.804 0.00 0.00</div> <div>106.280 106.000 16.804 18.880 0.00 0.00</div> <div>106.000 105.550 18.880 22.212 0.00 0.00</div> <div>105.550 105.500 26.870 27.295 0.00 0.00</div> <div>105.500 105.450 27.295 27.508 0.00 0.50</div> <div>105.450 105.000 27.508 29.423 0.50 5.00</div> <div>105.000 104.445 29.423 31.783 5.00 5.00</div> <div>104.445 103.639 31.783 35.215 5.00 5.00</div> <div>103.639 103.441 35.215 40.096 5.00 5.00</div> <div>103.441 102.550 40.096 43.370 5.00 5.00</div> <div>102.550 102.450 33.098 33.450 5.00 5.00</div> <div>102.450 102.150 33.450 34.507 5.00 5.00</div> <div>102.150 101.449 34.507 36.974 5.00 5.00</div> <div>101.449 101.049 36.974 38.383 5.00 5.00</div> <div>101.049 100.449 38.383 40.497 5.00 5.00</div> <div>100.449 99.949 40.497 42.259 5.00 5.00</div> <div>99.949 97.731 42.259 50.070 5.00 5.00</div> <div>97.731 96.477 50.070 54.486 5.00 5.00</div> <div>96.477 80.000 54.486 122.067 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> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div>Schicht UK kpgh kpch phi,k delta theta</div> <div>[-] [mNHN] [-] [-] [°] [°] [°]</div> <div>1 105.55 5.005 5.388 30.000 -20.01 18.10</div> <div>2 102.55 3.034 3.911 22.500 -15.01 23.23</div> <div>3 80.00 6.006 6.054 32.500 -21.68 16.35</div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/2
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.:
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																								
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<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</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>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>102.15</td><td>-147.37</td><td>-160.13</td></tr><tr><td>102.15</td><td>101.45</td><td>-160.13</td><td>-189.90</td></tr><tr><td>101.45</td><td>101.05</td><td>-189.90</td><td>-206.91</td></tr><tr><td>101.05</td><td>100.45</td><td>-206.91</td><td>-232.42</td></tr><tr><td>100.45</td><td>99.95</td><td>-232.42</td><td>-253.68</td></tr><tr><td>99.95</td><td>97.73</td><td>-253.68</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> <div>Schnittgrößen (Bemessungswerte)</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>-12.8</td><td>-1.4</td><td>-0.3</td></tr><tr><td>106.45</td><td>-23.8</td><td>-5.7</td><td>-1.6</td></tr><tr><td>106.28</td><td>-28.6</td><td>-8.7</td><td>-2.8</td></tr><tr><td>106.00</td><td>-36.8</td><td>-14.4</td><td>-6.1</td></tr><tr><td>105.55</td><td>-43.4</td><td>-15.2</td><td>-13.5</td></tr><tr><td>105.50</td><td>-43.9</td><td>-14.6</td><td>-14.2</td></tr><tr><td>105.45</td><td>-44.3</td><td>-13.9</td><td>-14.9</td></tr><tr><td>105.00</td><td>-48.6</td><td>-9.4</td><td>-20.0</td></tr><tr><td>104.45</td><td>-54.6</td><td>-9.6</td><td>-25.0</td></tr><tr><td>103.64</td><td>-64.9</td><td>-18.3</td><td>-35.6</td></tr><tr><td>103.44</td><td>-67.7</td><td>-22.8</td><td>-39.7</td></tr><tr><td>102.55</td><td>-81.6</td><td>-50.4</td><td>-71.5</td></tr><tr><td>102.45</td><td>-76.5</td><td>-36.5</td><td>-75.8</td></tr><tr><td>102.15</td><td>-63.6</td><td>-0.9</td><td>-81.2</td></tr><tr><td>101.45</td><td>-46.3</td><td>48.2</td><td>-61.9</td></tr><tr><td>101.05</td><td>-44.3</td><td>55.5</td><td>-40.6</td></tr><tr><td>100.45</td><td>-51.6</td><td>38.9</td><td>-10.7</td></tr><tr><td>99.95</td><td>-57.7</td><td>0.0</td><td>0.0</td></tr></table> <div>Schnittgrößen ([g+q+w],k)</div> 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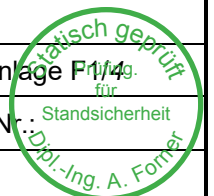
Dipl.-Ing. A. Forner





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(q,k)<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>106.89</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>106.28</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>105.55</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>105.45</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>104.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.64</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>102.55</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>102.15</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>101.05</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>99.95</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table></div> <div>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m<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>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-9.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-9.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-9.3</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.60</td><td>-8.6</td><td>4.40</td><td>38.04</td><td>38.04</td></tr><tr><td>105.55</td><td>-8.6</td><td>4.40</td><td>37.64</td><td>42.79</td></tr><tr><td>105.55</td><td>-8.6</td><td>4.40</td><td>37.67</td><td>37.67</td></tr></table></div>			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	-38.2	-12.7	-12.4	105.45	-38.6	-12.1	-13.0	105.00	-42.3	-8.2	-17.4	104.45	-47.5	-8.4	-21.8	103.64	-56.5	-15.9	-31.1	103.44	-58.9	-19.8	-34.6	102.55	-71.0	-43.5	-62.1	102.45	-66.6	-31.5	-65.8	102.15	-55.4	-0.7	-70.5	101.45	-40.4	41.8	-53.7	101.05	-38.6	48.1	-35.2	100.45	-45.1	33.7	-9.2	99.95	-50.4	0.0	0.0	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	102.15	0.0	0.0	0.0	101.45	0.0	0.0	0.0	101.05	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.0	-	-	-	107.40	-11.9	-	-	-	106.95	-11.1	-	-	-	106.89	-11.0	-	-	-	106.89	-11.0	-	-	-	106.84	-10.9	-	-	-	106.50	-10.3	-	-	-	106.45	-10.2	-	-	-	106.45	-10.2	-	-	-	106.39	-10.1	-	-	-	106.34	-10.0	-	-	-	106.28	-9.9	-	-	-	106.28	-9.9	-	-	-	106.23	-9.8	-	-	-	106.05	-9.5	-	-	-	106.00	-9.4	0.00	0.00	0.00	106.00	-9.4	0.00	0.00	0.00	105.95	-9.3	0.00	0.00	4.75	105.60	-8.6	4.40	38.04	38.04	105.55	-8.6	4.40	37.64	42.79	105.55	-8.6	4.40	37.67	37.67
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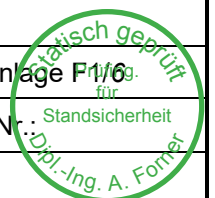


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<p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08583148 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p>						105.50	-8.5	4.40	37.27	40.25	105.50	-8.5	4.75	40.25	40.25	105.45	-8.4	4.75	39.82	42.83	105.45	-8.4	5.00	41.88	42.83	105.40	-8.3	5.00	41.42	45.41	105.05	-7.6	5.00	38.24	63.46	105.00	-7.6	5.00	37.79	66.03	105.00	-7.6	5.00	37.79	66.03	104.95	-7.5	5.00	37.33	67.33	104.50	-6.6	5.00	33.24	79.03	104.45	-6.6	5.00	32.79	80.33	104.45	-6.6	5.00	32.79	80.33	104.39	-6.5	5.00	32.34	81.63	103.69	-5.2	5.00	26.07	99.84	103.64	-5.1	5.00	25.63	101.14	103.64	-5.1	5.00	25.63	101.14	103.59	-5.0	5.00	25.19	102.41	103.49	-4.9	5.00	24.33	104.96	103.44	-4.8	5.00	23.89	106.24	103.44	-4.8	5.00	23.89	106.24	103.39	-4.7	5.00	23.46	107.52	102.60	-3.3	5.00	16.67	127.93	102.55	-3.3	5.00	16.26	129.21	102.55	-3.3	50.00	162.58	232.57	102.50	-3.2	50.00	158.40	236.03	102.50	-3.2	50.00	158.40	236.03	102.45	-3.1	50.00	154.22	239.48	102.45	-3.1	50.00	154.22	239.48	102.40	-3.0	50.00	150.07	242.94	102.20	-2.7	50.00	133.58	256.76	102.15	-2.6	50.00	129.50	260.21	102.15	-2.6	50.00	129.50	260.21	102.10	-2.5	50.00	125.43	263.67	101.50	-1.6	50.00	77.72	305.13	101.45	-1.5	50.00	73.83	308.58	101.45	-1.5	50.00	73.83	308.58	101.40	-1.4	50.00	69.95	312.04	101.10	-0.9	50.00	46.89	332.77	101.05	-0.9	50.00	43.08	336.22	101.05	-0.9	50.00	43.08	336.22	101.00	-0.8	50.00	39.27	339.68	100.50	0.0	50.00	1.53	374.23	100.45	0.0	50.00	-2.23	377.68	100.45	0.0	50.00	-2.23	377.68	100.40	0.1	50.00	-5.98	381.14	100.00	0.7	50.00	-35.97	408.78	99.95	0.8	50.00	-39.72	412.23
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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																
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_k = 141.92 \text{ kN/m}</math></p> <p><math>G'_{k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 37.45 \text{ kN/m}</math> (<math>E_{ah,k} = 224.26 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 92.23</math></p> <p>Summe <math>V_{k} = 87.14 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></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>99.95</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 143.00 / 1.40 = 102.14 \text{ kN/m}</math></p> <p><math>R_{d} = R_{b,d} + R_{s1,d} = 967.19 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 43.16 + 0.00 = 213.47 \text{ kN/m}</math></p> <p><math>\Rightarrow \mu = V_d / R_d = 213.47 / 967.19 = 0.22</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			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	99.95	55.00	s3: Flussskies, -sand
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Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 2109																
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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 6 Datei: 01_BS 6_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 1.60 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 ==&gt; 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>Blocklasten nicht umgelagert</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 7.50 m</div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/7
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 17
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>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 <math>\mu_e = 359.403 / 530.682 = 0.677</math></div> <div>Bettungslager <math>B_{h,d} = 359.403 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 530.682 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{m',k}</math> <math>\phi_{i,k}</math> <math>c(pas),k</math> <math>c(akt),k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>\leq 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>(Erddruckbeiwerte für horizontales Gelände)</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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 44.375 5.00 5.00</div> <div>103.639 103.441 44.375 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>102.450 102.200 37.017 37.898 5.00 5.00</div> <div>102.200 101.449 37.898 40.540 5.00 5.00</div> <div>101.449 101.099 40.540 41.773 5.00 5.00</div> <div>101.099 100.449 41.773 44.064 5.00 5.00</div> <div>100.449 99.949 44.064 45.825 5.00 5.00</div> <div>99.949 97.731 45.825 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 F1 Schnitt 6R	Seite Anlage F1/8
Kapitel:	2 LF 1.2 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

Statisch geprüf

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																			
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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>102.20</td><td>-147.37</td><td>-158.00</td></tr><tr><td>102.20</td><td>101.45</td><td>-158.00</td><td>-189.90</td></tr><tr><td>101.45</td><td>101.10</td><td>-189.90</td><td>-204.78</td></tr><tr><td>101.10</td><td>100.45</td><td>-204.78</td><td>-232.42</td></tr><tr><td>100.45</td><td>99.95</td><td>-232.42</td><td>-253.68</td></tr><tr><td>99.95</td><td>97.73</td><td>-253.68</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> <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>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>106.28</td><td>-31.4</td><td>-16.3</td><td>-6.8</td></tr><tr><td>106.00</td><td>-40.5</td><td>-24.6</td><td>-12.6</td></tr><tr><td>105.84</td><td>-44.1</td><td>-28.6</td><td>-16.8</td></tr><tr><td>105.55</td><td>-47.2</td><td>-29.1</td><td>-25.4</td></tr><tr><td>105.50</td><td>-47.8</td><td>-29.0</td><td>-26.9</td></tr><tr><td>105.40</td><td>-48.7</td><td>-28.2</td><td>-29.7</td></tr><tr><td>105.15</td><td>-50.3</td><td>-24.5</td><td>-36.4</td></tr><tr><td>105.00</td><td>-51.2</td><td>-22.3</td><td>-39.9</td></tr><tr><td>104.45</td><td>-55.4</td><td>-18.8</td><td>-51.0</td></tr><tr><td>103.64</td><td>-63.5</td><td>-24.2</td><td>-67.5</td></tr><tr><td>103.44</td><td>-65.9</td><td>-28.4</td><td>-72.7</td></tr><tr><td>102.55</td><td>-78.3</td><td>-55.6</td><td>-109.0</td></tr><tr><td>102.45</td><td>-71.4</td><td>-37.6</td><td>-113.7</td></tr><tr><td>102.20</td><td>-56.5</td><td>1.5</td><td>-118.0</td></tr><tr><td>101.45</td><td>-30.3</td><td>70.2</td><td>-86.7</td></tr><tr><td>101.10</td><td>-27.4</td><td>78.2</td><td>-60.2</td></tr><tr><td>100.45</td><td>-35.6</td><td>53.5</td><td>-14.6</td></tr><tr><td>99.95</td><td>-36.7</td><td>0.0</td><td>0.0</td></tr></table> <div>Schnittgrößen ([g+q+w],k)</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>107.45</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-12.1</td><td>-3.9</td><td>-0.9</td></tr><tr><td>106.45</td><td>-22.7</td><td>-10.4</td><td>-3.9</td></tr><tr><td>106.28</td><td>-27.3</td><td>-14.2</td><td>-6.0</td></tr><tr><td>106.00</td><td>-35.2</td><td>-21.4</td><td>-10.9</td></tr><tr><td>105.84</td><td>-38.4</td><td>-24.9</td><td>-14.6</td></tr><tr><td>105.55</td><td>-41.1</td><td>-25.4</td><td>-22.1</td></tr></table>			Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]		1	105.55	5.005	5.388	30.000	-20.01	18.10	2	102.55	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]	106.28	106.00	0.00	0.00	106.00	105.84	0.00	-9.31	105.84	105.55	-9.31	-26.33	105.55	105.50	-23.18	-24.77	105.50	105.40	-24.77	-27.94	105.40	105.15	-27.94	-35.86	105.15	105.00	-35.86	-40.64	105.00	104.45	-40.64	-49.44	104.45	103.64	-49.44	-62.24	103.64	103.44	-62.24	-65.38	103.44	102.55	-65.38	-79.51	102.55	102.45	-143.12	-147.37	102.45	102.20	-147.37	-158.00	102.20	101.45	-158.00	-189.90	101.45	101.10	-189.90	-204.78	101.10	100.45	-204.78	-232.42	100.45	99.95	-232.42	-253.68	99.95	97.73	-253.68	-347.95	97.73	96.48	-347.95	-401.25	96.48	80.00	-401.25	-1101.55	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	106.28	-31.4	-16.3	-6.8	106.00	-40.5	-24.6	-12.6	105.84	-44.1	-28.6	-16.8	105.55	-47.2	-29.1	-25.4	105.50	-47.8	-29.0	-26.9	105.40	-48.7	-28.2	-29.7	105.15	-50.3	-24.5	-36.4	105.00	-51.2	-22.3	-39.9	104.45	-55.4	-18.8	-51.0	103.64	-63.5	-24.2	-67.5	103.44	-65.9	-28.4	-72.7	102.55	-78.3	-55.6	-109.0	102.45	-71.4	-37.6	-113.7	102.20	-56.5	1.5	-118.0	101.45	-30.3	70.2	-86.7	101.10	-27.4	78.2	-60.2	100.45	-35.6	53.5	-14.6	99.95	-36.7	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	-3.9	-0.9	106.45	-22.7	-10.4	-3.9	106.28	-27.3	-14.2	-6.0	106.00	-35.2	-21.4	-10.9	105.84	-38.4	-24.9	-14.6	105.55	-41.1	-25.4	-22.1
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																															
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101.10	100.45	-204.78	-232.42																																																																																																																																																																																																																																																																		
100.45	99.95	-232.42	-253.68																																																																																																																																																																																																																																																																		
99.95	97.73	-253.68	-347.95																																																																																																																																																																																																																																																																		
97.73	96.48	-347.95	-401.25																																																																																																																																																																																																																																																																		
96.48	80.00	-401.25	-1101.55																																																																																																																																																																																																																																																																		
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																																																																																																																																																																																																																																																																		
106.28	-31.4	-16.3	-6.8																																																																																																																																																																																																																																																																		
106.00	-40.5	-24.6	-12.6																																																																																																																																																																																																																																																																		
105.84	-44.1	-28.6	-16.8																																																																																																																																																																																																																																																																		
105.55	-47.2	-29.1	-25.4																																																																																																																																																																																																																																																																		
105.50	-47.8	-29.0	-26.9																																																																																																																																																																																																																																																																		
105.40	-48.7	-28.2	-29.7																																																																																																																																																																																																																																																																		
105.15	-50.3	-24.5	-36.4																																																																																																																																																																																																																																																																		
105.00	-51.2	-22.3	-39.9																																																																																																																																																																																																																																																																		
104.45	-55.4	-18.8	-51.0																																																																																																																																																																																																																																																																		
103.64	-63.5	-24.2	-67.5																																																																																																																																																																																																																																																																		
103.44	-65.9	-28.4	-72.7																																																																																																																																																																																																																																																																		
102.55	-78.3	-55.6	-109.0																																																																																																																																																																																																																																																																		
102.45	-71.4	-37.6	-113.7																																																																																																																																																																																																																																																																		
102.20	-56.5	1.5	-118.0																																																																																																																																																																																																																																																																		
101.45	-30.3	70.2	-86.7																																																																																																																																																																																																																																																																		
101.10	-27.4	78.2	-60.2																																																																																																																																																																																																																																																																		
100.45	-35.6	53.5	-14.6																																																																																																																																																																																																																																																																		
99.95	-36.7	0.0	0.0																																																																																																																																																																																																																																																																		
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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	-10.4	-3.9																																																																																																																																																																																																																																																																		
106.28	-27.3	-14.2	-6.0																																																																																																																																																																																																																																																																		
106.00	-35.2	-21.4	-10.9																																																																																																																																																																																																																																																																		
105.84	-38.4	-24.9	-14.6																																																																																																																																																																																																																																																																		
105.55	-41.1	-25.4	-22.1																																																																																																																																																																																																																																																																		
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Vorgang: Genehmigungsstatik		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><div><div><div>105.50</div><div>-41.6</div><div>-25.2</div><div>-23.4</div></div><div><div>105.40</div><div>-42.3</div><div>-24.6</div><div>-25.9</div></div><div><div>105.15</div><div>-43.8</div><div>-21.3</div><div>-31.6</div></div><div><div>105.00</div><div>-44.6</div><div>-19.5</div><div>-34.7</div></div><div><div>104.45</div><div>-48.2</div><div>-16.4</div><div>-44.4</div></div><div><div>103.64</div><div>-55.3</div><div>-21.0</div><div>-58.8</div></div><div><div>103.44</div><div>-57.3</div><div>-24.6</div><div>-63.3</div></div><div><div>102.55</div><div>-68.1</div><div>-48.0</div><div>-94.7</div></div><div><div>102.45</div><div>-62.1</div><div>-32.5</div><div>-98.7</div></div><div><div>102.20</div><div>-49.2</div><div>1.4</div><div>-102.5</div></div><div><div>101.45</div><div>-26.5</div><div>61.0</div><div>-75.2</div></div><div><div>101.10</div><div>-24.0</div><div>67.9</div><div>-52.2</div></div><div><div>100.45</div><div>-31.2</div><div>46.4</div><div>-12.7</div></div><div><div>99.95</div><div>-32.1</div><div>0.0</div><div>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><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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.89</div><div>-12.1</div><div>-3.9</div><div>-0.9</div></div><div><div>106.45</div><div>-22.7</div><div>-10.4</div><div>-3.9</div></div><div><div>106.28</div><div>-27.3</div><div>-14.2</div><div>-6.0</div></div><div><div>106.00</div><div>-35.2</div><div>-21.4</div><div>-10.9</div></div><div><div>105.84</div><div>-38.4</div><div>-24.9</div><div>-14.6</div></div><div><div>105.55</div><div>-41.1</div><div>-25.4</div><div>-22.1</div></div><div><div>105.50</div><div>-41.6</div><div>-25.2</div><div>-23.4</div></div><div><div>105.40</div><div>-42.3</div><div>-24.6</div><div>-25.9</div></div><div><div>105.15</div><div>-43.8</div><div>-21.3</div><div>-31.6</div></div><div><div>105.00</div><div>-44.6</div><div>-19.5</div><div>-34.7</div></div><div><div>104.45</div><div>-48.2</div><div>-16.4</div><div>-44.4</div></div><div><div>103.64</div><div>-55.3</div><div>-21.0</div><div>-58.8</div></div><div><div>103.44</div><div>-57.3</div><div>-24.6</div><div>-63.3</div></div><div><div>102.55</div><div>-68.1</div><div>-48.0</div><div>-94.7</div></div><div><div>102.45</div><div>-62.1</div><div>-32.5</div><div>-98.7</div></div><div><div>102.20</div><div>-49.2</div><div>1.4</div><div>-102.5</div></div><div><div>101.45</div><div>-26.5</div><div>61.0</div><div>-75.2</div></div><div><div>101.10</div><div>-24.0</div><div>67.9</div><div>-52.2</div></div><div><div>100.45</div><div>-31.2</div><div>46.4</div><div>-12.7</div></div><div><div>99.95</div><div>-32.1</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><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>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>106.28</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>105.84</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.55</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>105.15</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>103.64</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>102.55</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>102.20</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>101.10</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>99.95</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div></div>					
Schnitt:	Anlage F1	Schnitt 6R	Seite Anlage F1/10		
Kapitel:	2	LF 1.2 (BS-T, mit Lasten)	Archiv Nr.: 11110		
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>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>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-12.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-12.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-12.3</td><td>0.00</td><td>0.00</td><td>5.04</td></tr><tr><td>105.89</td><td>-12.2</td><td>0.83</td><td>10.08</td><td>10.08</td></tr><tr><td>105.84</td><td>-12.1</td><td>0.83</td><td>9.97</td><td>15.13</td></tr><tr><td>105.84</td><td>-12.1</td><td>1.25</td><td>15.13</td><td>15.13</td></tr><tr><td>105.79</td><td>-11.9</td><td>1.25</td><td>14.97</td><td>19.74</td></tr><tr><td>105.60</td><td>-11.4</td><td>3.34</td><td>38.18</td><td>38.18</td></tr><tr><td>105.55</td><td>-11.3</td><td>3.34</td><td>37.77</td><td>42.79</td></tr><tr><td>105.55</td><td>-11.3</td><td>3.33</td><td>37.67</td><td>37.67</td></tr><tr><td>105.50</td><td>-11.2</td><td>3.33</td><td>37.25</td><td>40.25</td></tr><tr><td>105.50</td><td>-11.2</td><td>3.60</td><td>40.25</td><td>40.25</td></tr><tr><td>105.45</td><td>-11.1</td><td>3.60</td><td>39.80</td><td>42.82</td></tr><tr><td>105.45</td><td>-11.1</td><td>3.87</td><td>42.82</td><td>42.82</td></tr><tr><td>105.40</td><td>-10.9</td><td>3.87</td><td>42.34</td><td>45.40</td></tr><tr><td>105.40</td><td>-10.9</td><td>4.15</td><td>45.40</td><td>45.40</td></tr><tr><td>105.35</td><td>-10.8</td><td>4.15</td><td>44.87</td><td>47.97</td></tr><tr><td>105.20</td><td>-10.4</td><td>5.00</td><td>52.19</td><td>55.69</td></tr><tr><td>105.15</td><td>-10.3</td><td>5.00</td><td>51.56</td><td>58.27</td></tr><tr><td>105.15</td><td>-10.3</td><td>5.00</td><td>51.56</td><td>58.27</td></tr><tr><td>105.10</td><td>-10.2</td><td>5.00</td><td>50.93</td><td>60.86</td></tr><tr><td>105.05</td><td>-10.1</td><td>5.00</td><td>50.31</td><td>63.44</td></tr><tr><td>105.00</td><td>-9.9</td><td>5.00</td><td>49.68</td><td>66.03</td></tr><tr><td>105.00</td><td>-9.9</td><td>5.00</td><td>49.68</td><td>66.03</td></tr><tr><td>104.95</td><td>-9.8</td><td>5.00</td><td>49.05</td><td>67.33</td></tr><tr><td>104.50</td><td>-8.7</td><td>5.00</td><td>43.41</td><td>79.03</td></tr><tr><td>104.45</td><td>-8.6</td><td>5.00</td><td>42.79</td><td>80.33</td></tr><tr><td>104.45</td><td>-8.6</td><td>5.00</td><td>42.79</td><td>80.33</td></tr><tr><td>104.39</td><td>-8.4</td><td>5.00</td><td>42.17</td><td>81.63</td></tr><tr><td>103.69</td><td>-6.7</td><td>5.00</td><td>33.59</td><td>99.84</td></tr><tr><td>103.64</td><td>-6.6</td><td>5.00</td><td>32.99</td><td>101.14</td></tr><tr><td>103.64</td><td>-6.6</td><td>5.00</td><td>32.99</td><td>101.14</td></tr><tr><td>103.59</td><td>-6.5</td><td>5.00</td><td>32.40</td><td>102.41</td></tr><tr><td>103.49</td><td>-6.2</td><td>5.00</td><td>31.22</td><td>104.96</td></tr><tr><td>103.44</td><td>-6.1</td><td>5.00</td><td>30.63</td><td>106.24</td></tr><tr><td>103.44</td><td>-6.1</td><td>5.00</td><td>30.63</td><td>106.24</td></tr><tr><td>103.39</td><td>-6.0</td><td>5.00</td><td>30.04</td><td>107.52</td></tr><tr><td>102.60</td><td>-4.2</td><td>5.00</td><td>20.86</td><td>127.93</td></tr><tr><td>102.55</td><td>-4.1</td><td>5.00</td><td>20.30</td><td>129.21</td></tr><tr><td>102.55</td><td>-4.1</td><td>50.00</td><td>203.02</td><td>232.57</td></tr><tr><td>102.50</td><td>-3.9</td><td>50.00</td><td>197.38</td><td>236.03</td></tr><tr><td>102.50</td><td>-3.9</td><td>50.00</td><td>197.38</td><td>236.03</td></tr><tr><td>102.45</td><td>-3.8</td><td>50.00</td><td>191.77</td><td>239.48</td></tr><tr><td>102.45</td><td>-3.8</td><td>50.00</td><td>191.77</td><td>239.48</td></tr><tr><td>102.40</td><td>-3.7</td><td>50.00</td><td>186.18</td><td>242.94</td></tr><tr><td>102.25</td><td>-3.4</td><td>50.00</td><td>169.53</td><td>253.30</td></tr><tr><td>102.20</td><td>-3.3</td><td>50.00</td><td>164.03</td><td>256.76</td></tr><tr><td>102.20</td><td>-3.3</td><td>50.00</td><td>164.03</td><td>256.76</td></tr><tr><td>102.15</td><td>-3.2</td><td>50.00</td><td>158.54</td><td>260.21</td></tr><tr><td>101.50</td><td>-1.8</td><td>50.00</td><td>89.14</td><td>305.13</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-16.2	-	-	-	107.45	-16.1	-	-	-	107.45	-16.1	-	-	-	107.40	-16.0	-	-	-	106.95	-14.9	-	-	-	106.89	-14.7	-	-	-	106.89	-14.7	-	-	-	106.84	-14.6	-	-	-	106.50	-13.7	-	-	-	106.45	-13.6	-	-	-	106.45	-13.6	-	-	-	106.39	-13.5	-	-	-	106.34	-13.3	-	-	-	106.28	-13.2	-	-	-	106.28	-13.2	-	-	-	106.23	-13.0	-	-	-	106.04	-12.6	-	-	-	106.00	-12.5	0.00	0.00	0.00	106.00	-12.5	0.00	0.00	0.00	105.95	-12.3	0.00	0.00	5.04	105.89	-12.2	0.83	10.08	10.08	105.84	-12.1	0.83	9.97	15.13	105.84	-12.1	1.25	15.13	15.13	105.79	-11.9	1.25	14.97	19.74	105.60	-11.4	3.34	38.18	38.18	105.55	-11.3	3.34	37.77	42.79	105.55	-11.3	3.33	37.67	37.67	105.50	-11.2	3.33	37.25	40.25	105.50	-11.2	3.60	40.25	40.25	105.45	-11.1	3.60	39.80	42.82	105.45	-11.1	3.87	42.82	42.82	105.40	-10.9	3.87	42.34	45.40	105.40	-10.9	4.15	45.40	45.40	105.35	-10.8	4.15	44.87	47.97	105.20	-10.4	5.00	52.19	55.69	105.15	-10.3	5.00	51.56	58.27	105.15	-10.3	5.00	51.56	58.27	105.10	-10.2	5.00	50.93	60.86	105.05	-10.1	5.00	50.31	63.44	105.00	-9.9	5.00	49.68	66.03	105.00	-9.9	5.00	49.68	66.03	104.95	-9.8	5.00	49.05	67.33	104.50	-8.7	5.00	43.41	79.03	104.45	-8.6	5.00	42.79	80.33	104.45	-8.6	5.00	42.79	80.33	104.39	-8.4	5.00	42.17	81.63	103.69	-6.7	5.00	33.59	99.84	103.64	-6.6	5.00	32.99	101.14	103.64	-6.6	5.00	32.99	101.14	103.59	-6.5	5.00	32.40	102.41	103.49	-6.2	5.00	31.22	104.96	103.44	-6.1	5.00	30.63	106.24	103.44	-6.1	5.00	30.63	106.24	103.39	-6.0	5.00	30.04	107.52	102.60	-4.2	5.00	20.86	127.93	102.55	-4.1	5.00	20.30	129.21	102.55	-4.1	50.00	203.02	232.57	102.50	-3.9	50.00	197.38	236.03	102.50	-3.9	50.00	197.38	236.03	102.45	-3.8	50.00	191.77	239.48	102.45	-3.8	50.00	191.77	239.48	102.40	-3.7	50.00	186.18	242.94	102.25	-3.4	50.00	169.53	253.30	102.20	-3.3	50.00	164.03	256.76	102.20	-3.3	50.00	164.03	256.76	102.15	-3.2	50.00	158.54	260.21	101.50	-1.8	50.00	89.14	305.13
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102.55	-4.1	50.00	203.02	232.57																																																																																																																																																																																																																																																																																																																																																										
102.50	-3.9	50.00	197.38	236.03																																																																																																																																																																																																																																																																																																																																																										
102.50	-3.9	50.00	197.38	236.03																																																																																																																																																																																																																																																																																																																																																										
102.45	-3.8	50.00	191.77	239.48																																																																																																																																																																																																																																																																																																																																																										
102.45	-3.8	50.00	191.77	239.48																																																																																																																																																																																																																																																																																																																																																										
102.40	-3.7	50.00	186.18	242.94																																																																																																																																																																																																																																																																																																																																																										
102.25	-3.4	50.00	169.53	253.30																																																																																																																																																																																																																																																																																																																																																										
102.20	-3.3	50.00	164.03	256.76																																																																																																																																																																																																																																																																																																																																																										
102.20	-3.3	50.00	164.03	256.76																																																																																																																																																																																																																																																																																																																																																										
102.15	-3.2	50.00	158.54	260.21																																																																																																																																																																																																																																																																																																																																																										
101.50	-1.8	50.00	89.14	305.13																																																																																																																																																																																																																																																																																																																																																										
Schnitt:		Anlage F1 Schnitt 6R		Seite Anlage F1/14																																																																																																																																																																																																																																																																																																																																																										
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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

101.45	-1.7	50.00	83.93	308.58
101.45	-1.7	50.00	83.93	308.58
101.40	-1.6	50.00	78.74	312.04
101.15	-1.1	50.00	52.99	329.31
101.10	-1.0	50.00	47.88	332.77
101.10	-1.0	50.00	47.88	332.77
101.05	-0.9	50.00	42.79	336.22
100.50	0.3	50.00	-12.77	374.23
100.45	0.4	50.00	-17.79	377.68
100.45	0.4	50.00	-17.79	377.68
100.40	0.5	50.00	-22.81	381.14
100.00	1.3	50.00	-62.90	408.78
99.95	1.4	50.00	-67.90	412.23

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.11473634$   
 Theoretischer Fußpunkt = 99.949 m

Einbindetiefe  $t_g = 6.05$  m  
 Profillänge = 7.50 m

Nachweis Summe V  
 Nachweis des mobilisierten Erdwiderstands  
 Bedingung:  $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$   
 $G_{v,k} = 141.92$  kN/m  
 $G'_{v,k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 43.61$  kN/m ( $E_{ah,k} = 261.43$  kN/m)  
 $B_{v,k} = 108.94$   
 Summe  $V_{v,k} = 76.59$  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/m<sup>2</sup>  
 (gemittelt von 100.83 bis 97.31 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung
 


von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	105.55	0.00	S1: Auffüllungen
105.55	102.55	0.00	S2: Auelehm
102.55	99.95	55.00	s3: Flussskies, -sand

 Mantelfläche bis 99.95 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 143.00 / 1.40 = 102.14$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 967.19$  kN/m

Einwirkungen  
 $V_{v,d} = G_{v,d} - G'_{v,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 50.25 + 0.00 = 220.56$  kN/m  
 $\Rightarrow \mu = V_{v,d} / R_{d} = 220.56 / 967.19 = 0.23$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage F1 Schnitt 6R	Seite Anlage F1/12
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><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: 02_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 ==&gt; 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 = 8.75 m</p>		
Schnitt:	Anlage F1 Schnitt 6R	Seite Anlage F1/13
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):
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  $\mu_e = 265.310 / 267.938 = 0.990$

Bettungslager  $B_{h,d} = 265.310 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 267.938 \text{ kN/m}$

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	106.95	0.00	1.00	-101.42	-87.83	-87.83	-8.31	6.900E+4	2.100E+7	-111.98 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]
-1.00	106.95	-12.8	0.0	-101.55	0.00	0.00
-0.90	106.95	-12.9	0.0	-101.55	0.00	0.00
-0.90	106.95	-12.9	0.0	-101.55	0.00	0.00
-0.80	106.95	-13.1	0.0	-101.55	0.00	0.00
-0.70	106.95	-13.2	0.0	-101.55	0.00	0.00
-0.60	106.95	-13.4	0.0	-101.55	0.00	0.00
-0.50	106.95	-13.5	0.0	-101.55	0.00	0.00
-0.40	106.95	-13.7	0.0	-101.55	0.00	0.00
-0.30	106.95	-13.8	0.0	-101.55	0.00	0.00
-0.20	106.95	-14.0	0.0	-101.55	0.00	0.00
-0.10	106.95	-14.1	0.0	-101.55	0.00	0.00
0.00	106.95	-14.3	0.0	-101.55	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\00\_BS 6\_LF1.1 (ohne Lasten).vrb

eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	106.95	-0.0111

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

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.

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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

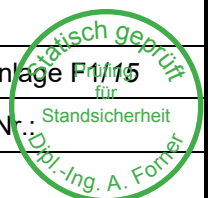
  

Schnitt: Anlage F1 Schnitt 6R	Seite Anlage F1/14
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.:
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

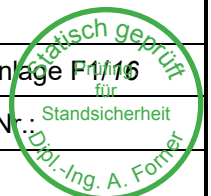
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																	
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<div>Aktive Erddruckkoordinaten ([g+q],k)</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>104.250</td><td>22.666</td><td>22.666</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</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>44.019</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.699</td><td>44.019</td><td>46.661</td><td>5.00</td><td>5.00</td></tr><tr><td>98.699</td><td>97.731</td><td>46.661</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>-131.80</td></tr><tr><td>99.45</td><td>98.70</td><td>-131.80</td><td>-163.69</td></tr><tr><td>98.70</td><td>97.73</td><td>-163.69</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>-101.5</td></tr><tr><td>106.95</td><td>-16.6</td><td>85.9</td><td>-3.9</td><td></td></tr><tr><td>106.89</td><td>-18.7</td><td>83.9</td><td>1.5</td><td></td></tr><tr><td>106.45</td><td>-33.2</td><td>70.3</td><td>35.1</td><td></td></tr><tr><td>106.28</td><td>-38.8</td><td>65.0</td><td>46.6</td><td></td></tr><tr><td>105.55</td><td>-63.0</td><td>42.1</td><td>85.7</td><td></td></tr><tr><td>105.50</td><td>-64.5</td><td>40.6</td><td>87.8</td><td></td></tr><tr><td>105.40</td><td>-67.5</td><td>37.4</td><td>91.7</td><td></td></tr><tr><td>105.00</td><td>-79.6</td><td>23.4</td><td>103.9</td><td></td></tr><tr><td>104.40</td><td>-96.8</td><td>4.2</td><td>112.2</td><td></td></tr><tr><td>104.25</td><td>-101.1</td><td>-0.6</td><td>112.4</td><td></td></tr><tr><td>103.64</td><td>-118.7</td><td>-20.2</td><td>106.1</td><td></td></tr><tr><td>103.40</td><td>-125.9</td><td>-28.9</td><td>100.2</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	104.250	22.666	22.666	5.00	5.00	104.250	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	44.019	5.00	5.00	99.449	98.699	44.019	46.661	5.00	5.00	98.699	97.731	46.661	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	-131.80	99.45	98.70	-131.80	-163.69	98.70	97.73	-163.69	-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	-101.5	106.95	-16.6	85.9	-3.9		106.89	-18.7	83.9	1.5		106.45	-33.2	70.3	35.1		106.28	-38.8	65.0	46.6		105.55	-63.0	42.1	85.7		105.50	-64.5	40.6	87.8		105.40	-67.5	37.4	91.7		105.00	-79.6	23.4	103.9		104.40	-96.8	4.2	112.2		104.25	-101.1	-0.6	112.4		103.64	-118.7	-20.2	106.1		103.40	-125.9	-28.9	100.2	
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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><div>102.55 -151.3 -60.0 62.3</div><div>102.45 -154.1 -64.3 56.1</div><div>101.85 -160.1 -74.0 13.3</div><div>101.45 -157.9 -65.5 -15.0</div><div>100.45 -131.2 6.0 -50.1</div><div>99.45 -117.9 40.2 -18.6</div><div>98.70 -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>107.45 0.0 0.0 0.0</div><div>106.95 -14.4 -13.6 -3.4 -87.8</div><div>106.95 -14.4 74.2 -3.4</div><div>106.89 -16.3 72.5 1.3</div><div>106.45 -28.8 60.6 30.3</div><div>106.28 -33.7 56.0 40.2</div><div>105.55 -54.8 36.2 73.9</div><div>105.50 -56.1 34.8 75.6</div><div>105.40 -58.7 32.0 79.0</div><div>105.00 -69.2 19.9 89.4</div><div>104.40 -84.2 3.3 96.4</div><div>104.25 -87.9 -0.8 96.6</div><div>103.64 -103.2 -17.7 90.9</div><div>103.40 -109.4 -25.2 85.8</div><div>102.55 -131.5 -51.9 53.0</div><div>102.45 -134.0 -55.6 47.6</div><div>101.85 -139.2 -63.9 10.6</div><div>101.45 -137.3 -56.4 -13.8</div><div>100.45 -114.2 5.6 -43.8</div><div>99.45 -102.6 35.0 -16.2</div><div>98.70 -112.1 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>107.45 0.0 0.0 0.0</div><div>106.95 -14.4 -13.6 -3.4 -87.8</div><div>106.95 -14.4 74.2 -3.4</div><div>106.89 -16.3 72.5 1.3</div><div>106.45 -28.8 60.6 30.3</div><div>106.28 -33.7 56.0 40.2</div><div>105.55 -54.8 36.2 73.9</div><div>105.50 -56.1 34.8 75.6</div><div>105.40 -58.7 32.0 79.0</div><div>105.00 -69.2 19.9 89.4</div><div>104.40 -84.2 3.3 96.4</div><div>104.25 -87.9 -0.8 96.6</div><div>103.64 -103.2 -17.7 90.9</div><div>103.40 -109.4 -25.2 85.8</div><div>102.55 -131.5 -51.9 53.0</div><div>102.45 -134.0 -55.6 47.6</div><div>101.85 -139.2 -63.9 10.6</div><div>101.45 -137.3 -56.4 -13.8</div><div>100.45 -114.2 5.6 -43.8</div><div>99.45 -102.6 35.0 -16.2</div><div>98.70 -112.1 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>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>104.40 0.0 0.0 0.0</div></div></div></div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 116
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>104.25</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.64</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>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>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>98.70</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>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-12.3</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>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.28</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-11.5</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>105.55</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>105.45</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-8.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.69</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.64</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.64</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.59</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.1</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.50</td><td>-6.0</td><td>0.00</td><td>0.00</td><td>3.45</td></tr><tr><td>102.50</td><td>-6.0</td><td>0.58</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-5.9</td><td>0.58</td><td>3.40</td><td>6.91</td></tr><tr><td>102.45</td><td>-5.9</td><td>1.17</td><td>6.91</td><td>6.91</td></tr><tr><td>102.40</td><td>-5.8</td><td>1.17</td><td>6.81</td><td>10.36</td></tr><tr><td>101.90</td><td>-4.9</td><td>9.11</td><td>44.91</td><td>44.91</td></tr><tr><td>101.85</td><td>-4.8</td><td>9.11</td><td>44.10</td><td>48.36</td></tr></table>						104.25	0.0	0.0	0.0	103.64	0.0	0.0	0.0	103.40	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	98.70	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-13.0	-	-	-	107.40	-12.9	-	-	-	107.00	-12.5	-	-	-	106.95	-12.4	-	-	-	106.95	-12.4	-	-	-	106.89	-12.3	-	-	-	106.89	-12.3	-	-	-	106.84	-12.3	-	-	-	106.50	-11.8	-	-	-	106.45	-11.8	-	-	-	106.45	-11.8	-	-	-	106.39	-11.7	-	-	-	106.34	-11.7	-	-	-	106.28	-11.6	-	-	-	106.28	-11.6	-	-	-	106.23	-11.5	-	-	-	105.60	-10.7	-	-	-	105.55	-10.7	-	-	-	105.55	-10.7	-	-	-	105.50	-10.6	-	-	-	105.50	-10.6	-	-	-	105.45	-10.5	-	-	-	105.45	-10.5	-	-	-	105.40	-10.5	-	-	-	105.40	-10.5	-	-	-	105.35	-10.4	-	-	-	105.05	-10.0	-	-	-	105.00	-9.9	-	-	-	105.00	-9.9	-	-	-	104.95	-9.9	-	-	-	104.45	-9.1	-	-	-	104.40	-9.1	-	-	-	104.40	-9.1	-	-	-	104.35	-9.0	-	-	-	104.30	-8.9	-	-	-	104.25	-8.8	-	-	-	104.25	-8.8	-	-	-	104.20	-8.8	-	-	-	103.69	-8.0	-	-	-	103.64	-7.9	-	-	-	103.64	-7.9	-	-	-	103.59	-7.8	-	-	-	103.45	-7.6	-	-	-	103.40	-7.5	-	-	-	103.40	-7.5	-	-	-	103.35	-7.4	-	-	-	102.60	-6.2	-	-	-	102.55	-6.1	0.00	0.00	0.00	102.55	-6.1	0.00	0.00	0.00	102.50	-6.0	0.00	0.00	3.45	102.50	-6.0	0.58	3.45	3.45	102.45	-5.9	0.58	3.40	6.91	102.45	-5.9	1.17	6.91	6.91	102.40	-5.8	1.17	6.81	10.36	101.90	-4.9	9.11	44.91	44.91	101.85	-4.8	9.11	44.10	48.36
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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

101.85	-4.8	9.99	48.36	48.36
101.80	-4.8	9.99	47.48	51.82
101.50	-4.2	17.19	72.55	72.54
101.45	-4.1	17.19	71.02	76.00
101.45	-4.1	18.40	76.00	76.00
101.40	-4.0	18.40	74.37	79.45
100.50	-2.5	50.00	123.33	141.63
100.45	-2.4	50.00	119.03	145.09
100.45	-2.4	50.00	119.03	145.09
100.40	-2.3	50.00	114.74	148.54
99.50	-0.8	50.00	38.91	210.72
99.45	-0.7	50.00	34.75	214.17
99.45	-0.7	50.00	34.75	214.17
99.40	-0.6	50.00	30.60	217.63
98.75	0.5	50.00	-23.23	262.54
98.70	0.5	50.00	-27.36	265.99

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.09476515$   
 Theoretischer Fußpunkt = 98.699 m

Einbindetiefe  $t_g = 3.85$  m  
 Profillänge = 8.75 m

Nachweis Summe V  
 Nachweis des mobilisierten Erdwiderstands  
 Bedingung:  $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$   
 $G_{i,k} = 165.58$  kN/m  
 $G'_{i,k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 48.49$  kN/m ( $E_{ah,k} = 279.84$  kN/m)  
 $B_{v,k} = 91.14$   
 Summe  $V_{i,k} = 122.93$  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/m<sup>2</sup>  
 (gemittelt von 99.58 bis 96.06 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung  

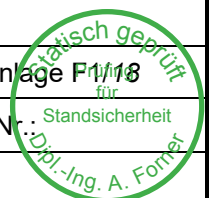
von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
102.55	98.70	55.00	s3: Flussskies, -sand

 Mantelfläche bis 98.70 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 211.75 / 1.40 = 151.25$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 1016.30$  kN/m

Einwirkungen  
 $V_d = G_d - G'_{i,k} + E_{av,d} + P_{v,d} = 198.69 - 0.00 + 55.89 + 0.00 = 254.58$  kN/m  
 $\Rightarrow \mu = V_d / R_d = 254.58 / 1016.30 = 0.25$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage F1 Schnitt 6R	Seite Anlage F1/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 11118
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 6 Datei: 03_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 ==&gt; 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 = 9.00 m</div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/19
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 1119
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  $\mu_e = 306.074 / 307.000 = 0.997$   
 Bettungslager  $B_{h,d} = 306.074 \text{ kN/m}$   
 Erdwiderstand  $E_{ph,d} = 307.000 \text{ kN/m}$

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	106.95	0.00	1.00	-124.37	-107.78	-107.78	-8.46	6.900E+4	2.100E+7	-137.42

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]
-1.00	106.95	-12.8	0.0	-124.50	0.00	0.00
-0.90	106.95	-13.0	0.0	-124.50	0.00	0.00
-0.90	106.95	-13.0	0.0	-124.50	0.00	0.00
-0.80	106.95	-13.2	0.0	-124.50	0.00	0.00
-0.70	106.95	-13.3	0.0	-124.50	0.00	0.00
-0.60	106.95	-13.5	0.0	-124.50	0.00	0.00
-0.50	106.95	-13.7	0.0	-124.50	0.00	0.00
-0.40	106.95	-13.9	0.0	-124.50	0.00	0.00
-0.30	106.95	-14.1	0.0	-124.50	0.00	0.00
-0.20	106.95	-14.2	0.0	-124.50	0.00	0.00
-0.10	106.95	-14.4	0.0	-124.50	0.00	0.00
0.00	106.95	-14.6	0.1	-124.50	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\00\_BS\_6\_LF1.1 (ohne Lasten).vrb  
 eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	106.95	-0.0111


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

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.

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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

Schnitt: Anlage F1	Schnitt 6R	Seite Anlage F1/20
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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<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>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>51.108</td><td>5.00</td><td>5.00</td></tr><tr><td>98.449</td><td>97.731</td><td>51.108</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 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>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>-131.80</td></tr><tr><td>99.45</td><td>98.45</td><td>-131.80</td><td>-174.31</td></tr><tr><td>98.45</td><td>97.73</td><td>-174.31</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>-124.5</td></tr><tr><td>106.95</td><td>-17.9</td><td>105.3</td><td>-4.8</td><td></td></tr><tr><td>106.89</td><td>-20.2</td><td>102.9</td><td>1.9</td><td></td></tr><tr><td>106.45</td><td>-35.7</td><td>86.1</td><td>43.1</td><td></td></tr><tr><td>106.28</td><td>-41.8</td><td>79.6</td><td>57.1</td><td></td></tr><tr><td>105.84</td><td>-57.5</td><td>62.8</td><td>88.4</td><td></td></tr><tr><td>105.55</td><td>-67.9</td><td>51.6</td><td>105.1</td><td></td></tr><tr><td>105.50</td><td>-69.5</td><td>49.7</td><td>107.6</td><td></td></tr><tr><td>105.45</td><td>-71.1</td><td>47.8</td><td>110.0</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	51.108	5.00	5.00	98.449	97.731	51.108	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	-131.80	99.45	98.45	-131.80	-174.31	98.45	97.73	-174.31	-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	-124.5	106.95	-17.9	105.3	-4.8		106.89	-20.2	102.9	1.9		106.45	-35.7	86.1	43.1		106.28	-41.8	79.6	57.1		105.84	-57.5	62.8	88.4		105.55	-67.9	51.6	105.1		105.50	-69.5	49.7	107.6		105.45	-71.1	47.8	110.0	
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99.45	98.45	-131.80	-174.31																																																																																																																																																																																																																																																																																																																						
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106.89	-20.2	102.9	1.9																																																																																																																																																																																																																																																																																																																						
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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>105.15</div><div>-80.7</div><div>35.6</div><div>122.5</div><div></div></div><div><div>105.00</div><div>-85.5</div><div>29.0</div><div>127.4</div><div></div></div><div><div>104.40</div><div>-103.7</div><div>6.2</div><div>138.0</div><div></div></div><div><div>104.25</div><div>-108.3</div><div>0.5</div><div>138.5</div><div></div></div><div><div>103.64</div><div>-126.8</div><div>-22.7</div><div>131.7</div><div></div></div><div><div>103.40</div><div>-134.3</div><div>-32.8</div><div>125.1</div><div></div></div><div><div>102.55</div><div>-161.1</div><div>-68.9</div><div>81.8</div><div></div></div><div><div>102.45</div><div>-164.0</div><div>-73.6</div><div>74.7</div><div></div></div><div><div>101.85</div><div>-170.0</div><div>-85.8</div><div>25.5</div><div></div></div><div><div>101.45</div><div>-167.8</div><div>-78.9</div><div>-7.8</div><div></div></div><div><div>100.45</div><div>-140.3</div><div>-9.5</div><div>-58.2</div><div></div></div><div><div>99.45</div><div>-116.9</div><div>46.0</div><div>-31.4</div><div></div></div><div><div>98.45</div><div>-127.9</div><div>0.0</div><div>0.0</div><div></div></div></div> <div><div>Schnittgrößen 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Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.:					
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025					



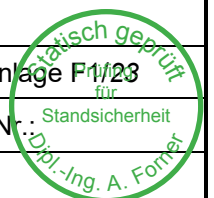
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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> 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Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																															

Statisch geprüft

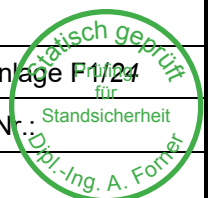
für

Standicherheit

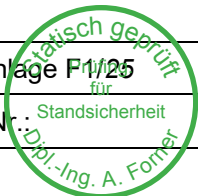
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div> <div> 104.40 -9.6 - - -  104.35 -9.5 - - -  104.30 -9.4 - - -  104.25 -9.4 - - -  104.25 -9.4 - - -  104.20 -9.3 - - -  103.69 -8.5 - - -  103.64 -8.4 - - -  103.64 -8.4 - - -  103.59 -8.4 - - -  103.45 -8.1 - - -  103.40 -8.1 - - -  103.40 -8.1 - - -  103.35 -8.0 - - -  102.60 -6.7 - - -  102.55 -6.6 0.00 0.00 0.00  102.55 -6.6 0.00 0.00 0.00  102.50 -6.5 0.00 0.00 3.45  102.50 -6.5 0.53 3.45 3.45  102.45 -6.4 0.53 3.41 6.91  102.45 -6.4 1.07 6.91 6.91  102.40 -6.3 1.07 6.81 10.36  101.90 -5.4 8.24 44.91 44.91  101.85 -5.4 8.24 44.16 48.36  101.85 -5.4 9.03 48.36 48.36  101.80 -5.3 9.03 47.55 51.82  101.50 -4.7 15.36 72.55 72.54  101.45 -4.6 15.36 71.15 76.00  101.45 -4.6 16.41 76.00 76.00  101.40 -4.5 16.41 74.51 79.45  100.50 -2.9 48.38 141.64 141.63  100.45 -2.8 48.38 137.39 145.08  100.45 -2.8 50.00 141.99 145.08  100.40 -2.8 50.00 137.60 148.54  99.50 -1.2 50.00 60.35 210.72  99.45 -1.1 50.00 56.13 214.17  99.45 -1.1 50.00 56.13 214.17  99.40 -1.0 50.00 51.93 217.62  98.50 0.5 50.00 -23.26 279.80  98.45 0.5 50.00 -27.43 283.26 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.09545837  Theoretischer Fußpunkt = 98.449 m</p> <p>Einbindetiefe <math>t_g</math> = 4.10 m  Profillänge = 9.00 m</p> </div> </div>		
Schnitt: Anlage F1	Schnitt 6R	Seite Anlage F1/24
Kapitel: 4	LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 21.06.2024
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: <math>P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_k = 170.31 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 58.03 \text{ kN/m}</math> (<math>E_{ah,k} = 333.92 \text{ kN/m}</math>) <math>B_{v,k} = 105.20</math> Summe <math>V_k = 123.14 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 99.33 bis 95.81 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 98.45 55.00 s3: Flussskies, -sand Mantelfläche bis 98.45 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 225.50 / 1.40 = 161.07 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 1026.12 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 204.37 - 0.00 + 66.86 + 0.00 = 271.23 \text{ kN/m}</math> <math>\Rightarrow \mu = V_d / R_d = 271.23 / 1026.12 = 0.26</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/25
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

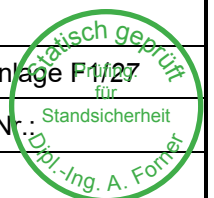


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>5 LF 3 (BS-T, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 04_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 ==&gt; 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 F1 Schnitt 6R		Seite Anlage F1/26
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1126
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> <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>107.45</td><td>-28.20</td><td>0.00</td><td>0.00</td><td>0.00</td><td>44.00</td><td>0.00</td></tr></table> <div>Blocklasten nicht umgelagert</div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 9.20 m</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 <math>\mu_e = 112.066 / 112.453 = 0.997</math></div> <div>Bettungslager <math>B_{h,d} = 112.066 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 112.453 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{,d}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td><math>N_{,d}</math></td><td><math>N(g+q+w),k</math></td><td><math>N(g+w),k</math></td><td><math>N_{w,k}</math></td><td>EA</td><td>EI</td><td><math>N_{,d}'</math></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>-387.69</td><td>-324.56</td><td>-241.88</td><td>-49.77</td><td>3.900E+7</td><td>2.100E+7</td><td>-432.41</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{,d}</math> [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><math>N_{,d}</math></td><td><math>Q_{,d}</math></td><td><math>M_{,d}</math></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>-9.3</td><td>0.0</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.3</td><td>0.0</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-9.3</td><td>0.0</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-9.3</td><td>0.0</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-9.3</td><td>0.0</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-9.3</td><td>0.0</td><td>-388.39</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>-388.39</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>-388.39</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>-388.39</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>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-9.4</td><td>0.1</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-9.4</td><td>0.1</td><td>-388.39</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0081</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(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>105.55</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>						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	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	-387.69	-324.56	-241.88	-49.77	3.900E+7	2.100E+7	-432.41	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	-9.3	0.0	-388.39	0.00	0.00	-7.47	103.72	-9.3	0.0	-388.39	0.00	0.00	-7.47	103.72	-9.3	0.0	-388.39	0.00	0.00	-6.64	103.72	-9.3	0.0	-388.39	0.00	0.00	-5.81	103.72	-9.3	0.0	-388.39	0.00	0.00	-4.98	103.72	-9.3	0.0	-388.39	0.00	0.00	-4.15	103.72	-9.4	0.0	-388.39	0.00	0.00	-3.32	103.72	-9.4	0.0	-388.39	0.00	0.00	-2.49	103.72	-9.4	0.0	-388.39	0.00	0.00	-1.66	103.72	-9.4	0.0	-388.39	0.00	0.00	-0.83	103.72	-9.4	0.1	-388.39	0.00	0.00	0.00	103.72	-9.4	0.1	-388.39	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0081	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
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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>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>)</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>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>40.188</td><td>0.00</td><td>0.00</td></tr><tr><td>101.550</td><td>100.549</td><td>40.188</td><td>43.711</td><td>0.00</td><td>0.00</td></tr><tr><td>100.549</td><td>99.849</td><td>43.711</td><td>46.177</td><td>0.00</td><td>0.00</td></tr><tr><td>99.849</td><td>99.549</td><td>46.177</td><td>47.234</td><td>0.00</td><td>0.00</td></tr><tr><td>99.549</td><td>99.349</td><td>47.234</td><td>47.938</td><td>0.00</td><td>0.00</td></tr><tr><td>99.349</td><td>97.731</td><td>47.938</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><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>108.55</td><td>102.55</td></tr></table></div> <div>Passive Erddruckbeiwerte</div> <div>bestimmt nach: DIN 4085:2017</div> <div><table><tr><th>Schicht</th><th>UK</th><th><math>k_{ph}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></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><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>103.50</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>-42.52</td></tr><tr><td>101.55</td><td>100.55</td><td>-42.52</td><td>-85.04</td></tr><tr><td>100.55</td><td>99.85</td><td>-85.04</td><td>-114.80</td></tr><tr><td>99.85</td><td>99.55</td><td>-114.80</td><td>-127.56</td></tr><tr><td>99.55</td><td>99.35</td><td>-127.56</td><td>-136.06</td></tr><tr><td>99.35</td><td>97.73</td><td>-136.06</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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	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	40.188	0.00	0.00	101.550	100.549	40.188	43.711	0.00	0.00	100.549	99.849	43.711	46.177	0.00	0.00	99.849	99.549	46.177	47.234	0.00	0.00	99.549	99.349	47.234	47.938	0.00	0.00	99.349	97.731	47.938	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	$k_{ph}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	-42.52	101.55	100.55	-42.52	-85.04	100.55	99.85	-85.04	-114.80	99.85	99.55	-114.80	-127.56	99.55	99.35	-127.56	-136.06	99.35	97.73	-136.06	-204.83	97.73	96.48	-204.83	-258.13	96.48	80.00	-258.13	-958.43	<div>Schnitt: Anlage F1 Schnitt 6R</div> <div>Kapitel: 5 LF 3 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>	<div>Seite Anlage F1/28</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																						
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<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>108.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.55</td><td>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>108.54</td><td>-0.2</td><td>-0.1</td><td>0.0</td><td></td><td></td></tr><tr><td>107.55</td><td>-32.3</td><td>-29.0</td><td>-13.7</td><td></td><td></td></tr><tr><td>107.45</td><td>-35.7</td><td>-32.3</td><td>-16.8</td><td></td><td></td></tr><tr><td>107.45</td><td>-88.5</td><td>-32.3</td><td>-50.6</td><td></td><td></td></tr><tr><td>106.49</td><td>-122.6</td><td>-68.8</td><td>-98.4</td><td></td><td></td></tr><tr><td>105.59</td><td>-154.2</td><td>-101.5</td><td>-176.5</td><td></td><td></td></tr><tr><td>105.55</td><td>-155.4</td><td>-102.6</td><td>-180.2</td><td></td><td></td></tr><tr><td>105.50</td><td>-157.0</td><td>-104.4</td><td>-185.4</td><td></td><td></td></tr><tr><td>104.50</td><td>-189.4</td><td>-150.0</td><td>-311.2</td><td></td><td></td></tr><tr><td>103.72</td><td>-215.6</td><td>-197.3</td><td>-446.0</td><td>-388.4</td><td></td></tr><tr><td>103.72</td><td>-215.6</td><td>191.1</td><td>-446.0</td><td></td><td></td></tr><tr><td>103.64</td><td>-218.3</td><td>185.6</td><td>-430.7</td><td></td><td></td></tr><tr><td>103.50</td><td>-223.2</td><td>175.3</td><td>-405.6</td><td></td><td></td></tr><tr><td>102.55</td><td>-257.6</td><td>96.0</td><td>-275.6</td><td></td><td></td></tr><tr><td>102.50</td><td>-259.5</td><td>93.9</td><td>-270.9</td><td></td><td></td></tr><tr><td>101.55</td><td>-265.6</td><td>88.2</td><td>-189.5</td><td></td><td></td></tr><tr><td>100.55</td><td>-258.5</td><td>112.1</td><td>-84.0</td><td></td><td></td></tr><tr><td>99.85</td><td>-267.8</td><td>66.9</td><td>-17.9</td><td></td><td></td></tr><tr><td>99.55</td><td>-266.1</td><td>30.2</td><td>-3.1</td><td></td><td></td></tr><tr><td>99.35</td><td>-262.8</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></tbody></table> 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107.45	-24.0	-8.7	-4.0																																																																																																																																																																																																																																																																																																																																																																																																														
107.45	-68.0	-8.7	-32.2																																																																																																																																																																																																																																																																																																																																																																																																														
106.49	-91.5	-23.7	-47.1																																																																																																																																																																																																																																																																																																																																																																																																														
105.59	-116.1	-44.0	-77.4																																																																																																																																																																																																																																																																																																																																																																																																														
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	-241.9																																																																																																																																																																																																																																																																																																																																																																																																													
103.72	-169.4	115.2	-228.8																																																																																																																																																																																																																																																																																																																																																																																																														
103.64	-171.8	110.5	-219.6																																																																																																																																																																																																																																																																																																																																																																																																														
103.50	-176.1	101.7	-204.9																																																																																																																																																																																																																																																																																																																																																																																																														
102.55	-206.0	33.9	-139.5																																																																																																																																																																																																																																																																																																																																																																																																														
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Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1129																																																																																																																																																																																																																																																																																																																																																																																																													
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>102.50 -207.6 32.0 -137.9</div><div>101.55 -211.3 31.3 -113.1</div><div>100.55 -197.5 71.8 -57.7</div><div>99.85 -205.5 47.6 -13.0</div><div>99.55 -206.6 22.1 -2.3</div><div>99.35 -205.4 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 -91.5</div><div>103.72 -14.2 43.6 -139.2</div><div>103.64 -14.2 43.6 -135.7</div><div>103.50 -14.2 43.6 -129.6</div><div>102.55 -14.2 43.6 -88.2</div><div>102.50 -14.2 43.6 -86.1</div><div>101.55 -15.7 40.0 -45.6</div><div>100.55 -22.5 22.7 -13.5</div><div>99.85 -22.7 9.3 -2.3</div><div>99.55 -20.5 3.7 -0.4</div><div>99.35 -19.0 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><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 -26.8 - - -</div><div>108.55 -26.8 - - -</div><div>108.55 -26.8 - - -</div><div>108.54 -26.8 - - -</div><div>108.54 -26.8 - - -</div><div>108.49 -26.6 - - -</div><div>107.60 -22.9 - - -</div><div>107.55 -22.7 - - -</div><div>107.55 -22.7 - - -</div><div>107.50 -22.4 - - -</div><div>107.50 -22.4 - - -</div><div>107.45 -22.2 - - -</div><div>107.45 -22.2 - - -</div><div>107.40 -22.0 - - -</div><div>106.55 -18.6 - - -</div><div>106.49 -18.3 - - -</div><div>106.49 -18.3 - - -</div><div>106.44 -18.1 - - -</div><div>105.64 -15.0 - - -</div><div>105.59 -14.8 - - -</div><div>105.59 -14.8 - - -</div><div>105.55 -14.6 - - -</div><div>105.55 -14.6 - - -</div><div>105.50 -14.4 - - -</div><div>105.50 -14.4 - - -</div><div>105.45 -14.2 - - -</div><div>104.55 -10.9 - - -</div><div>104.50 -10.7 - - -</div><div>104.50 -10.7 - - -</div><div>104.45 -10.6 - - -</div><div>103.77 -8.3 - - -</div><div>103.72 -8.2 - - -</div><div>103.72 -8.2 - - -</div><div>103.68 -8.0 - - -</div><div>103.68 -8.0 - - -</div></div></div></div></div></div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/30
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 100
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>103.64</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.64</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.59</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.55</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</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>0.72</td><td>3.45</td><td>3.45</td></tr><tr><td>102.45</td><td>-4.7</td><td>0.72</td><td>3.37</td><td>6.91</td></tr><tr><td>101.60</td><td>-2.7</td><td>24.36</td><td>65.64</td><td>65.64</td></tr><tr><td>101.55</td><td>-2.6</td><td>24.36</td><td>62.98</td><td>69.09</td></tr><tr><td>101.55</td><td>-2.6</td><td>26.73</td><td>69.10</td><td>69.09</td></tr><tr><td>101.50</td><td>-2.5</td><td>26.73</td><td>66.19</td><td>72.55</td></tr><tr><td>100.60</td><td>-0.6</td><td>50.00</td><td>30.67</td><td>134.73</td></tr><tr><td>100.55</td><td>-0.5</td><td>50.00</td><td>25.70</td><td>138.19</td></tr><tr><td>100.55</td><td>-0.5</td><td>50.00</td><td>25.70</td><td>138.19</td></tr><tr><td>100.50</td><td>-0.4</td><td>50.00</td><td>20.75</td><td>141.64</td></tr><tr><td>99.90</td><td>0.8</td><td>50.00</td><td>-37.85</td><td>183.10</td></tr><tr><td>99.85</td><td>0.9</td><td>50.00</td><td>-42.69</td><td>186.55</td></tr><tr><td>99.85</td><td>0.9</td><td>50.00</td><td>-42.69</td><td>186.55</td></tr><tr><td>99.80</td><td>1.0</td><td>50.00</td><td>-47.52</td><td>190.01</td></tr><tr><td>99.60</td><td>1.3</td><td>50.00</td><td>-66.84</td><td>203.82</td></tr><tr><td>99.55</td><td>1.4</td><td>50.00</td><td>-71.67</td><td>207.28</td></tr><tr><td>99.55</td><td>1.4</td><td>50.00</td><td>-71.67</td><td>207.28</td></tr><tr><td>99.50</td><td>1.5</td><td>50.00</td><td>-76.50</td><td>210.73</td></tr><tr><td>99.40</td><td>1.7</td><td>50.00</td><td>-86.15</td><td>217.64</td></tr><tr><td>99.35</td><td>1.8</td><td>50.00</td><td>-90.98</td><td>221.10</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.11057352 Theoretischer Fußpunkt = 99.349 m</p> <p>Einbindetiefe tg = 3.20 m Profillänge = 9.20 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 174.09 kN/m G',k = 0.00 kN/m Pv,k = 44.00 kN/m Eav,k = 58.24 kN/m (Eah,k = 339.00 kN/m) Bv,k = 40.06 Summe V,k = 236.27 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 100.23 bis 96.71 m) ==&gt; 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 99.35 55.00 s3: Flussskies, -sand Mantelfläche bis 99.35 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 176.00 / 1.40 = 125.71 kN/m Rd = Rb,d + Rs1,d = 990.76 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 208.91 - 0.00 + 68.16 + 52.80 = 329.87 kN/m ==&gt; µ = V,d / Rd = 329.87 / 990.76 = 0.33</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.64	-7.9	-	-	-	103.64	-7.9	-	-	-	103.59	-7.8	-	-	-	103.55	-7.7	-	-	-	103.50	-7.5	-	-	-	103.50	-7.5	-	-	-	103.45	-7.4	-	-	-	102.60	-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	0.72	3.45	3.45	102.45	-4.7	0.72	3.37	6.91	101.60	-2.7	24.36	65.64	65.64	101.55	-2.6	24.36	62.98	69.09	101.55	-2.6	26.73	69.10	69.09	101.50	-2.5	26.73	66.19	72.55	100.60	-0.6	50.00	30.67	134.73	100.55	-0.5	50.00	25.70	138.19	100.55	-0.5	50.00	25.70	138.19	100.50	-0.4	50.00	20.75	141.64	99.90	0.8	50.00	-37.85	183.10	99.85	0.9	50.00	-42.69	186.55	99.85	0.9	50.00	-42.69	186.55	99.80	1.0	50.00	-47.52	190.01	99.60	1.3	50.00	-66.84	203.82	99.55	1.4	50.00	-71.67	207.28	99.55	1.4	50.00	-71.67	207.28	99.50	1.5	50.00	-76.50	210.73	99.40	1.7	50.00	-86.15	217.64	99.35	1.8	50.00	-90.98	221.10
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99.35	1.8	50.00	-90.98	221.10																																																																																																																																																									
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/31																																																																																																																																																											
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 101																																																																																																																																																											
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025																																																																																																																																																											

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

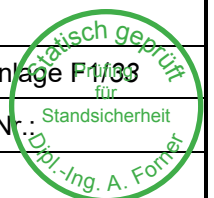


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 6 Datei: 05_BS 6_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 = 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 ==&gt; 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 F1 Schnitt 6R		Seite Anlage F1/32
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1032
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2					Bauwerksnummer (ASB):																																																																																																																																																																																																																																					
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<div>Kraftränder</div> <div>Momente (im Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach rechts 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>107.45</td><td>-28.20</td><td>0.00</td><td>0.00</td><td>0.00</td><td>44.00</td><td>0.00</td></tr></table> <div>Blocklasten nicht umgelagert</div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 10.35 m</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>45.000</td><td>45.000</td></tr></table> <div>Ausnutzungsgrad <math>\mu_e = 279.057 / 280.904 = 0.993</math></div> <div>Bettungslager <math>B_{h,d} = 279.057</math> kN/m</div> <div>Erdwiderstand <math>E_{ph,d} = 280.904</math> kN/m</div> <div>Anker und Steifen</div> <div><math>N_{,d}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td><math>N_{,d}</math></td><td><math>N(g+q+w)_{,k}</math></td><td><math>N(g+w)_{,k}</math></td><td><math>N_{w,k}</math></td><td>EA</td><td>EI</td><td><math>N_{,d}</math></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>-236.50</td><td>-183.07</td><td>-183.07</td><td>-49.22</td><td>3.900E+7</td><td>2.100E+7</td><td>-233.42</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{,d}</math> [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><math>w_{x,d}</math></td><td><math>w_{y,d}</math></td><td><math>N_{,d}</math></td><td><math>Q_{,d}</math></td><td><math>M_{,d}</math></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>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-10.3</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-10.4</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-10.4</td><td>0.0</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-10.4</td><td>0.1</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-10.4</td><td>0.1</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-10.4</td><td>0.1</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-10.4</td><td>0.1</td><td>-237.54</td><td>0.00</td><td>0.00</td></tr></table> <div>Vorverformungen an Ankern / Steifen berücksichtigt</div> <div>Vorverformungen wurden von "Hand" eingegeben.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0081</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td><math>\gamma_{m,k}</math></td><td><math>\gamma_{m',k}</math></td><td><math>\phi_{i,k}</math></td><td><math>c(pas)_{,k}</math></td><td><math>c(akt)_{,k}</math></td><td><math>d(p)/\phi_i</math></td><td><math>d(a)/\phi_i</math></td><td><math>q_c</math></td><td><math>c_{u,k}</math></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>105.55</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>									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	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	102.55	80.00	45.000	45.000	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	-236.50	-183.07	-183.07	-49.22	3.900E+7	2.100E+7	-233.42	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	-10.3	0.0	-237.54	0.00	0.00	-7.47	103.72	-10.3	0.0	-237.54	0.00	0.00	-7.47	103.72	-10.3	0.0	-237.54	0.00	0.00	-6.64	103.72	-10.3	0.0	-237.54	0.00	0.00	-5.81	103.72	-10.3	0.0	-237.54	0.00	0.00	-4.98	103.72	-10.3	0.0	-237.54	0.00	0.00	-4.15	103.72	-10.4	0.0	-237.54	0.00	0.00	-3.32	103.72	-10.4	0.0	-237.54	0.00	0.00	-2.49	103.72	-10.4	0.1	-237.54	0.00	0.00	-1.66	103.72	-10.4	0.1	-237.54	0.00	0.00	-0.83	103.72	-10.4	0.1	-237.54	0.00	0.00	0.00	103.72	-10.4	0.1	-237.54	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0081	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
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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>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 &lt;&gt; 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>98.199</td><td>48.972</td><td>50.205</td><td>0.00</td><td>0.00</td></tr><tr><td>98.199</td><td>97.731</td><td>50.205</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>-169.24</td></tr><tr><td>98.55</td><td>98.20</td><td>-169.24</td><td>-183.05</td></tr><tr><td>98.20</td><td>97.73</td><td>-183.05</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	98.199	48.972	50.205	0.00	0.00	98.199	97.731	50.205	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	-169.24	98.55	98.20	-169.24	-183.05	98.20	97.73	-183.05	-201.52	97.73	96.48	-201.52	-251.01	96.48	80.00	-251.01	-901.29	<div><div>Statisch geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. A. Forner</div></div>	Schnitt: Anlage F1 Schnitt 6R	Seite Anlage F1/34
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<div>Schnittgrößen (Bemessungswerte)</div> 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100.55	-178.3	67.2	-146.0																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/35																																																																																																																																																																																																																																																																																																																																										
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1035																																																																																																																																																																																																																																																																																																																																										
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>99.55-174.580.5-66.7</div><div>98.55-187.831.4-5.7</div><div>98.20-188.80.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div>TiefeNQM A(h)</div><div>[mNHN][kN/m][kN/m][kN·m/m][kN/m]</div><div>108.550.00.00.0</div><div>108.540.00.00.0</div><div>107.550.00.00.0</div><div>107.450.00.00.0</div><div>106.500.00.00.0</div><div>105.550.00.00.0</div><div>105.500.00.00.0</div><div>104.500.00.00.0</div><div>103.720.00.00.0-8.1</div><div>103.640.00.00.0</div><div>103.500.00.00.0</div><div>102.550.00.00.0</div><div>102.500.00.00.0</div><div>102.100.00.00.0</div><div>101.550.00.00.0</div><div>100.550.00.00.0</div><div>99.550.00.00.0</div><div>98.550.00.00.0</div><div>98.200.00.00.0</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,k eph,k</div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div>108.55-21.8--</div><div>108.55-21.8--</div><div>108.55-21.8--</div><div>108.54-21.8--</div><div>108.54-21.8--</div><div>108.49-21.6--</div><div>107.60-19.0--</div><div>107.55-18.8--</div><div>107.55-18.8--</div><div>107.50-18.7--</div><div>107.50-18.7--</div><div>107.45-18.5--</div><div>107.45-18.5--</div><div>107.40-18.4--</div><div>106.55-15.9--</div><div>106.50-15.7--</div><div>106.50-15.7--</div><div>106.45-15.6--</div><div>105.60-13.1--</div><div>105.55-13.0--</div><div>105.55-13.0--</div><div>105.50-12.9--</div><div>105.50-12.9--</div><div>105.45-12.7--</div><div>104.55-10.3--</div><div>104.50-10.1--</div><div>104.50-10.1--</div><div>104.45-10.0--</div><div>103.77-8.3--</div><div>103.72-8.1--</div><div>103.72-8.1--</div><div>103.68-8.0--</div><div>103.68-8.0--</div><div>103.64-7.9--</div><div>103.64-7.9--</div><div>103.59-7.8--</div><div>103.55-7.7--</div><div>103.50-7.6--</div><div>103.50-7.6--</div><div>103.45-7.5--</div></div></div></div>		
Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/36
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1036
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	-5.6	-	-	-
102.55	-5.5	0.00	0.00	0.00
102.55	-5.5	0.00	0.00	19.82
102.50	-5.4	0.00	0.00	23.27
102.50	-5.4	4.30	23.27	23.27
102.45	-5.3	4.30	22.83	26.73
102.15	-4.7	10.08	47.45	47.45
102.10	-4.6	10.08	46.47	50.91
102.10	-4.6	11.04	50.91	50.91
102.05	-4.5	11.04	49.84	54.36
101.60	-3.7	23.21	85.45	85.45
101.55	-3.6	23.21	83.39	88.90
101.55	-3.6	24.75	88.91	88.90
101.50	-3.5	24.75	86.73	92.36
100.60	-2.0	45.00	92.08	154.54
100.55	-2.0	45.00	88.74	157.99
100.55	-2.0	45.00	88.74	157.99
100.50	-1.9	45.00	85.42	161.45
99.60	-0.7	45.00	29.61	223.62
99.55	-0.6	45.00	26.68	227.08
99.55	-0.6	45.00	26.68	227.08
99.50	-0.5	45.00	23.76	230.53
98.60	0.6	45.00	-27.37	292.71
98.55	0.7	45.00	-30.17	296.16
98.55	0.7	45.00	-30.17	296.16
98.50	0.7	45.00	-32.97	299.62
98.25	1.0	45.00	-46.96	316.89
98.20	1.1	45.00	-49.76	320.34

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k}$ : -0.07122804  
Theoretischer Fußpunkt = 98.199 m

Einbindetiefe  $t_g = 4.35$  m  
Profillänge = 10.35 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$   
 $G_{i,k} = 195.85$  kN/m  
 $G'_{i,k} = 0.00$  kN/m  
 $P_{v,k} = 44.00$  kN/m  
 $E_{av,k} = 58.93$  kN/m ( $E_{ah,k} = 336.26$  kN/m)  
 $B_{v,k} = 86.97$   
Summe  $V_{i,k} = 211.81$  kN/m (Druck)

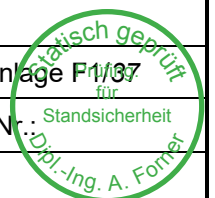
Nachweis der vertikalen Tragfähigkeit  
(Erfahrungswerte nach EA Pfähle)  
Verfahren 2: EAU Bild E 4-3 (rechts)  
Bohrpfahlwand  $D = 0.88$  m  
Verhältniswert (min, max) = 0.00  
Spitzendruck  $q_{c,m} = 7.50$  MN/m<sup>2</sup>  
(gemittelt von 99.08 bis 95.56 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung  
von bis  $q_{s,k}$  [kN/m<sup>2</sup>] Bezeichnung  
102.55 98.20 55.00 s3: Flussskies, -sand  
Mantelfläche bis 98.20 m = 1.000 m<sup>2</sup>/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  
 $R_{i,d} = R_{b,d} + R_{s1,d} = 1035.94$  kN/m

Einwirkungen  
 $V_{i,d} = G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d} = 264.40 - 0.00 + 75.33 + 59.40 = 399.13$  kN/m  
 $\Rightarrow \mu = V_{i,d} / R_{i,d} = 399.13 / 1035.94 = 0.39$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage F1 Schnitt 6R		Seite Anlage F1/37
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr. 107
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 G1 Schnitt 7R</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 7 Datei: 00_BS 7_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 0.50 1.50 1.00 0.29 0.28 0.55 0.00 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 mue = tan(beta) / tan(phi) * 1.25 (BS-P)</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 7.50 m</div> <div>Bettungsmodule 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</div> <div>Ausnutzungsgrad mue = 282.950 / 564.643 = 0.501 Bettungslager Bh,d = 282.950 kN/m Erdwiderstand Eph,d = 564.643 kN/m</div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/1
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 111
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>105.45</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 phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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>105.45</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>102.419</td><td>29.052</td><td>29.465</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>102.117</td><td>29.465</td><td>30.706</td><td>5.00</td><td>5.00</td></tr><tr><td>102.117</td><td>101.411</td><td>30.706</td><td>33.601</td><td>5.00</td><td>5.00</td></tr><tr><td>101.411</td><td>101.058</td><td>33.601</td><td>35.049</td><td>5.00</td><td>5.00</td></tr><tr><td>101.058</td><td>100.403</td><td>35.049</td><td>37.737</td><td>5.00</td><td>5.00</td></tr><tr><td>100.403</td><td>99.949</td><td>37.737</td><td>39.598</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>39.598</td><td>121.419</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>105.45</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> <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>106.34</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>-149.09</td></tr><tr><td>102.42</td><td>102.12</td><td>-149.09</td><td>-161.95</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	102.419	29.052	29.465	5.00	5.00	102.419	102.117	29.465	30.706	5.00	5.00	102.117	101.411	30.706	33.601	5.00	5.00	101.411	101.058	33.601	35.049	5.00	5.00	101.058	100.403	35.049	37.737	5.00	5.00	100.403	99.949	37.737	39.598	5.00	5.00	99.949	80.000	39.598	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	-149.09	102.42	102.12	-149.09	-161.95	<div>Schnitt: Anlage G1 Schnitt 7R</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage G1/2</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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101.058	100.403	35.049	37.737	5.00	5.00																																																																																																																																																																																																																																																																																																												
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105.45	105.00	-26.73	-41.01																																																																																																																																																																																																																																																																																																														
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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>102.12 101.41 -161.95 -191.95</div> <div>101.41 101.06 -191.95 -206.95</div> <div>101.06 100.40 -206.95 -234.80</div> <div>100.40 99.95 -234.80 -254.09</div> <div>99.95 80.00 -254.09 -1101.95</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>106.89 -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 -48.1 -8.0 -18.8</div><div>104.40 -54.9 -9.0 -23.6</div><div>103.41 -68.3 -22.3 -38.0</div><div>102.52 -82.6 -46.4 -67.8</div><div>102.42 -77.9 -33.2 -71.8</div><div>102.12 -66.2 0.8 -76.5</div><div>101.41 -51.4 46.7 -57.0</div><div>101.06 -50.4 52.7 -39.2</div><div>100.40 -59.2 34.6 -8.5</div><div>99.95 -64.4 0.0 0.0</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>106.89 -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 -41.8 -7.0 -16.4</div><div>104.40 -47.8 -7.8 -20.6</div><div>103.41 -59.4 -19.3 -33.0</div><div>102.52 -71.8 -40.2 -58.8</div><div>102.42 -67.8 -28.7 -62.3</div><div>102.12 -57.6 0.7 -66.3</div><div>101.41 -44.8 40.5 -49.4</div><div>101.06 -43.9 45.7 -34.0</div><div>100.40 -51.5 30.0 -7.4</div><div>99.95 -56.1 0.0 0.0</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>106.89 -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 -41.8 -7.0 -16.4</div><div>104.40 -47.8 -7.8 -20.6</div><div>103.41 -59.4 -19.3 -33.0</div><div>102.52 -71.8 -40.2 -58.8</div><div>102.42 -67.8 -28.7 -62.3</div><div>102.12 -57.6 0.7 -66.3</div><div>101.41 -44.8 40.5 -49.4</div><div>101.06 -43.9 45.7 -34.0</div><div>100.40 -51.5 30.0 -7.4</div><div>99.95 -56.1 0.0 0.0</div></div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 113
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>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>106.89</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>102.12</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>101.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.40</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.95</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>-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>106.95</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.29</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.9</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-8.8</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-8.1</td><td>5.25</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-8.1</td><td>5.25</td><td>42.34</td><td>47.55</td></tr><tr><td>105.50</td><td>-8.1</td><td>5.90</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-8.0</td><td>5.90</td><td>47.04</td><td>52.30</td></tr><tr><td>105.45</td><td>-8.0</td><td>5.00</td><td>39.87</td><td>43.43</td></tr><tr><td>105.40</td><td>-7.9</td><td>5.00</td><td>39.44</td><td>46.01</td></tr><tr><td>105.05</td><td>-7.3</td><td>5.00</td><td>36.41</td><td>64.06</td></tr><tr><td>105.00</td><td>-7.2</td><td>5.00</td><td>35.97</td><td>66.64</td></tr><tr><td>105.00</td><td>-7.2</td><td>5.00</td><td>35.97</td><td>66.64</td></tr><tr><td>104.95</td><td>-7.1</td><td>5.00</td><td>35.55</td><td>67.92</td></tr><tr><td>104.45</td><td>-6.3</td><td>5.00</td><td>31.29</td><td>80.71</td></tr><tr><td>104.40</td><td>-6.2</td><td>5.00</td><td>30.87</td><td>81.99</td></tr><tr><td>104.40</td><td>-6.2</td><td>5.00</td><td>30.87</td><td>81.99</td></tr><tr><td>104.36</td><td>-6.1</td><td>5.00</td><td>30.44</td><td>83.27</td></tr><tr><td>103.46</td><td>-4.6</td><td>5.00</td><td>22.92</td><td>106.29</td></tr><tr><td>103.41</td><td>-4.5</td><td>5.00</td><td>22.50</td><td>107.57</td></tr><tr><td>103.41</td><td>-4.5</td><td>5.00</td><td>22.50</td><td>107.57</td></tr><tr><td>103.36</td><td>-4.4</td><td>5.00</td><td>22.09</td><td>108.85</td></tr><tr><td>102.57</td><td>-3.1</td><td>5.00</td><td>15.61</td><td>129.31</td></tr><tr><td>102.52</td><td>-3.0</td><td>5.00</td><td>15.22</td><td>130.59</td></tr><tr><td>102.52</td><td>-3.0</td><td>50.00</td><td>152.16</td><td>235.31</td></tr><tr><td>102.47</td><td>-3.0</td><td>50.00</td><td>148.14</td><td>238.79</td></tr><tr><td>102.47</td><td>-3.0</td><td>50.00</td><td>148.14</td><td>238.79</td></tr><tr><td>102.42</td><td>-2.9</td><td>50.00</td><td>144.14</td><td>242.27</td></tr><tr><td>102.42</td><td>-2.9</td><td>50.00</td><td>144.14</td><td>242.27</td></tr><tr><td>102.37</td><td>-2.8</td><td>50.00</td><td>140.15</td><td>245.75</td></tr><tr><td>102.17</td><td>-2.5</td><td>50.00</td><td>124.33</td><td>259.68</td></tr><tr><td>102.12</td><td>-2.4</td><td>50.00</td><td>120.41</td><td>263.16</td></tr></tbody></table>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.89	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	102.12	0.0	0.0	0.0	101.41	0.0	0.0	0.0	101.06	0.0	0.0	0.0	100.40	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-11.5	-	-	-	107.40	-11.4	-	-	-	106.95	-10.6	-	-	-	106.89	-10.5	-	-	-	106.89	-10.5	-	-	-	106.84	-10.4	-	-	-	106.50	-9.8	-	-	-	106.45	-9.7	-	-	-	106.45	-9.7	-	-	-	106.39	-9.6	-	-	-	106.39	-9.6	-	-	-	106.34	-9.5	-	-	-	106.34	-9.5	-	-	-	106.29	-9.4	-	-	-	106.05	-9.0	-	-	-	106.00	-8.9	0.00	0.00	0.00	106.00	-8.9	0.00	0.00	0.00	105.95	-8.8	0.00	0.00	4.75	105.55	-8.1	5.25	42.80	42.79	105.50	-8.1	5.25	42.34	47.55	105.50	-8.1	5.90	47.55	47.55	105.45	-8.0	5.90	47.04	52.30	105.45	-8.0	5.00	39.87	43.43	105.40	-7.9	5.00	39.44	46.01	105.05	-7.3	5.00	36.41	64.06	105.00	-7.2	5.00	35.97	66.64	105.00	-7.2	5.00	35.97	66.64	104.95	-7.1	5.00	35.55	67.92	104.45	-6.3	5.00	31.29	80.71	104.40	-6.2	5.00	30.87	81.99	104.40	-6.2	5.00	30.87	81.99	104.36	-6.1	5.00	30.44	83.27	103.46	-4.6	5.00	22.92	106.29	103.41	-4.5	5.00	22.50	107.57	103.41	-4.5	5.00	22.50	107.57	103.36	-4.4	5.00	22.09	108.85	102.57	-3.1	5.00	15.61	129.31	102.52	-3.0	5.00	15.22	130.59	102.52	-3.0	50.00	152.16	235.31	102.47	-3.0	50.00	148.14	238.79	102.47	-3.0	50.00	148.14	238.79	102.42	-2.9	50.00	144.14	242.27	102.42	-2.9	50.00	144.14	242.27	102.37	-2.8	50.00	140.15	245.75	102.17	-2.5	50.00	124.33	259.68	102.12	-2.4	50.00	120.41	263.16
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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

102.12	-2.4	50.00	120.41	263.16
102.07	-2.3	50.00	116.51	266.64
101.46	-1.4	50.00	70.72	308.43
101.41	-1.3	50.00	66.98	311.91
101.41	-1.3	50.00	66.98	311.91
101.36	-1.3	50.00	63.26	315.39
101.11	-0.9	50.00	44.78	332.80
101.06	-0.8	50.00	41.11	336.29
101.06	-0.8	50.00	41.11	336.29
101.01	-0.7	50.00	37.44	339.77
100.45	0.1	50.00	-2.51	378.07
100.40	0.1	50.00	-6.12	381.55
100.40	0.1	50.00	-6.12	381.55
100.35	0.2	50.00	-9.73	385.04
100.00	0.7	50.00	-34.98	409.41
99.95	0.8	50.00	-38.58	412.89

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.08196203$   
 Theoretischer Fußpunkt = 99.949 m

Einbindetiefe  $t_g = 6.05$  m  
 Profillänge = 7.50 m

Nachweis Summe V  
 Nachweis des mobilisierten Erdwiderstands  
 Bedingung:  $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$   
 $G_{v,k} = 141.92$  kN/m  
 $G'_{v,k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 34.71$  kN/m ( $E_{ah,k} = 207.99$  kN/m)  
 $B_{v,k} = 86.53$   
 Summe  $V_{v,k} = 90.10$  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/m<sup>2</sup>  
 (gemittelt von 100.83 bis 97.31 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma_{(q_{b,k})} = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung
 

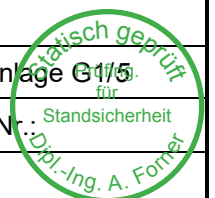
von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	105.45	0.00	S1: Auffüllungen
105.45	102.52	0.00	S2: Auelehm
102.52	99.95	55.00	s3: Flussskies, -sand

 Mantelfläche bis 99.95 m = 1.000 m<sup>2</sup>/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})} = 1.000 \cdot 141.35 / 1.40 = 100.96$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 966.01$  kN/m

Einwirkungen  
 $V_{d} = G_{d} - G'_{d} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 39.92 + 0.00 = 210.23$  kN/m  
 $\Rightarrow \mu = V_{d} / R_{d} = 210.23 / 966.01 = 0.22$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage G1 Schnitt 7R	Seite Anlage G1/5
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 1175
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 7 Datei: 01_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 = 7.50 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 G1 Schnitt 7R		Seite Anlage G1/6
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 <math>\mu_e = 338.679 / 529.849 = 0.639</math> Bettungslager <math>B_{h,d} = 338.679 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 529.849 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{a,k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.45</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></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>105.45</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></tbody></table> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>)</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>9.870</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>102.419</td><td>32.618</td><td>33.032</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>102.218</td><td>33.032</td><td>33.859</td><td>5.00</td><td>5.00</td></tr><tr><td>102.218</td><td>101.411</td><td>33.859</td><td>37.168</td><td>5.00</td><td>5.00</td></tr><tr><td>101.411</td><td>101.058</td><td>37.168</td><td>38.615</td><td>5.00</td><td>5.00</td></tr><tr><td>101.058</td><td>100.403</td><td>38.615</td><td>41.303</td><td>5.00</td><td>5.00</td></tr><tr><td>100.403</td><td>99.949</td><td>41.303</td><td>43.164</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>43.164</td><td>124.986</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> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></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>105.45</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></tbody></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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	102.419	32.618	33.032	5.00	5.00	102.419	102.218	33.032	33.859	5.00	5.00	102.218	101.411	33.859	37.168	5.00	5.00	101.411	101.058	37.168	38.615	5.00	5.00	101.058	100.403	38.615	41.303	5.00	5.00	100.403	99.949	41.303	43.164	5.00	5.00	99.949	80.000	43.164	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	106.00	Schicht	UK	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	
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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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	102.419	32.618	33.032	5.00	5.00																																																																																																																																																																																																																																																																																						
102.419	102.218	33.032	33.859	5.00	5.00																																																																																																																																																																																																																																																																																						
102.218	101.411	33.859	37.168	5.00	5.00																																																																																																																																																																																																																																																																																						
101.411	101.058	37.168	38.615	5.00	5.00																																																																																																																																																																																																																																																																																						
101.058	100.403	38.615	41.303	5.00	5.00																																																																																																																																																																																																																																																																																						
100.403	99.949	41.303	43.164	5.00	5.00																																																																																																																																																																																																																																																																																						
99.949	80.000	43.164	124.986	5.00	5.00																																																																																																																																																																																																																																																																																						
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0.00	0.00	107.45	106.00																																																																																																																																																																																																																																																																																								
Schicht	UK	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$																																																																																																																																																																																																																																																																																					
[-]	[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																																																																																																																																																																																																																																																																																					
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Statisch geprüft

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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>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>-149.09</td></tr><tr><td>102.42</td><td>102.22</td><td>-149.09</td><td>-157.66</td></tr><tr><td>102.22</td><td>101.41</td><td>-157.66</td><td>-191.95</td></tr><tr><td>101.41</td><td>101.06</td><td>-191.95</td><td>-206.95</td></tr><tr><td>101.06</td><td>100.40</td><td>-206.95</td><td>-234.80</td></tr><tr><td>100.40</td><td>99.95</td><td>-234.80</td><td>-254.09</td></tr><tr><td>99.95</td><td>80.00</td><td>-254.09</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>-47.6</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>-25.9</td><td>-29.3</td></tr><tr><td>105.26</td><td>-49.0</td><td>-23.6</td><td>-32.8</td></tr><tr><td>105.00</td><td>-50.8</td><td>-19.9</td><td>-38.4</td></tr><tr><td>104.40</td><td>-55.7</td><td>-17.1</td><td>-49.1</td></tr><tr><td>103.41</td><td>-66.6</td><td>-27.0</td><td>-69.5</td></tr><tr><td>102.52</td><td>-79.5</td><td>-51.0</td><td>-103.3</td></tr><tr><td>102.42</td><td>-73.1</td><td>-33.8</td><td>-107.5</td></tr><tr><td>102.22</td><td>-61.9</td><td>-3.4</td><td>-111.2</td></tr><tr><td>101.41</td><td>-36.3</td><td>67.8</td><td>-79.9</td></tr><tr><td>101.06</td><td>-34.5</td><td>74.3</td><td>-54.4</td></tr><tr><td>100.40</td><td>-43.6</td><td>47.6</td><td>-11.7</td></tr><tr><td>99.95</td><td>-44.4</td><td>0.0</td><td>0.0</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></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>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.89</td><td>-12.1</td><td>-3.9</td><td>-0.9</td></tr><tr><td>106.45</td><td>-22.7</td><td>-10.5</td><td>-3.9</td></tr><tr><td>106.34</td><td>-25.8</td><td>-13.0</td><td>-5.2</td></tr><tr><td>106.00</td><td>-35.2</td><td>-21.2</td><td>-10.9</td></tr><tr><td>105.93</td><td>-37.2</td><td>-23.2</td><td>-12.6</td></tr><tr><td>105.50</td><td>-41.4</td><td>-24.0</td><td>-23.2</td></tr><tr><td>105.45</td><td>-41.5</td><td>-23.0</td><td>-24.4</td></tr><tr><td>105.40</td><td>-41.8</td><td>-22.5</td><td>-25.5</td></tr><tr><td>105.26</td><td>-42.7</td><td>-20.6</td><td>-28.5</td></tr><tr><td>105.00</td><td>-44.2</td><td>-17.4</td><td>-33.4</td></tr><tr><td>104.40</td><td>-48.5</td><td>-14.9</td><td>-42.8</td></tr><tr><td>103.41</td><td>-58.0</td><td>-23.4</td><td>-60.5</td></tr><tr><td>102.52</td><td>-69.2</td><td>-44.1</td><td>-89.7</td></tr><tr><td>102.42</td><td>-63.6</td><td>-29.2</td><td>-93.4</td></tr><tr><td>102.22</td><td>-53.9</td><td>-2.8</td><td>-96.5</td></tr><tr><td>101.41</td><td>-31.6</td><td>58.8</td><td>-69.3</td></tr><tr><td>101.06</td><td>-30.1</td><td>64.4</td><td>-47.2</td></tr><tr><td>100.40</td><td>-38.0</td><td>41.3</td><td>-10.1</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	-149.09	102.42	102.22	-149.09	-157.66	102.22	101.41	-157.66	-191.95	101.41	101.06	-191.95	-206.95	101.06	100.40	-206.95	-234.80	100.40	99.95	-234.80	-254.09	99.95	80.00	-254.09	-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	-47.6	-27.5	-26.7	105.45	-47.6	-26.4	-28.0	105.40	-48.0	-25.9	-29.3	105.26	-49.0	-23.6	-32.8	105.00	-50.8	-19.9	-38.4	104.40	-55.7	-17.1	-49.1	103.41	-66.6	-27.0	-69.5	102.52	-79.5	-51.0	-103.3	102.42	-73.1	-33.8	-107.5	102.22	-61.9	-3.4	-111.2	101.41	-36.3	67.8	-79.9	101.06	-34.5	74.3	-54.4	100.40	-43.6	47.6	-11.7	99.95	-44.4	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	-42.7	-20.6	-28.5	105.00	-44.2	-17.4	-33.4	104.40	-48.5	-14.9	-42.8	103.41	-58.0	-23.4	-60.5	102.52	-69.2	-44.1	-89.7	102.42	-63.6	-29.2	-93.4	102.22	-53.9	-2.8	-96.5	101.41	-31.6	58.8	-69.3	101.06	-30.1	64.4	-47.2	100.40	-38.0	41.3	-10.1
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<div><div>99.95-38.60.00.0</div><div>Schnittgrößen 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([g+q],k) berechnet mit EI = 5.887E+5 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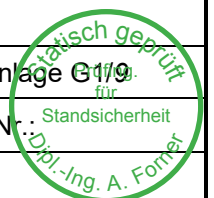
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/9
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 179
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

für

Standicherheit

Dipl.-Ing. A. Forster



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																
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td><td>378.07</td><td></td><td></td></tr><tr><td>100.40</td><td>0.4</td><td>50.00</td><td>-21.96</td><td>381.55</td><td></td><td></td></tr><tr><td>100.40</td><td>0.4</td><td>50.00</td><td>-21.96</td><td>381.55</td><td></td><td></td></tr><tr><td>100.35</td><td>0.5</td><td>50.00</td><td>-26.81</td><td>385.04</td><td></td><td></td></tr><tr><td>100.00</td><td>1.2</td><td>50.00</td><td>-60.69</td><td>409.41</td><td></td><td></td></tr><tr><td>99.95</td><td>1.3</td><td>50.00</td><td>-65.53</td><td>412.89</td><td></td><td></td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10998186 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p>							106.28	-12.6	-	-	-			106.05	-12.0	-	-	-			106.00	-11.9	0.00	0.00	0.00			106.00	-11.9	0.00	0.00	0.00			105.93	-11.7	0.00	0.00	7.12			105.93	-11.7	0.61	7.12	7.12			105.88	-11.6	0.61	7.05	11.61			105.55	-10.8	3.98	43.06	43.06			105.50	-10.7	3.98	42.61	47.55			105.50	-10.7	4.44	47.55	47.55			105.45	-10.6	4.44	47.02	52.30			105.45	-10.6	4.10	43.44	43.43			105.40	-10.5	4.10	42.97	45.87			105.40	-10.5	4.38	45.87	45.87			105.36	-10.4	4.38	45.37	48.30			105.31	-10.2	4.95	50.74	50.73			105.26	-10.1	4.95	50.17	53.17			105.26	-10.1	5.00	50.63	53.17			105.21	-10.0	5.00	50.01	55.86			105.05	-9.6	5.00	48.13	63.95			105.00	-9.5	5.00	47.50	66.64			105.00	-9.5	5.00	47.50	66.64			104.95	-9.4	5.00	46.91	67.92			104.45	-8.2	5.00	41.02	80.71			104.40	-8.1	5.00	40.44	81.99			104.40	-8.1	5.00	40.44	81.99			104.36	-8.0	5.00	39.86	83.27			103.46	-5.9	5.00	29.53	106.29			103.41	-5.8	5.00	28.97	107.57			103.41	-5.8	5.00	28.97	107.57			103.36	-5.7	5.00	28.41	108.85			102.57	-3.9	5.00	19.62	129.31			102.52	-3.8	5.00	19.08	130.59			102.52	-3.8	50.00	190.85	235.31			102.47	-3.7	50.00	185.42	238.79			102.47	-3.7	50.00	185.42	238.79			102.42	-3.6	50.00	180.02	242.27			102.42	-3.6	50.00	180.02	242.27			102.37	-3.5	50.00	174.64	245.75			102.27	-3.3	50.00	163.93	252.72			102.22	-3.2	50.00	158.61	256.20			102.22	-3.2	50.00	158.61	256.20			102.17	-3.1	50.00	153.31	259.68			101.46	-1.6	50.00	81.18	308.43			101.41	-1.5	50.00	76.16	311.91			101.41	-1.5	50.00	76.16	311.91			101.36	-1.4	50.00	71.16	315.39			101.11	-0.9	50.00	46.34	332.80			101.06	-0.8	50.00	41.41	336.29			101.06	-0.8	50.00	41.41	336.29			101.01	-0.7	50.00	36.50	339.77			100.45	0.3	50.00	-17.12	378.07			100.40	0.4	50.00	-21.96	381.55			100.40	0.4	50.00	-21.96	381.55			100.35	0.5	50.00	-26.81	385.04			100.00	1.2	50.00	-60.69	409.41			99.95	1.3	50.00	-65.53	412.89		
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105.31	-10.2	4.95	50.74	50.73																																																																																																																																																																																																																																																																																																																																																																																																																	
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103.46	-5.9	5.00	29.53	106.29																																																																																																																																																																																																																																																																																																																																																																																																																	
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102.57	-3.9	5.00	19.62	129.31																																																																																																																																																																																																																																																																																																																																																																																																																	
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102.47	-3.7	50.00	185.42	238.79																																																																																																																																																																																																																																																																																																																																																																																																																	
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102.17	-3.1	50.00	153.31	259.68																																																																																																																																																																																																																																																																																																																																																																																																																	
101.46	-1.6	50.00	81.18	308.43																																																																																																																																																																																																																																																																																																																																																																																																																	
101.41	-1.5	50.00	76.16	311.91																																																																																																																																																																																																																																																																																																																																																																																																																	
101.41	-1.5	50.00	76.16	311.91																																																																																																																																																																																																																																																																																																																																																																																																																	
101.36	-1.4	50.00	71.16	315.39																																																																																																																																																																																																																																																																																																																																																																																																																	
101.11	-0.9	50.00	46.34	332.80																																																																																																																																																																																																																																																																																																																																																																																																																	
101.06	-0.8	50.00	41.41	336.29																																																																																																																																																																																																																																																																																																																																																																																																																	
101.06	-0.8	50.00	41.41	336.29																																																																																																																																																																																																																																																																																																																																																																																																																	
101.01	-0.7	50.00	36.50	339.77																																																																																																																																																																																																																																																																																																																																																																																																																	
100.45	0.3	50.00	-17.12	378.07																																																																																																																																																																																																																																																																																																																																																																																																																	
100.40	0.4	50.00	-21.96	381.55																																																																																																																																																																																																																																																																																																																																																																																																																	
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100.35	0.5	50.00	-26.81	385.04																																																																																																																																																																																																																																																																																																																																																																																																																	
100.00	1.2	50.00	-60.69	409.41																																																																																																																																																																																																																																																																																																																																																																																																																	
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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</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{s,k} = 141.92 \text{ kN/m}</math></p> <p><math>G'_{s,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 40.80 \text{ kN/m}</math> (<math>E_{ah,k} = 244.50 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 102.77</math></p> <p>Summe <math>V_{s,k} = 79.96 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></td><td>Bezeichnung</td></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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 141.35 / 1.40 = 100.96 \text{ kN/m}</math></p> <p><math>R_d = R_{b,d} + R_{s1,d} = 966.01 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 46.92 + 0.00 = 217.23 \text{ kN/m}</math></p> <p><math>\Rightarrow \mu = V_{s,d} / R_d = 217.23 / 966.01 = 0.22</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.45	0.00	S1: Auffüllungen	105.45	102.52	0.00	S2: Auelehm	102.52	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.45	0.00	S1: Auffüllungen															
105.45	102.52	0.00	S2: Auelehm															
102.52	99.95	55.00	s3: Flussskies, -sand															
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1111																
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>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: 02_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</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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.50 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>102.52</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 <math>\mu_e = 231.537 / 237.332 = 0.976</math> Bettungslager <math>B_{h,d} = 231.537</math> kN/m Erdwiderstand <math>E_{ph,d} = 237.332</math> 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]	102.55	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																																					
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[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																										
102.55	102.52	5.000	5.000																																										
102.52	80.00	50.000	50.000																																										
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/12																																											
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 01112																																											
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<sub>d</sub>' = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d</sub>'</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>-97.31</td><td>-84.27</td><td>-84.27</td><td>-8.17</td><td>6.900E+4</td><td>2.100E+7</td><td>-107.44</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-12.2</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.3</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.3</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.6</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.0</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.2</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.4</td><td>0.0</td><td>-97.31</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-97.31</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 7\Rechtes Ufer\00_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>-0.0106</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>a,k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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 · k<sub>0</sub></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit φ<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>26.395</td><td>26.395</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></tr><tr><td>106.886</td><td>106.450</td><td>26.395</td><td>26.395</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></tr><tr><td>106.335</td><td>105.500</td><td>26.395</td><td>26.395</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></tr><tr><td>105.450</td><td>105.400</td><td>26.395</td><td>26.395</td><td>0.50</td></tr><tr><td>105.400</td><td>105.000</td><td>26.395</td><td>26.395</td><td>1.00</td></tr><tr><td>105.000</td><td>104.400</td><td>21.996</td><td>21.996</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>21.996</td><td>21.996</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>21.996</td><td>21.996</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d</sub> '	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-97.31	-84.27	-84.27	-8.17	6.900E+4	2.100E+7	-107.44	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-12.2	0.0	-97.31	0.00	0.00	-0.90	106.95	-12.3	0.0	-97.31	0.00	0.00	-0.90	106.95	-12.3	0.0	-97.31	0.00	0.00	-0.80	106.95	-12.5	0.0	-97.31	0.00	0.00	-0.70	106.95	-12.6	0.0	-97.31	0.00	0.00	-0.60	106.95	-12.7	0.0	-97.31	0.00	0.00	-0.50	106.95	-12.9	0.0	-97.31	0.00	0.00	-0.40	106.95	-13.0	0.0	-97.31	0.00	0.00	-0.30	106.95	-13.2	0.0	-97.31	0.00	0.00	-0.20	106.95	-13.3	0.0	-97.31	0.00	0.00	-0.10	106.95	-13.4	0.0	-97.31	0.00	0.00	0.00	106.95	-13.6	0.0	-97.31	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0106	Schicht	UK	γ <sub>m,k</sub>	γ <sub>a,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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]	107.450	106.950	26.395	26.395	0.00	106.950	106.886	26.395	26.395	0.00	106.886	106.450	26.395	26.395	0.00	106.450	106.335	26.395	26.395	0.00	106.335	105.500	26.395	26.395	0.00	105.500	105.450	26.395	26.395	0.00	105.450	105.400	26.395	26.395	0.50	105.400	105.000	26.395	26.395	1.00	105.000	104.400	21.996	21.996	5.00	104.400	104.300	21.996	21.996	5.00	104.300	103.400	21.996	21.996	5.00	<div>Schnitt: Anlage G1 Schnitt 7R</div> <div>Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage G1/13</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d</sub> '																																																																																																																																																																																																																																																																																																				
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<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>102.419</td><td>29.052</td><td>29.464</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>101.816</td><td>29.464</td><td>31.940</td><td>5.00</td><td>5.00</td></tr><tr><td>101.816</td><td>101.413</td><td>31.940</td><td>33.590</td><td>5.00</td><td>5.00</td></tr><tr><td>101.413</td><td>100.407</td><td>33.590</td><td>37.717</td><td>5.00</td><td>5.00</td></tr><tr><td>100.407</td><td>99.401</td><td>37.717</td><td>41.843</td><td>5.00</td><td>5.00</td></tr><tr><td>99.401</td><td>98.949</td><td>41.843</td><td>43.699</td><td>5.00</td><td>5.00</td></tr><tr><td>98.949</td><td>80.000</td><td>43.699</td><td>121.419</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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><td></td><td></td></tr><tr><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td></td><td></td></tr><tr><td>0.00</td><td>0.00</td><td>107.45</td><td>102.55</td><td></td><td></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>-5.22</td></tr><tr><td>102.42</td><td>101.82</td><td>-5.22</td><td>-30.87</td></tr><tr><td>101.82</td><td>101.41</td><td>-30.87</td><td>-47.97</td></tr><tr><td>101.41</td><td>100.41</td><td>-47.97</td><td>-90.73</td></tr><tr><td>100.41</td><td>99.40</td><td>-90.73</td><td>-133.49</td></tr><tr><td>99.40</td><td>98.95</td><td>-133.49</td><td>-152.73</td></tr><tr><td>98.95</td><td>80.00</td><td>-152.73</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>-97.3</td></tr><tr><td>106.95</td><td>-16.4</td><td>82.1</td><td>-3.8</td><td></td></tr><tr><td>106.89</td><td>-18.5</td><td>80.2</td><td>1.4</td><td></td></tr><tr><td>106.45</td><td>-32.8</td><td>67.0</td><td>33.5</td><td></td></tr><tr><td>106.34</td><td>-36.6</td><td>63.5</td><td>41.0</td><td></td></tr><tr><td>105.50</td><td>-64.0</td><td>38.1</td><td>83.4</td><td></td></tr><tr><td>105.45</td><td>-65.6</td><td>36.6</td><td>85.3</td><td></td></tr><tr><td>105.40</td><td>-67.1</td><td>35.0</td><td>87.1</td><td></td></tr><tr><td>105.00</td><td>-79.1</td><td>21.4</td><td>98.4</td><td></td></tr><tr><td>104.40</td><td>-96.2</td><td>2.7</td><td>105.6</td><td></td></tr><tr><td>104.30</td><td>-99.1</td><td>-0.5</td><td>105.8</td><td></td></tr><tr><td>103.40</td><td>-124.8</td><td>-28.6</td><td>92.7</td><td></td></tr><tr><td>102.55</td><td>-149.0</td><td>-55.2</td><td>57.0</td><td></td></tr><tr><td>102.52</td><td>-149.9</td><td>-56.8</td><td>55.3</td><td></td></tr><tr><td>102.42</td><td>-151.9</td><td>-60.4</td><td>49.4</td><td></td></tr><tr><td>101.82</td><td>-157.5</td><td>-66.3</td><td>9.9</td><td></td></tr><tr><td>101.41</td><td>-154.9</td><td>-55.2</td><td>-15.0</td><td></td></tr><tr><td>100.41</td><td>-129.9</td><td>16.1</td><td>-37.5</td><td></td></tr><tr><td>99.40</td><td>-126.6</td><td>27.7</td><td>-7.0</td><td></td></tr><tr><td>98.95</td><td>-134.4</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	102.419	29.052	29.464	5.00	5.00	102.419	101.816	29.464	31.940	5.00	5.00	101.816	101.413	31.940	33.590	5.00	5.00	101.413	100.407	33.590	37.717	5.00	5.00	100.407	99.401	37.717	41.843	5.00	5.00	99.401	98.949	41.843	43.699	5.00	5.00	98.949	80.000	43.699	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	-5.22	102.42	101.82	-5.22	-30.87	101.82	101.41	-30.87	-47.97	101.41	100.41	-47.97	-90.73	100.41	99.40	-90.73	-133.49	99.40	98.95	-133.49	-152.73	98.95	80.00	-152.73	-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	-97.3	106.95	-16.4	82.1	-3.8		106.89	-18.5	80.2	1.4		106.45	-32.8	67.0	33.5		106.34	-36.6	63.5	41.0		105.50	-64.0	38.1	83.4		105.45	-65.6	36.6	85.3		105.40	-67.1	35.0	87.1		105.00	-79.1	21.4	98.4		104.40	-96.2	2.7	105.6		104.30	-99.1	-0.5	105.8		103.40	-124.8	-28.6	92.7		102.55	-149.0	-55.2	57.0		102.52	-149.9	-56.8	55.3		102.42	-151.9	-60.4	49.4		101.82	-157.5	-66.3	9.9		101.41	-154.9	-55.2	-15.0		100.41	-129.9	16.1	-37.5		99.40	-126.6	27.7	-7.0		98.95	-134.4	0.0	0.0	
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner





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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																											
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<div><div>99.400.00.00.0</div><div>98.950.00.00.0</div><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>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.39</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.34</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.29</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.0</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>105.45</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</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>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>104.45</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</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>104.35</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-8.4</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>103.45</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.52</td><td>-5.5</td><td>0.00</td><td>0.00</td><td>12.51</td></tr><tr><td>102.52</td><td>-5.5</td><td>0.28</td><td>1.53</td><td>1.53</td></tr><tr><td>102.47</td><td>-5.5</td><td>0.28</td><td>1.51</td><td>5.01</td></tr><tr><td>102.47</td><td>-5.5</td><td>0.92</td><td>5.01</td><td>5.01</td></tr><tr><td>102.42</td><td>-5.4</td><td>0.92</td><td>4.93</td><td>8.48</td></tr><tr><td>102.42</td><td>-5.4</td><td>1.58</td><td>8.48</td><td>8.48</td></tr><tr><td>102.37</td><td>-5.3</td><td>1.58</td><td>8.34</td><td>11.95</td></tr><tr><td>101.87</td><td>-4.4</td><td>10.54</td><td>46.69</td><td>46.69</td></tr><tr><td>101.82</td><td>-4.3</td><td>10.54</td><td>45.78</td><td>50.17</td></tr><tr><td>101.82</td><td>-4.3</td><td>11.56</td><td>50.17</td><td>50.17</td></tr><tr><td>101.77</td><td>-4.3</td><td>11.56</td><td>49.16</td><td>53.64</td></tr><tr><td>101.46</td><td>-3.7</td><td>19.96</td><td>74.49</td><td>74.49</td></tr><tr><td>101.41</td><td>-3.6</td><td>19.96</td><td>72.75</td><td>77.96</td></tr><tr><td>101.41</td><td>-3.6</td><td>21.39</td><td>77.96</td><td>77.96</td></tr><tr><td>101.36</td><td>-3.6</td><td>21.39</td><td>76.10</td><td>81.43</td></tr><tr><td>100.46</td><td>-2.0</td><td>50.00</td><td>100.70</td><td>143.96</td></tr><tr><td>100.41</td><td>-1.9</td><td>50.00</td><td>96.48</td><td>147.44</td></tr><tr><td>100.41</td><td>-1.9</td><td>50.00</td><td>96.48</td><td>147.44</td></tr><tr><td>100.36</td><td>-1.8</td><td>50.00</td><td>92.26</td><td>150.91</td></tr><tr><td>99.45</td><td>-0.3</td><td>50.00</td><td>17.26</td><td>213.44</td></tr><tr><td>99.40</td><td>-0.3</td><td>50.00</td><td>13.13</td><td>216.92</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-12.4	-	-	-	107.40	-12.4	-	-	-	107.00	-11.9	-	-	-	106.95	-11.8	-	-	-	106.95	-11.8	-	-	-	106.89	-11.7	-	-	-	106.89	-11.7	-	-	-	106.84	-11.7	-	-	-	106.50	-11.3	-	-	-	106.45	-11.2	-	-	-	106.45	-11.2	-	-	-	106.39	-11.1	-	-	-	106.39	-11.1	-	-	-	106.34	-11.1	-	-	-	106.34	-11.1	-	-	-	106.29	-11.0	-	-	-	105.55	-10.1	-	-	-	105.50	-10.0	-	-	-	105.50	-10.0	-	-	-	105.45	-10.0	-	-	-	105.45	-10.0	-	-	-	105.40	-9.9	-	-	-	105.40	-9.9	-	-	-	105.35	-9.8	-	-	-	105.05	-9.4	-	-	-	105.00	-9.4	-	-	-	105.00	-9.4	-	-	-	104.95	-9.3	-	-	-	104.45	-8.6	-	-	-	104.40	-8.5	-	-	-	104.40	-8.5	-	-	-	104.35	-8.5	-	-	-	104.35	-8.5	-	-	-	104.30	-8.4	-	-	-	104.30	-8.4	-	-	-	104.25	-8.3	-	-	-	103.45	-7.1	-	-	-	103.40	-7.0	-	-	-	103.40	-7.0	-	-	-	103.35	-6.9	-	-	-	102.60	-5.7	-	-	-	102.55	-5.6	0.00	0.00	0.00	102.55	-5.6	0.00	0.00	11.73	102.52	-5.5	0.00	0.00	12.51	102.52	-5.5	0.28	1.53	1.53	102.47	-5.5	0.28	1.51	5.01	102.47	-5.5	0.92	5.01	5.01	102.42	-5.4	0.92	4.93	8.48	102.42	-5.4	1.58	8.48	8.48	102.37	-5.3	1.58	8.34	11.95	101.87	-4.4	10.54	46.69	46.69	101.82	-4.3	10.54	45.78	50.17	101.82	-4.3	11.56	50.17	50.17	101.77	-4.3	11.56	49.16	53.64	101.46	-3.7	19.96	74.49	74.49	101.41	-3.6	19.96	72.75	77.96	101.41	-3.6	21.39	77.96	77.96	101.36	-3.6	21.39	76.10	81.43	100.46	-2.0	50.00	100.70	143.96	100.41	-1.9	50.00	96.48	147.44	100.41	-1.9	50.00	96.48	147.44	100.36	-1.8	50.00	92.26	150.91	99.45	-0.3	50.00	17.26	213.44	99.40	-0.3	50.00	13.13	216.92
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100.36	-1.8	50.00	92.26	150.91																																																																																																																																																																																																																																																																																																																																											
99.45	-0.3	50.00	17.26	213.44																																																																																																																																																																																																																																																																																																																																											
99.40	-0.3	50.00	13.13	216.92																																																																																																																																																																																																																																																																																																																																											
Schnitt:		Anlage G1 Schnitt 7R		Seite Anlage G1/16																																																																																																																																																																																																																																																																																																																																											
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 116																																																																																																																																																																																																																																																																																																																																											
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>99.40-0.350.0013.13216.92</div><div>99.35-0.250.008.99220.39</div><div>99.000.450.00-19.92244.71</div><div>98.950.550.00-24.05248.18</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.09408373</div><div>Theoretischer Fußpunkt = 98.949 m</div><div>Einbindetiefe tg = 3.60 m</div><div>Profillänge = 8.50 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k</div><div>G,k = 160.84 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 42.99 kN/m (Eah,k = 249.64 kN/m)</div><div>Bv,k = 79.66</div><div>Summe V,k = 124.18 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 99.83 bis 96.31 m) ==&gt; 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>102.52</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.52</td><td>98.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.95 m = 1.000 m²/m/m ==&gt; Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 196.35 / 1.40 = 140.25 kN/m</div><div>Rd = Rb,d + Rs1,d = 1005.30 kN/m</div><div>Einwirkungen</div><div>Vd = Gd - G',k + Eav,d + Pv,d = 193.01 - 0.00 + 49.44 + 0.00 = 242.45 kN/m</div><div>==&gt; mu = Vd / Rd = 242.45 / 1005.30 = 0.24</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.52	0.00	S2: Auelehm	102.52	98.95	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.52	0.00	S2: Auelehm											
102.52	98.95	55.00	s3: Flussskies, -sand											
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/17												
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 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

4

LF 2.2 (BS-T, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024  
Bohrpfahlwand

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Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 7  
Datei: 03\_BS 7\_LF2.2 (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 = 107.45 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) = 105.00 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

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)

Lasten (zweiseitig begrenzt)

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	1.50	107.45	107.45	107.45	105.93	105.26	nein

Steuerparameter = 0.50

Erddruckumlagerung: EAB 2012 Bild EB 70-1.b

Art des Fußlagers:  
Profillänge automatisch und Fuß gebettet  
Profillänge = 8.60 m

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

Schnitt:	Anlage G1    Schnitt 7R	Seite Anlage G1/18
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>Ausnutzungsgrad <math>\mu_{ue} = 258.648 / 259.166 = 0.998</math> Bettungslager <math>B_{h,d} = 258.648 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 259.166 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_{d'}</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-121.22</td><td>-105.05</td><td>-105.05</td><td>-8.32</td><td>6.900E+4</td><td>2.100E+7</td><td>-133.93</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_{d'}</math></th><th><math>Q_{d'}</math></th><th><math>M_{d'}</math></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>-12.2</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.4</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.4</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.5</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.2</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.4</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.8</td><td>0.0</td><td>-121.22</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-13.9</td><td>0.1</td><td>-121.22</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 7\Rechtes Ufer\00_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>-0.0106</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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	-121.22	-105.05	-105.05	-8.32	6.900E+4	2.100E+7	-133.93	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	-12.2	0.0	-121.22	0.00	0.00	-0.90	106.95	-12.4	0.0	-121.22	0.00	0.00	-0.90	106.95	-12.4	0.0	-121.22	0.00	0.00	-0.80	106.95	-12.5	0.0	-121.22	0.00	0.00	-0.70	106.95	-12.7	0.0	-121.22	0.00	0.00	-0.60	106.95	-12.9	0.0	-121.22	0.00	0.00	-0.50	106.95	-13.1	0.0	-121.22	0.00	0.00	-0.40	106.95	-13.2	0.0	-121.22	0.00	0.00	-0.30	106.95	-13.4	0.0	-121.22	0.00	0.00	-0.20	106.95	-13.6	0.0	-121.22	0.00	0.00	-0.10	106.95	-13.8	0.0	-121.22	0.00	0.00	0.00	106.95	-13.9	0.1	-121.22	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0106	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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 31.7.19 für Standssicherheit Dipl.-Ing. A. Forner</div>	Seite Anlage G1/19
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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-1.00	106.95	-12.2	0.0	-121.22	0.00	0.00																																																																																																																																																																																																																																																																																						
-0.90	106.95	-12.4	0.0	-121.22	0.00	0.00																																																																																																																																																																																																																																																																																						
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-0.80	106.95	-12.5	0.0	-121.22	0.00	0.00																																																																																																																																																																																																																																																																																						
-0.70	106.95	-12.7	0.0	-121.22	0.00	0.00																																																																																																																																																																																																																																																																																						
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-0.50	106.95	-13.1	0.0	-121.22	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	105.45	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																					
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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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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																																																																																																																																																																																																																																																																																								
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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>105.500</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>104.250</td><td>27.041</td><td>27.041</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</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>102.419</td><td>32.618</td><td>33.031</td><td>5.00</td><td>5.00</td></tr><tr><td>102.419</td><td>101.816</td><td>33.031</td><td>35.506</td><td>5.00</td><td>5.00</td></tr><tr><td>101.816</td><td>101.414</td><td>35.506</td><td>37.156</td><td>5.00</td><td>5.00</td></tr><tr><td>101.414</td><td>100.408</td><td>37.156</td><td>41.282</td><td>5.00</td><td>5.00</td></tr><tr><td>100.408</td><td>99.402</td><td>41.282</td><td>45.407</td><td>5.00</td><td>5.00</td></tr><tr><td>99.402</td><td>98.849</td><td>45.407</td><td>47.676</td><td>5.00</td><td>5.00</td></tr><tr><td>98.849</td><td>80.000</td><td>47.676</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>-5.22</td></tr><tr><td>102.42</td><td>101.82</td><td>-5.22</td><td>-30.87</td></tr><tr><td>101.82</td><td>101.41</td><td>-30.87</td><td>-47.97</td></tr><tr><td>101.41</td><td>100.41</td><td>-47.97</td><td>-90.72</td></tr><tr><td>100.41</td><td>99.40</td><td>-90.72</td><td>-133.47</td></tr><tr><td>99.40</td><td>98.85</td><td>-133.47</td><td>-156.98</td></tr><tr><td>98.85</td><td>80.00</td><td>-156.98</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>-121.2</td></tr><tr><td>106.95</td><td>-17.7</td><td>102.6</td><td>-4.7</td><td></td></tr><tr><td>106.89</td><td>-19.9</td><td>100.2</td><td>1.8</td><td></td></tr><tr><td>106.45</td><td>-35.4</td><td>83.9</td><td>42.0</td><td></td></tr><tr><td>106.34</td><td>-39.4</td><td>79.6</td><td>51.3</td><td></td></tr><tr><td>105.93</td><td>-53.9</td><td>64.3</td><td>80.8</td><td></td></tr><tr><td>105.50</td><td>-68.9</td><td>48.5</td><td>104.8</td><td></td></tr><tr><td>105.45</td><td>-70.7</td><td>46.6</td><td>107.2</td><td></td></tr><tr><td>105.40</td><td>-72.2</td><td>44.8</td><td>109.4</td><td></td></tr><tr><td>105.26</td><td>-76.7</td><td>39.2</td><td>115.3</td><td></td></tr><tr><td>105.00</td><td>-85.0</td><td>28.3</td><td>124.1</td><td></td></tr><tr><td>104.40</td><td>-103.1</td><td>6.0</td><td>134.4</td><td></td></tr><tr><td>104.25</td><td>-107.6</td><td>0.5</td><td>134.9</td><td></td></tr><tr><td>103.40</td><td>-133.2</td><td>-31.1</td><td>121.9</td><td></td></tr><tr><td>102.55</td><td>-158.7</td><td>-62.6</td><td>82.1</td><td></td></tr><tr><td>102.52</td><td>-159.6</td><td>-64.3</td><td>80.2</td><td></td></tr><tr><td>102.42</td><td>-161.7</td><td>-68.3</td><td>73.5</td><td></td></tr><tr><td>101.82</td><td>-167.3</td><td>-76.7</td><td>28.4</td><td></td></tr><tr><td>101.41</td><td>-164.7</td><td>-67.3</td><td>-0.9</td><td></td></tr><tr><td>100.41</td><td>-137.5</td><td>5.1</td><td>-37.0</td><td></td></tr><tr><td>99.40</td><td>-127.0</td><td>30.9</td><td>-10.0</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	104.250	27.041	27.041	5.00	5.00	104.250	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	102.419	32.618	33.031	5.00	5.00	102.419	101.816	33.031	35.506	5.00	5.00	101.816	101.414	35.506	37.156	5.00	5.00	101.414	100.408	37.156	41.282	5.00	5.00	100.408	99.402	41.282	45.407	5.00	5.00	99.402	98.849	45.407	47.676	5.00	5.00	98.849	80.000	47.676	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	-5.22	102.42	101.82	-5.22	-30.87	101.82	101.41	-30.87	-47.97	101.41	100.41	-47.97	-90.72	100.41	99.40	-90.72	-133.47	99.40	98.85	-133.47	-156.98	98.85	80.00	-156.98	-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	-121.2	106.95	-17.7	102.6	-4.7		106.89	-19.9	100.2	1.8		106.45	-35.4	83.9	42.0		106.34	-39.4	79.6	51.3		105.93	-53.9	64.3	80.8		105.50	-68.9	48.5	104.8		105.45	-70.7	46.6	107.2		105.40	-72.2	44.8	109.4		105.26	-76.7	39.2	115.3		105.00	-85.0	28.3	124.1		104.40	-103.1	6.0	134.4		104.25	-107.6	0.5	134.9		103.40	-133.2	-31.1	121.9		102.55	-158.7	-62.6	82.1		102.52	-159.6	-64.3	80.2		102.42	-161.7	-68.3	73.5		101.82	-167.3	-76.7	28.4		101.41	-164.7	-67.3	-0.9		100.41	-137.5	5.1	-37.0		99.40	-127.0	30.9	-10.0	
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<div><div>98.85-136.00.00.0</div><div><div>Schnittgrößen 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106.39	-11.5	-	-	-																																																																																																																																																																																																																																																																																																																																								
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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>102.52</div><div>-6.1</div><div>0.00</div><div>0.00</div><div>12.51</div></div><div><div>102.52</div><div>-6.1</div><div>0.25</div><div>1.53</div><div>1.53</div></div><div><div>102.47</div><div>-6.0</div><div>0.25</div><div>1.51</div><div>5.00</div></div><div><div>102.47</div><div>-6.0</div><div>0.84</div><div>5.01</div><div>5.00</div></div><div><div>102.42</div><div>-5.9</div><div>0.84</div><div>4.93</div><div>8.48</div></div><div><div>102.42</div><div>-5.9</div><div>1.44</div><div>8.48</div><div>8.48</div></div><div><div>102.37</div><div>-5.8</div><div>1.44</div><div>8.35</div><div>11.95</div></div><div><div>101.87</div><div>-4.9</div><div>9.54</div><div>46.69</div><div>46.69</div></div><div><div>101.82</div><div>-4.8</div><div>9.54</div><div>45.83</div><div>50.16</div></div><div><div>101.82</div><div>-4.8</div><div>10.44</div><div>50.16</div><div>50.16</div></div><div><div>101.77</div><div>-4.7</div><div>10.44</div><div>49.22</div><div>53.63</div></div><div><div>101.46</div><div>-4.2</div><div>17.85</div><div>74.48</div><div>74.47</div></div><div><div>101.41</div><div>-4.1</div><div>17.85</div><div>72.86</div><div>77.95</div></div><div><div>101.41</div><div>-4.1</div><div>19.09</div><div>77.95</div><div>77.95</div></div><div><div>101.36</div><div>-4.0</div><div>19.09</div><div>76.22</div><div>81.42</div></div><div><div>100.46</div><div>-2.4</div><div>50.00</div><div>118.75</div><div>143.94</div></div><div><div>100.41</div><div>-2.3</div><div>50.00</div><div>114.31</div><div>147.41</div></div><div><div>100.41</div><div>-2.3</div><div>50.00</div><div>114.31</div><div>147.41</div></div><div><div>100.36</div><div>-2.2</div><div>50.00</div><div>109.88</div><div>150.89</div></div><div><div>99.45</div><div>-0.6</div><div>50.00</div><div>31.14</div><div>213.41</div></div><div><div>99.40</div><div>-0.5</div><div>50.00</div><div>26.80</div><div>216.88</div></div><div><div>99.40</div><div>-0.5</div><div>50.00</div><div>26.80</div><div>216.88</div></div><div><div>99.35</div><div>-0.4</div><div>50.00</div><div>22.47</div><div>220.36</div></div><div><div>98.90</div><div>0.3</div><div>50.00</div><div>-16.51</div><div>251.62</div></div><div><div>98.85</div><div>0.4</div><div>50.00</div><div>-20.84</div><div>255.09</div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09863891 Theoretischer Fußpunkt = 98.849 m</div><div>Einbindetiefe tg = 3.70 m Profillänge = 8.60 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + Gs,k - G's,k + Eav,k &gt;= Bv,k Gs,k = 162.74 kN/m G's,k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 50.73 kN/m (Eah,k = 294.46 kN/m) Bv,k = 89.02 Summe V,k = 124.45 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 99.73 bis 96.21 m) ==&gt; 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 98.85 55.00 s3: Flusskies, -sand Mantelfläche bis 98.85 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 201.85 / 1.40 = 144.18 kN/m Rd = Rb,d + Rs1,d = 1009.23 kN/m</div><div>Einwirkungen Vd = Gd - G's,k + Eav,d + Pv,d = 195.28 - 0.00 + 58.34 + 0.00 = 253.63 kN/m ==&gt; µ = Vd / Rd = 253.63 / 1009.23 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/23
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 311/23
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>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 7 Datei: 04_BS 7_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 = 108.45 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>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 2.00 108.45 108.45 108.45 106.39 105.49 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 -27.50 0.00 0.00 0.00 43.00 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.80 m</div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 011/24
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>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 <math>\mu_e = 83.794 / 83.868 = 0.999</math></div> <div>Bettungslager <math>B_{h,d} = 83.794 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 83.868 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge <math>N_{d'}</math> <math>N(g+q+w)_k</math> <math>N(g+w)_k</math> <math>N_{w,k}</math> EA EI <math>N_{d'}</math></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 -382.01 -319.49 -235.79 -49.88 3.900E+7 2.100E+7 -426.19 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y <math>w_{x,d}</math> <math>w_{y,d}</math> <math>N_{d'}</math> <math>Q_{d'}</math> <math>M_{d'}</math></div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -8.7 0.0 -382.47 0.00 0.00</div> <div>-7.47 103.72 -8.7 0.0 -382.47 0.00 0.00</div> <div>-7.47 103.72 -8.7 0.0 -382.47 0.00 0.00</div> <div>-6.64 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-5.81 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-4.98 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-4.15 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-3.32 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-2.49 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-1.66 103.72 -8.8 0.0 -382.47 0.00 0.00</div> <div>-0.83 103.72 -8.8 0.1 -382.47 0.00 0.00</div> <div>0.00 103.72 -8.8 0.1 -382.47 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 -0.0076</div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{a,k}</math> <math>\phi_{i,k}</math> <math>c(pas)_k</math> <math>c(akt)_k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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 G1 Schnitt 7R		Seite Anlage G1/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 11/25
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>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>102.419</td><td>32.618</td><td>33.031</td><td>0.00</td><td>0.00</td></tr><tr><td>102.419</td><td>101.412</td><td>33.031</td><td>37.164</td><td>0.00</td><td>0.00</td></tr><tr><td>101.412</td><td>100.404</td><td>37.164</td><td>41.296</td><td>0.00</td><td>0.00</td></tr><tr><td>100.404</td><td>100.152</td><td>41.296</td><td>42.329</td><td>0.00</td><td>0.00</td></tr><tr><td>100.152</td><td>99.649</td><td>42.329</td><td>44.395</td><td>0.00</td><td>0.00</td></tr><tr><td>99.649</td><td>80.000</td><td>44.395</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>-5.22</td></tr><tr><td>102.42</td><td>101.41</td><td>-5.22</td><td>-48.04</td></tr><tr><td>101.41</td><td>100.40</td><td>-48.04</td><td>-90.86</td></tr><tr><td>100.40</td><td>100.15</td><td>-90.86</td><td>-101.57</td></tr><tr><td>100.15</td><td>99.65</td><td>-101.57</td><td>-122.98</td></tr><tr><td>99.65</td><td>80.00</td><td>-122.98</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>-382.5</td></tr><tr><td>103.72</td><td>-210.7</td><td>190.6</td><td>-426.8</td><td></td></tr><tr><td>103.40</td><td>-221.6</td><td>168.5</td><td>-369.3</td><td></td></tr><tr><td>102.55</td><td>-251.2</td><td>101.6</td><td>-253.6</td><td></td></tr><tr><td>102.52</td><td>-252.1</td><td>100.0</td><td>-250.6</td><td></td></tr><tr><td>102.42</td><td>-254.1</td><td>96.6</td><td>-240.7</td><td></td></tr><tr><td>101.41</td><td>-257.7</td><td>102.0</td><td>-146.6</td><td></td></tr><tr><td>100.40</td><td>-263.8</td><td>91.0</td><td>-38.8</td><td></td></tr><tr><td>100.15</td><td>-265.1</td><td>68.5</td><td>-18.6</td><td></td></tr><tr><td>99.65</td><td>-258.8</td><td>0.0</td><td>0.0</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	102.419	32.618	33.031	0.00	0.00	102.419	101.412	33.031	37.164	0.00	0.00	101.412	100.404	37.164	41.296	0.00	0.00	100.404	100.152	41.296	42.329	0.00	0.00	100.152	99.649	42.329	44.395	0.00	0.00	99.649	80.000	44.395	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	-5.22	102.42	101.41	-5.22	-48.04	101.41	100.40	-48.04	-90.86	100.40	100.15	-90.86	-101.57	100.15	99.65	-101.57	-122.98	99.65	80.00	-122.98	-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	-382.5	103.72	-210.7	190.6	-426.8		103.40	-221.6	168.5	-369.3		102.55	-251.2	101.6	-253.6		102.52	-252.1	100.0	-250.6		102.42	-254.1	96.6	-240.7		101.41	-257.7	102.0	-146.6		100.40	-263.8	91.0	-38.8		100.15	-265.1	68.5	-18.6		99.65	-258.8	0.0	0.0	
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101.41	100.40	-48.04	-90.86																																																																																																																																																																																																																																																																																																																		
100.40	100.15	-90.86	-101.57																																																																																																																																																																																																																																																																																																																		
100.15	99.65	-101.57	-122.98																																																																																																																																																																																																																																																																																																																		
99.65	80.00	-122.98	-958.09																																																																																																																																																																																																																																																																																																																		
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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	-382.5																																																																																																																																																																																																																																																																																																																	
103.72	-210.7	190.6	-426.8																																																																																																																																																																																																																																																																																																																		
103.40	-221.6	168.5	-369.3																																																																																																																																																																																																																																																																																																																		
102.55	-251.2	101.6	-253.6																																																																																																																																																																																																																																																																																																																		
102.52	-252.1	100.0	-250.6																																																																																																																																																																																																																																																																																																																		
102.42	-254.1	96.6	-240.7																																																																																																																																																																																																																																																																																																																		
101.41	-257.7	102.0	-146.6																																																																																																																																																																																																																																																																																																																		
100.40	-263.8	91.0	-38.8																																																																																																																																																																																																																																																																																																																		
100.15	-265.1	68.5	-18.6																																																																																																																																																																																																																																																																																																																		
99.65	-258.8	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):																																																																																																																																																																																																																																																																																																																																										
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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>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.44</td><td>-0.1</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-27.4</td><td>-23.1</td><td>-10.9</td><td></td></tr><tr><td>107.45</td><td>-70.4</td><td>-23.1</td><td>-38.4</td><td></td></tr><tr><td>106.45</td><td>-100.4</td><td>-53.7</td><td>-76.3</td><td></td></tr><tr><td>106.39</td><td>-102.2</td><td>-55.7</td><td>-79.4</td><td></td></tr><tr><td>105.50</td><td>-129.0</td><td>-82.8</td><td>-141.8</td><td></td></tr><tr><td>105.49</td><td>-129.3</td><td>-83.1</td><td>-142.9</td><td></td></tr><tr><td>105.45</td><td>-130.4</td><td>-84.1</td><td>-146.0</td><td></td></tr><tr><td>105.40</td><td>-131.8</td><td>-85.7</td><td>-150.2</td><td></td></tr><tr><td>104.40</td><td>-159.8</td><td>-125.7</td><td>-254.8</td><td></td></tr><tr><td>103.72</td><td>-179.5</td><td>-161.1</td><td>-351.9</td><td>-319.5</td></tr><tr><td>103.72</td><td>-179.5</td><td>158.4</td><td>-351.9</td><td></td></tr><tr><td>103.40</td><td>-189.0</td><td>139.5</td><td>-304.2</td><td></td></tr><tr><td>102.55</td><td>-214.7</td><td>82.2</td><td>-209.2</td><td></td></tr><tr><td>102.52</td><td>-215.5</td><td>80.9</td><td>-206.7</td><td></td></tr><tr><td>102.42</td><td>-217.3</td><td>77.9</td><td>-198.8</td><td></td></tr><tr><td>101.41</td><td>-220.1</td><td>83.4</td><td>-122.8</td><td></td></tr><tr><td>100.40</td><td>-224.6</td><td>76.8</td><td>-32.9</td><td></td></tr><tr><td>100.15</td><td>-226.0</td><td>58.0</td><td>-15.8</td><td></td></tr><tr><td>99.65</td><td>-221.2</td><td>0.0</td><td>0.0</td><td></td></tr></table> <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>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>108.45</td><td>0.0</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>-21.7</td><td>-7.6</td><td>-3.2</td><td></td></tr><tr><td>107.45</td><td>-64.7</td><td>-7.6</td><td>-30.7</td><td></td></tr><tr><td>106.45</td><td>-89.1</td><td>-22.6</td><td>-45.1</td><td></td></tr><tr><td>106.39</td><td>-90.5</td><td>-23.7</td><td>-46.4</td><td></td></tr><tr><td>105.50</td><td>-114.7</td><td>-43.7</td><td>-76.1</td><td></td></tr><tr><td>105.49</td><td>-115.1</td><td>-44.0</td><td>-76.7</td><td></td></tr><tr><td>105.45</td><td>-116.2</td><td>-45.0</td><td>-78.3</td><td></td></tr><tr><td>105.40</td><td>-117.5</td><td>-46.6</td><td>-80.6</td><td></td></tr><tr><td>104.40</td><td>-145.6</td><td>-86.6</td><td>-146.0</td><td></td></tr><tr><td>103.72</td><td>-165.3</td><td>-122.0</td><td>-216.6</td><td>-235.8</td></tr><tr><td>103.72</td><td>-165.3</td><td>113.8</td><td>-216.6</td><td></td></tr><tr><td>103.40</td><td>-174.7</td><td>94.9</td><td>-183.1</td><td></td></tr><tr><td>102.55</td><td>-200.4</td><td>37.6</td><td>-126.1</td><td></td></tr><tr><td>102.52</td><td>-201.3</td><td>36.3</td><td>-125.0</td><td></td></tr><tr><td>102.42</td><td>-203.1</td><td>33.3</td><td>-121.5</td><td></td></tr><tr><td>101.41</td><td>-203.3</td><td>45.3</td><td>-88.5</td><td></td></tr><tr><td>100.40</td><td>-200.8</td><td>60.0</td><td>-26.5</td><td></td></tr><tr><td>100.15</td><td>-204.5</td><td>46.7</td><td>-12.9</td><td></td></tr><tr><td>99.65</td><td>-204.1</td><td>0.0</td><td>0.0</td><td></td></tr></table> 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<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>108.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></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>0.0</td><td>-0.1</td><td>0.0</td><td></td></tr><tr><td>107.45</td><td>-5.7</td><td>-15.6</td><td>-7.8</td><td></td></tr><tr><td>106.45</td><td>-11.3</td><td>-31.2</td><td>-31.1</td><td></td></tr><tr><td>106.39</td><td>-11.7</td><td>-32.0</td><td>-32.9</td><td></td></tr><tr><td>105.50</td><td>-14.2</td><td>-39.1</td><td>-65.7</td><td></td></tr><tr><td>105.49</td><td>-14.2</td><td>-39.1</td><td>-66.2</td><td></td></tr><tr><td>105.45</td><td>-14.2</td><td>-39.1</td><td>-67.7</td><td></td></tr><tr><td>105.40</td><td>-14.2</td><td>-39.1</td><td>-69.6</td><td></td></tr><tr><td>104.40</td><td>-14.2</td><td>-39.1</td><td>-108.7</td><td></td></tr><tr><td>103.72</td><td>-14.2</td><td>-39.1</td><td>-135.3</td><td>-92.8</td></tr><tr><td>103.72</td><td>-14.2</td><td>44.6</td><td>-135.3</td><td></td></tr><tr><td>103.40</td><td>-14.2</td><td>44.6</td><td>-121.0</td><td></td></tr><tr><td>102.55</td><td>-14.2</td><td>44.6</td><td>-83.1</td><td></td></tr><tr><td>102.52</td><td>-14.2</td><td>44.6</td><td>-81.8</td><td></td></tr></table>			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	0.0	0.0	0.0		108.44	-0.1	-0.1	0.0		107.45	-27.4	-23.1	-10.9		107.45	-70.4	-23.1	-38.4		106.45	-100.4	-53.7	-76.3		106.39	-102.2	-55.7	-79.4		105.50	-129.0	-82.8	-141.8		105.49	-129.3	-83.1	-142.9		105.45	-130.4	-84.1	-146.0		105.40	-131.8	-85.7	-150.2		104.40	-159.8	-125.7	-254.8		103.72	-179.5	-161.1	-351.9	-319.5	103.72	-179.5	158.4	-351.9		103.40	-189.0	139.5	-304.2		102.55	-214.7	82.2	-209.2		102.52	-215.5	80.9	-206.7		102.42	-217.3	77.9	-198.8		101.41	-220.1	83.4	-122.8		100.40	-224.6	76.8	-32.9		100.15	-226.0	58.0	-15.8		99.65	-221.2	0.0	0.0		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	0.0	0.0	0.0		108.44	-0.1	0.0	0.0		107.45	-21.7	-7.6	-3.2		107.45	-64.7	-7.6	-30.7		106.45	-89.1	-22.6	-45.1		106.39	-90.5	-23.7	-46.4		105.50	-114.7	-43.7	-76.1		105.49	-115.1	-44.0	-76.7		105.45	-116.2	-45.0	-78.3		105.40	-117.5	-46.6	-80.6		104.40	-145.6	-86.6	-146.0		103.72	-165.3	-122.0	-216.6	-235.8	103.72	-165.3	113.8	-216.6		103.40	-174.7	94.9	-183.1		102.55	-200.4	37.6	-126.1		102.52	-201.3	36.3	-125.0		102.42	-203.1	33.3	-121.5		101.41	-203.3	45.3	-88.5		100.40	-200.8	60.0	-26.5		100.15	-204.5	46.7	-12.9		99.65	-204.1	0.0	0.0		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	0.0	0.0	0.0		108.44	0.0	-0.1	0.0		107.45	-5.7	-15.6	-7.8		106.45	-11.3	-31.2	-31.1		106.39	-11.7	-32.0	-32.9		105.50	-14.2	-39.1	-65.7		105.49	-14.2	-39.1	-66.2		105.45	-14.2	-39.1	-67.7		105.40	-14.2	-39.1	-69.6		104.40	-14.2	-39.1	-108.7		103.72	-14.2	-39.1	-135.3	-92.8	103.72	-14.2	44.6	-135.3		103.40	-14.2	44.6	-121.0		102.55	-14.2	44.6	-83.1		102.52	-14.2	44.6	-81.8	
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107.45	-64.7	-7.6	-30.7																																																																																																																																																																																																																																																																																																																																									
106.45	-89.1	-22.6	-45.1																																																																																																																																																																																																																																																																																																																																									
106.39	-90.5	-23.7	-46.4																																																																																																																																																																																																																																																																																																																																									
105.50	-114.7	-43.7	-76.1																																																																																																																																																																																																																																																																																																																																									
105.49	-115.1	-44.0	-76.7																																																																																																																																																																																																																																																																																																																																									
105.45	-116.2	-45.0	-78.3																																																																																																																																																																																																																																																																																																																																									
105.40	-117.5	-46.6	-80.6																																																																																																																																																																																																																																																																																																																																									
104.40	-145.6	-86.6	-146.0																																																																																																																																																																																																																																																																																																																																									
103.72	-165.3	-122.0	-216.6	-235.8																																																																																																																																																																																																																																																																																																																																								
103.72	-165.3	113.8	-216.6																																																																																																																																																																																																																																																																																																																																									
103.40	-174.7	94.9	-183.1																																																																																																																																																																																																																																																																																																																																									
102.55	-200.4	37.6	-126.1																																																																																																																																																																																																																																																																																																																																									
102.52	-201.3	36.3	-125.0																																																																																																																																																																																																																																																																																																																																									
102.42	-203.1	33.3	-121.5																																																																																																																																																																																																																																																																																																																																									
101.41	-203.3	45.3	-88.5																																																																																																																																																																																																																																																																																																																																									
100.40	-200.8	60.0	-26.5																																																																																																																																																																																																																																																																																																																																									
100.15	-204.5	46.7	-12.9																																																																																																																																																																																																																																																																																																																																									
99.65	-204.1	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
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	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																																									
108.44	0.0	-0.1	0.0																																																																																																																																																																																																																																																																																																																																									
107.45	-5.7	-15.6	-7.8																																																																																																																																																																																																																																																																																																																																									
106.45	-11.3	-31.2	-31.1																																																																																																																																																																																																																																																																																																																																									
106.39	-11.7	-32.0	-32.9																																																																																																																																																																																																																																																																																																																																									
105.50	-14.2	-39.1	-65.7																																																																																																																																																																																																																																																																																																																																									
105.49	-14.2	-39.1	-66.2																																																																																																																																																																																																																																																																																																																																									
105.45	-14.2	-39.1	-67.7																																																																																																																																																																																																																																																																																																																																									
105.40	-14.2	-39.1	-69.6																																																																																																																																																																																																																																																																																																																																									
104.40	-14.2	-39.1	-108.7																																																																																																																																																																																																																																																																																																																																									
103.72	-14.2	-39.1	-135.3	-92.8																																																																																																																																																																																																																																																																																																																																								
103.72	-14.2	44.6	-135.3																																																																																																																																																																																																																																																																																																																																									
103.40	-14.2	44.6	-121.0																																																																																																																																																																																																																																																																																																																																									
102.55	-14.2	44.6	-83.1																																																																																																																																																																																																																																																																																																																																									
102.52	-14.2	44.6	-81.8																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/2																																																																																																																																																																																																																																																																																																																																										
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 112																																																																																																																																																																																																																																																																																																																																										
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>102.42-14.244.6-77.3</div><div>101.41-16.838.2-34.3</div><div>100.40-23.716.9-6.4</div><div>100.15-21.611.3-2.9</div><div>99.65-17.10.00.0</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>108.45-25.6--</div><div>108.45-25.6--</div><div>108.45-25.6--</div><div>108.44-25.6--</div><div>108.44-25.6--</div><div>108.39-25.4--</div><div>107.50-21.7--</div><div>107.45-21.5--</div><div>107.45-21.5--</div><div>107.40-21.3--</div><div>106.50-17.7--</div><div>106.45-17.5--</div><div>106.45-17.5--</div><div>106.39-17.3--</div><div>106.39-17.3--</div><div>106.34-17.1--</div><div>105.55-14.0--</div><div>105.50-13.9--</div><div>105.50-13.9--</div><div>105.49-13.8--</div><div>105.49-13.8--</div><div>105.45-13.7--</div><div>105.45-13.7--</div><div>105.40-13.5--</div><div>105.40-13.5--</div><div>105.35-13.3--</div><div>104.45-10.1--</div><div>104.40-9.9--</div><div>104.40-9.9--</div><div>104.35-9.7--</div><div>103.77-7.8--</div><div>103.72-7.7--</div><div>103.72-7.7--</div><div>103.67-7.5--</div><div>103.45-6.9--</div><div>103.40-6.7--</div><div>103.40-6.7--</div><div>103.35-6.6--</div><div>102.60-4.5--</div><div>102.55-4.40.000.000.00</div><div>102.55-4.40.000.0011.73</div><div>102.52-4.30.000.0012.51</div><div>102.52-4.30.351.531.53</div><div>102.47-4.20.351.495.01</div><div>102.47-4.21.195.015.01</div><div>102.42-4.11.194.868.49</div><div>102.42-4.12.078.498.49</div><div>102.37-4.02.078.2311.97</div><div>101.46-1.940.1974.5974.59</div><div>101.41-1.740.1970.1278.07</div><div>101.41-1.744.7578.0778.07</div><div>101.36-1.644.7573.1181.55</div><div>100.450.350.00-14.64144.17</div><div>100.400.450.00-19.86147.65</div><div>100.400.450.00-19.86147.65</div><div>100.350.550.00-25.08151.13</div><div>100.200.850.00-40.70161.57</div><div>100.150.950.00-45.90165.05</div><div>100.150.950.00-45.90165.05</div><div>100.101.050.00-51.09168.53</div><div>99.701.950.00-92.58196.36</div></div></div></div>					
Schnitt:		Anlage G1 Schnitt 7R		Seite Anlage G1/28	
Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 01128	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

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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>99.65    2.0    50.00    -97.77    199.84</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.11792490 Theoretischer Fußpunkt = 99.649 m</div> <div>Einbindetiefe tg = 2.90 m Profillänge = 8.80 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 166.52 kN/m G',k = 0.00 kN/m Pv,k = 43.00 kN/m Eav,k = 52.16 kN/m (Eah,k = 305.65 kN/m) Bv,k = 30.23 Summe V,k = 231.46 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 100.53 bis 97.01 m) ==&gt; 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    99.65    55.00    s3: Flusskies, -sand Mantelfläche bis 99.65 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 157.85 / 1.40 = 112.75 kN/m R,d = Rb,d + R,s1,d = 977.80 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 199.83 - 0.00 + 61.06 + 51.60 = 312.48 kN/m ==&gt; µ = V,d / R,d = 312.48 / 977.80 = 0.32</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage G1    Schnitt 7R		Seite Anlage G1/29
Kapitel: 5    LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1129
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

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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>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: 05_BS 7_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 = 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 = 10.30 m</div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

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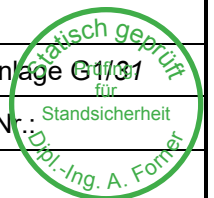
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div>Bettungsmodule</div> <div>von bis ks(oben) ks(unten)</div> <div>[mNHN] [mNHN] [MN/m³] [MN/m³]</div> <div>102.55 102.52 5.000 5.000</div> <div>102.52 80.00 50.000 50.000</div> <div>Ausnutzungsgrad <math>\mu_e = 278.503 / 279.471 = 0.997</math></div> <div>Bettungslager <math>B_{h,d} = 278.503 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 279.471 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge <math>N_d</math> <math>N(g+q+w)_k</math> <math>N(g+w)_k</math> <math>N_{w,k}</math> EA EI <math>N_{d'}</math></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 -215.49 -166.60 -166.60 -49.06 3.900E+7 2.100E+7 -212.41 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y <math>w_{x,d}</math> <math>w_{y,d}</math> <math>N_d</math> <math>Q_{d'}</math> <math>M_{d'}</math></div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-7.47 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-7.47 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-6.64 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-5.81 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-4.98 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-4.15 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-3.32 103.72 -9.7 0.0 -216.09 0.00 0.00</div> <div>-2.49 103.72 -9.7 0.1 -216.09 0.00 0.00</div> <div>-1.66 103.72 -9.7 0.1 -216.09 0.00 0.00</div> <div>-0.83 103.72 -9.7 0.1 -216.09 0.00 0.00</div> <div>0.00 103.72 -9.7 0.1 -216.09 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 -0.0076</div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{m',k}</math> <math>\phi_{i,k}</math> <math>c(pas)_k</math> <math>c(akt)_k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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 1.992 0.00 0.00</div> <div>108.444 107.450 1.992 9.352 0.00 0.00</div> <div>107.450 106.450 9.352 16.756 0.00 0.00</div>					
Schnitt:		Anlage G1 Schnitt 7R		Seite Anlage G1/31	
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11/31	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

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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																																																																																																																																																																																																																																																																																																												
<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>35.369</td><td>0.00</td><td>0.00</td></tr><tr><td>101.415</td><td>100.410</td><td>35.369</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>43.612</td><td>0.00</td><td>0.00</td></tr><tr><td>99.405</td><td>98.400</td><td>43.612</td><td>47.734</td><td>0.00</td><td>0.00</td></tr><tr><td>98.400</td><td>98.149</td><td>47.734</td><td>48.764</td><td>0.00</td><td>0.00</td></tr><tr><td>98.149</td><td>80.000</td><td>48.764</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>-55.83</td></tr><tr><td>101.41</td><td>100.41</td><td>-55.83</td><td>-95.48</td></tr><tr><td>100.41</td><td>99.40</td><td>-95.48</td><td>-135.14</td></tr><tr><td>99.40</td><td>98.40</td><td>-135.14</td><td>-174.80</td></tr><tr><td>98.40</td><td>98.15</td><td>-174.80</td><td>-184.72</td></tr><tr><td>98.15</td><td>80.00</td><td>-184.72</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>-216.1</td></tr><tr><td>103.72</td><td>-209.8</td><td>72.4</td><td>-250.1</td><td></td></tr><tr><td>103.40</td><td>-221.5</td><td>48.8</td><td>-230.7</td><td></td></tr><tr><td>102.55</td><td>-253.6</td><td>-23.2</td><td>-218.8</td><td></td></tr><tr><td>102.52</td><td>-254.5</td><td>-24.7</td><td>-219.5</td><td></td></tr><tr><td>102.42</td><td>-255.7</td><td>-25.8</td><td>-222.0</td><td></td></tr><tr><td>102.12</td><td>-257.4</td><td>-24.0</td><td>-229.7</td><td></td></tr><tr><td>101.41</td><td>-249.1</td><td>9.1</td><td>-237.3</td><td></td></tr><tr><td>100.41</td><td>-220.4</td><td>94.0</td><td>-182.8</td><td></td></tr><tr><td>99.40</td><td>-220.0</td><td>102.4</td><td>-77.0</td><td></td></tr><tr><td>98.40</td><td>-235.9</td><td>30.1</td><td>-3.9</td><td></td></tr><tr><td>98.15</td><td>-236.2</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	35.369	0.00	0.00	101.415	100.410	35.369	39.490	0.00	0.00	100.410	99.405	39.490	43.612	0.00	0.00	99.405	98.400	43.612	47.734	0.00	0.00	98.400	98.149	47.734	48.764	0.00	0.00	98.149	80.000	48.764	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	-55.83	101.41	100.41	-55.83	-95.48	100.41	99.40	-95.48	-135.14	99.40	98.40	-135.14	-174.80	98.40	98.15	-174.80	-184.72	98.15	80.00	-184.72	-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	-216.1	103.72	-209.8	72.4	-250.1		103.40	-221.5	48.8	-230.7		102.55	-253.6	-23.2	-218.8		102.52	-254.5	-24.7	-219.5		102.42	-255.7	-25.8	-222.0		102.12	-257.4	-24.0	-229.7		101.41	-249.1	9.1	-237.3		100.41	-220.4	94.0	-182.8		99.40	-220.0	102.4	-77.0		98.40	-235.9	30.1	-3.9		98.15	-236.2	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):																																																																																																																																																																																																																																																																																																																																										
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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>-20.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-20.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.45</td><td>-20.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-20.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-20.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.39</td><td>-20.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-14.6</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>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.1</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>105.45</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</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>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><tr><td>102.55</td><td>-5.1</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.52</td><td>-5.1</td><td>0.00</td><td>0.00</td><td>22.52</td></tr><tr><td>102.52</td><td>-5.1</td><td>4.21</td><td>21.35</td><td>21.35</td></tr><tr><td>102.47</td><td>-5.0</td><td>4.21</td><td>20.94</td><td>24.82</td></tr><tr><td>102.47</td><td>-5.0</td><td>4.99</td><td>24.82</td><td>24.82</td></tr><tr><td>102.42</td><td>-4.9</td><td>4.99</td><td>24.33</td><td>28.29</td></tr><tr><td>102.42</td><td>-4.9</td><td>5.81</td><td>28.29</td><td>28.29</td></tr><tr><td>102.37</td><td>-4.8</td><td>5.81</td><td>27.73</td><td>31.76</td></tr><tr><td>102.17</td><td>-4.4</td><td>10.39</td><td>45.64</td><td>45.64</td></tr><tr><td>102.12</td><td>-4.3</td><td>10.39</td><td>44.68</td><td>49.11</td></tr><tr><td>102.12</td><td>-4.3</td><td>11.42</td><td>49.11</td><td>49.11</td></tr><tr><td>102.07</td><td>-4.2</td><td>11.42</td><td>48.06</td><td>52.58</td></tr><tr><td>101.46</td><td>-3.2</td><td>29.80</td><td>94.23</td><td>94.22</td></tr><tr><td>101.41</td><td>-3.1</td><td>29.80</td><td>91.78</td><td>97.69</td></tr><tr><td>101.41</td><td>-3.1</td><td>31.72</td><td>97.70</td><td>97.69</td></tr><tr><td>101.36</td><td>-3.0</td><td>31.72</td><td>95.12</td><td>101.16</td></tr><tr><td>100.46</td><td>-1.7</td><td>50.00</td><td>83.33</td><td>163.63</td></tr><tr><td>100.41</td><td>-1.6</td><td>50.00</td><td>79.96</td><td>167.10</td></tr><tr><td>100.41</td><td>-1.6</td><td>50.00</td><td>79.96</td><td>167.10</td></tr><tr><td>100.36</td><td>-1.5</td><td>50.00</td><td>76.63</td><td>170.57</td></tr><tr><td>99.46</td><td>-0.4</td><td>50.00</td><td>20.81</td><td>233.03</td></tr><tr><td>99.40</td><td>-0.4</td><td>50.00</td><td>17.89</td><td>236.50</td></tr><tr><td>99.40</td><td>-0.4</td><td>50.00</td><td>17.89</td><td>236.50</td></tr><tr><td>99.35</td><td>-0.3</td><td>50.00</td><td>14.99</td><td>239.97</td></tr><tr><td>98.45</td><td>0.7</td><td>50.00</td><td>-36.02</td><td>302.43</td></tr><tr><td>98.40</td><td>0.8</td><td>50.00</td><td>-38.82</td><td>305.90</td></tr><tr><td>98.40</td><td>0.8</td><td>50.00</td><td>-38.82</td><td>305.90</td></tr><tr><td>98.35</td><td>0.8</td><td>50.00</td><td>-41.62</td><td>309.38</td></tr><tr><td>98.20</td><td>1.0</td><td>50.00</td><td>-50.01</td><td>319.79</td></tr></tbody></table></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.45	-20.4	-	-	-	108.45	-20.4	-	-	-	108.45	-20.4	-	-	-	108.44	-20.4	-	-	-	108.44	-20.4	-	-	-	108.39	-20.2	-	-	-	107.50	-17.7	-	-	-	107.45	-17.5	-	-	-	107.45	-17.5	-	-	-	107.40	-17.4	-	-	-	106.50	-14.9	-	-	-	106.45	-14.7	-	-	-	106.45	-14.7	-	-	-	106.40	-14.6	-	-	-	105.55	-12.3	-	-	-	105.50	-12.1	-	-	-	105.50	-12.1	-	-	-	105.45	-12.0	-	-	-	105.45	-12.0	-	-	-	105.40	-11.9	-	-	-	105.40	-11.9	-	-	-	105.35	-11.7	-	-	-	104.45	-9.4	-	-	-	104.40	-9.3	-	-	-	104.40	-9.3	-	-	-	104.35	-9.2	-	-	-	103.77	-7.7	-	-	-	103.72	-7.6	-	-	-	103.72	-7.6	-	-	-	103.67	-7.5	-	-	-	103.45	-7.0	-	-	-	103.40	-6.9	-	-	-	103.40	-6.9	-	-	-	103.35	-6.8	-	-	-	102.60	-5.2	-	-	-	102.55	-5.1	0.00	0.00	0.00	102.55	-5.1	0.00	0.00	21.74	102.52	-5.1	0.00	0.00	22.52	102.52	-5.1	4.21	21.35	21.35	102.47	-5.0	4.21	20.94	24.82	102.47	-5.0	4.99	24.82	24.82	102.42	-4.9	4.99	24.33	28.29	102.42	-4.9	5.81	28.29	28.29	102.37	-4.8	5.81	27.73	31.76	102.17	-4.4	10.39	45.64	45.64	102.12	-4.3	10.39	44.68	49.11	102.12	-4.3	11.42	49.11	49.11	102.07	-4.2	11.42	48.06	52.58	101.46	-3.2	29.80	94.23	94.22	101.41	-3.1	29.80	91.78	97.69	101.41	-3.1	31.72	97.70	97.69	101.36	-3.0	31.72	95.12	101.16	100.46	-1.7	50.00	83.33	163.63	100.41	-1.6	50.00	79.96	167.10	100.41	-1.6	50.00	79.96	167.10	100.36	-1.5	50.00	76.63	170.57	99.46	-0.4	50.00	20.81	233.03	99.40	-0.4	50.00	17.89	236.50	99.40	-0.4	50.00	17.89	236.50	99.35	-0.3	50.00	14.99	239.97	98.45	0.7	50.00	-36.02	302.43	98.40	0.8	50.00	-38.82	305.90	98.40	0.8	50.00	-38.82	305.90	98.35	0.8	50.00	-41.62	309.38	98.20	1.0	50.00	-50.01	319.79
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99.35	-0.3	50.00	14.99	239.97																																																																																																																																																																																																																																																																																																																																																
98.45	0.7	50.00	-36.02	302.43																																																																																																																																																																																																																																																																																																																																																
98.40	0.8	50.00	-38.82	305.90																																																																																																																																																																																																																																																																																																																																																
98.40	0.8	50.00	-38.82	305.90																																																																																																																																																																																																																																																																																																																																																
98.35	0.8	50.00	-41.62	309.38																																																																																																																																																																																																																																																																																																																																																
98.20	1.0	50.00	-50.01	319.79																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage G1 Schnitt 7R		Seite Anlage G1/34																																																																																																																																																																																																																																																																																																																																																
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1134																																																																																																																																																																																																																																																																																																																																																
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>98.151.150.00-52.81323.26</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06380338 Theoretischer Fußpunkt = 98.149 m</div> <div>Einbindetiefe tg = 4.40 m Profillänge = 10.30 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 194.91 kN/m G',k = 0.00 kN/m Pv,k = 43.00 kN/m Eav,k = 55.60 kN/m (Eah,k = 316.79 kN/m) Bv,k = 86.93 Summe V,k = 206.57 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 99.03 bis 95.51 m) ==&gt; 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 vonbisqs,k [kN/m²]Bezeichnung 102.55102.520.00S2: Auelehm 102.5298.1555.00s3: Flussskies, -sand Mantelfläche bis 98.15 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 240.35 / 1.40 = 171.68 kN/m R,d = Rb,d + Rs1,d = 1036.73 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 263.12 - 0.00 + 70.89 + 58.05 = 392.07 kN/m ==&gt; µ = V,d / R,d = 392.07 / 1036.73 = 0.38</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage G1 Schnitt 7R		Seite Anlage G1/35
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1135
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

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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 H1 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: 00_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><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>0.50</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></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 = 7.50 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>105.35</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></tbody></table> <p>Ausnutzungsgrad mue = 285.640 / 566.223 = 0.504 Bettungslager Bh,d = 285.640 kN/m Erdwiderstand Eph,d = 566.223 kN/m</p> <p>Bodenkennwerte</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																																									
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																																														
Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/1																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 1119																																															
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>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</div> <div>Erhöhte aktive Erddruckbeiwerte Beziehung: (1 - Faktor) · kah + Faktor · k0 Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit phi = 40 ° Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &lt;&gt; 0.0. Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <div>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</div> <div>Aktive Erddruckordinaten ([g+q],k) von bis oben unten Wasserdruck [mNHN] [mNHN] [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 5.00 102.430 102.033 29.769 31.397 5.00 5.00 102.033 101.438 31.397 33.840 5.00 5.00 101.438 100.991 33.840 35.672 5.00 5.00 100.991 100.445 35.672 37.912 5.00 5.00 100.445 99.949 37.912 39.947 5.00 5.00 99.949 80.000 39.947 121.769 5.00 5.00</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 0.00 107.45 106.00</div> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 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</div> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 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 -66.17 103.44 102.48 -66.17 -81.37 102.48 102.43 -146.80 -148.91</div>					
Schnitt:		Anlage H1 Schnitt 8R		Seite Anlage H12	
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 Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>102.43 102.03 -148.91 -165.78</div> <div>102.03 101.44 -165.78 -191.10</div> <div>101.44 100.99 -191.10 -210.08</div> <div>100.99 100.45 -210.08 -233.29</div> <div>100.45 99.95 -233.29 -254.38</div> <div>99.95 80.00 -254.38 -1102.25</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>106.89 -12.8 -1.4 -0.3</div><div>106.45 -23.8 -5.7 -1.6</div><div>106.31 -27.8 -8.1 -2.6</div><div>106.00 -36.8 -14.3 -6.0</div><div>105.50 -43.5 -13.7 -14.1</div><div>105.45 -43.6 -12.3 -14.7</div><div>105.35 -43.5 -8.7 -15.8</div><div>105.00 -46.9 -5.8 -18.2</div><div>104.45 -53.0 -6.0 -21.3</div><div>103.44 -66.2 -18.3 -32.3</div><div>102.48 -81.2 -43.9 -61.0</div><div>102.43 -82.0 -45.0 -63.2</div><div>102.03 -65.8 1.4 -71.4</div><div>101.44 -52.3 42.3 -56.7</div><div>100.99 -50.5 51.0 -35.2</div><div>100.45 -57.6 36.6 -10.0</div><div>99.95 -63.8 0.0 0.0</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>106.89 -11.1 -1.2 -0.2</div><div>106.45 -20.7 -5.0 -1.4</div><div>106.31 -24.2 -7.1 -2.3</div><div>106.00 -32.0 -12.4 -5.3</div><div>105.50 -37.9 -12.0 -12.2</div><div>105.45 -37.9 -10.7 -12.8</div><div>105.35 -37.9 -7.6 -13.7</div><div>105.00 -40.8 -5.1 -15.9</div><div>104.45 -46.1 -5.3 -18.6</div><div>103.44 -57.6 -15.9 -28.1</div><div>102.48 -70.7 -38.0 -53.0</div><div>102.43 -71.3 -38.9 -54.9</div><div>102.03 -57.2 1.2 -61.9</div><div>101.44 -45.5 36.7 -49.2</div><div>100.99 -43.9 44.2 -30.5</div><div>100.45 -50.1 31.8 -8.7</div><div>99.95 -55.5 0.0 0.0</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>106.89 -11.1 -1.2 -0.2</div><div>106.45 -20.7 -5.0 -1.4</div><div>106.31 -24.2 -7.1 -2.3</div><div>106.00 -32.0 -12.4 -5.3</div><div>105.50 -37.9 -12.0 -12.2</div><div>105.45 -37.9 -10.7 -12.8</div><div>105.35 -37.9 -7.6 -13.7</div><div>105.00 -40.8 -5.1 -15.9</div><div>104.45 -46.1 -5.3 -18.6</div><div>103.44 -57.6 -15.9 -28.1</div><div>102.48 -70.7 -38.0 -53.0</div><div>102.43 -71.3 -38.9 -54.9</div><div>102.03 -57.2 1.2 -61.9</div><div>101.44 -45.5 36.7 -49.2</div><div>100.99 -43.9 44.2 -30.5</div><div>100.45 -50.1 31.8 -8.7</div></div>		
Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 113
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>99.95   -55.5   0.0   0.0</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>106.31</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>105.35</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>102.48</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>102.03</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>100.99</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>99.95</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table> <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>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-10.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.36</td><td>-9.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.26</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-9.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-9.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-9.2</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-8.5</td><td>5.06</td><td>42.79</td><td>42.79</td></tr><tr><td>105.50</td><td>-8.4</td><td>5.06</td><td>42.34</td><td>47.55</td></tr><tr><td>105.50</td><td>-8.4</td><td>5.69</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-8.3</td><td>5.69</td><td>47.04</td><td>52.30</td></tr><tr><td>105.45</td><td>-8.3</td><td>6.32</td><td>52.30</td><td>52.30</td></tr><tr><td>105.40</td><td>-8.2</td><td>6.32</td><td>51.74</td><td>57.06</td></tr><tr><td>105.40</td><td>-8.2</td><td>6.97</td><td>57.06</td><td>57.06</td></tr><tr><td>105.35</td><td>-8.1</td><td>6.97</td><td>56.44</td><td>61.81</td></tr><tr><td>105.35</td><td>-8.1</td><td>5.00</td><td>40.48</td><td>49.20</td></tr><tr><td>105.30</td><td>-8.0</td><td>5.00</td><td>40.04</td><td>51.78</td></tr><tr><td>105.05</td><td>-7.6</td><td>5.00</td><td>37.82</td><td>64.67</td></tr><tr><td>105.00</td><td>-7.5</td><td>5.00</td><td>37.38</td><td>67.25</td></tr><tr><td>105.00</td><td>-7.5</td><td>5.00</td><td>37.38</td><td>67.25</td></tr><tr><td>104.95</td><td>-7.4</td><td>5.00</td><td>36.93</td><td>68.55</td></tr><tr><td>104.50</td><td>-6.6</td><td>5.00</td><td>32.94</td><td>80.24</td></tr><tr><td>104.45</td><td>-6.5</td><td>5.00</td><td>32.50</td><td>81.54</td></tr><tr><td>104.45</td><td>-6.5</td><td>5.00</td><td>32.50</td><td>81.54</td></tr><tr><td>104.40</td><td>-6.4</td><td>5.00</td><td>32.06</td><td>82.84</td></tr><tr><td>103.49</td><td>-4.8</td><td>5.00</td><td>24.20</td><td>106.23</td></tr><tr><td>103.44</td><td>-4.8</td><td>5.00</td><td>23.77</td><td>107.53</td></tr><tr><td>103.44</td><td>-4.8</td><td>5.00</td><td>23.77</td><td>107.53</td></tr><tr><td>103.39</td><td>-4.7</td><td>5.00</td><td>23.34</td><td>108.83</td></tr><tr><td>102.53</td><td>-3.2</td><td>5.00</td><td>16.12</td><td>130.93</td></tr><tr><td>102.48</td><td>-3.1</td><td>5.00</td><td>15.70</td><td>132.23</td></tr><tr><td>102.48</td><td>-3.1</td><td>5.00</td><td>15.70</td><td>238.55</td></tr></table>			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	106.31	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	105.35	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	102.48	0.0	0.0	0.0	102.43	0.0	0.0	0.0	102.03	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.99	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-11.8	-	-	-	107.40	-11.8	-	-	-	106.95	-11.0	-	-	-	106.89	-10.8	-	-	-	106.89	-10.8	-	-	-	106.84	-10.8	-	-	-	106.50	-10.1	-	-	-	106.45	-10.1	-	-	-	106.45	-10.1	-	-	-	106.40	-10.0	-	-	-	106.36	-9.9	-	-	-	106.31	-9.8	-	-	-	106.31	-9.8	-	-	-	106.26	-9.7	-	-	-	106.05	-9.3	-	-	-	106.00	-9.3	0.00	0.00	0.00	106.00	-9.3	0.00	0.00	0.00	105.95	-9.2	0.00	0.00	4.75	105.55	-8.5	5.06	42.79	42.79	105.50	-8.4	5.06	42.34	47.55	105.50	-8.4	5.69	47.55	47.55	105.45	-8.3	5.69	47.04	52.30	105.45	-8.3	6.32	52.30	52.30	105.40	-8.2	6.32	51.74	57.06	105.40	-8.2	6.97	57.06	57.06	105.35	-8.1	6.97	56.44	61.81	105.35	-8.1	5.00	40.48	49.20	105.30	-8.0	5.00	40.04	51.78	105.05	-7.6	5.00	37.82	64.67	105.00	-7.5	5.00	37.38	67.25	105.00	-7.5	5.00	37.38	67.25	104.95	-7.4	5.00	36.93	68.55	104.50	-6.6	5.00	32.94	80.24	104.45	-6.5	5.00	32.50	81.54	104.45	-6.5	5.00	32.50	81.54	104.40	-6.4	5.00	32.06	82.84	103.49	-4.8	5.00	24.20	106.23	103.44	-4.8	5.00	23.77	107.53	103.44	-4.8	5.00	23.77	107.53	103.39	-4.7	5.00	23.34	108.83	102.53	-3.2	5.00	16.12	130.93	102.48	-3.1	5.00	15.70	132.23	102.48	-3.1	5.00	15.70	238.55
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Auftraggeber: Stadtverwaltung Leipzig																																																																																																																											
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																									
<table><tr><td>102.43</td><td>-3.1</td><td>5.00</td><td>15.29</td><td>241.98</td></tr><tr><td>102.43</td><td>-3.1</td><td>50.00</td><td>152.94</td><td>241.98</td></tr><tr><td>102.38</td><td>-3.0</td><td>50.00</td><td>148.86</td><td>245.40</td></tr><tr><td>102.08</td><td>-2.5</td><td>50.00</td><td>124.66</td><td>265.97</td></tr><tr><td>102.03</td><td>-2.4</td><td>50.00</td><td>120.67</td><td>269.40</td></tr><tr><td>102.03</td><td>-2.4</td><td>50.00</td><td>120.67</td><td>269.40</td></tr><tr><td>101.98</td><td>-2.3</td><td>50.00</td><td>116.70</td><td>272.83</td></tr><tr><td>101.49</td><td>-1.6</td><td>50.00</td><td>77.63</td><td>307.11</td></tr><tr><td>101.44</td><td>-1.5</td><td>50.00</td><td>73.78</td><td>310.53</td></tr><tr><td>101.44</td><td>-1.5</td><td>50.00</td><td>73.78</td><td>310.53</td></tr><tr><td>101.39</td><td>-1.4</td><td>50.00</td><td>69.95</td><td>313.96</td></tr><tr><td>101.04</td><td>-0.9</td><td>50.00</td><td>43.37</td><td>337.96</td></tr><tr><td>100.99</td><td>-0.8</td><td>50.00</td><td>39.60</td><td>341.39</td></tr><tr><td>100.99</td><td>-0.8</td><td>50.00</td><td>39.60</td><td>341.39</td></tr><tr><td>100.94</td><td>-0.7</td><td>50.00</td><td>35.84</td><td>344.81</td></tr><tr><td>100.49</td><td>0.0</td><td>50.00</td><td>2.22</td><td>375.67</td></tr><tr><td>100.45</td><td>0.0</td><td>50.00</td><td>-1.50</td><td>379.09</td></tr><tr><td>100.45</td><td>0.0</td><td>50.00</td><td>-1.50</td><td>379.09</td></tr><tr><td>100.40</td><td>0.1</td><td>50.00</td><td>-5.22</td><td>382.52</td></tr><tr><td>100.00</td><td>0.7</td><td>50.00</td><td>-34.93</td><td>409.94</td></tr><tr><td>99.95</td><td>0.8</td><td>50.00</td><td>-38.64</td><td>413.37</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08571928 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 141.92 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 35.19 kN/m (Eah,k = 210.75 kN/m) Bv,k = 87.28 Summe V,k = 89.83 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 100.83 bis 97.31 m) ==&gt; 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>105.35</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</td></tr><tr><td>102.48</td><td>99.95</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 139.15 / 1.40 = 99.39 kN/m Rd = Rb,d + Rs1,d = 964.44 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 170.31 - 0.00 + 40.47 + 0.00 = 210.78 kN/m ==&gt; µ = V,d / Rd = 210.78 / 964.44 = 0.22</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.43	-3.1	5.00	15.29	241.98	102.43	-3.1	50.00	152.94	241.98	102.38	-3.0	50.00	148.86	245.40	102.08	-2.5	50.00	124.66	265.97	102.03	-2.4	50.00	120.67	269.40	102.03	-2.4	50.00	120.67	269.40	101.98	-2.3	50.00	116.70	272.83	101.49	-1.6	50.00	77.63	307.11	101.44	-1.5	50.00	73.78	310.53	101.44	-1.5	50.00	73.78	310.53	101.39	-1.4	50.00	69.95	313.96	101.04	-0.9	50.00	43.37	337.96	100.99	-0.8	50.00	39.60	341.39	100.99	-0.8	50.00	39.60	341.39	100.94	-0.7	50.00	35.84	344.81	100.49	0.0	50.00	2.22	375.67	100.45	0.0	50.00	-1.50	379.09	100.45	0.0	50.00	-1.50	379.09	100.40	0.1	50.00	-5.22	382.52	100.00	0.7	50.00	-34.93	409.94	99.95	0.8	50.00	-38.64	413.37	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	99.95	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>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: 01_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 = 7.50 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 H1 Schnitt 8R		Seite Anlage H1/6
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

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<div>Ausnutzungsgrad <math>\mu_e = 341.777 / 531.978 = 0.642</math> Bettungslager <math>B_{h,d} = 341.777 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 531.978 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.35</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></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>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 (<math>[g+q],k</math>)</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>9.836</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>33.335</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>102.133</td><td>33.335</td><td>34.557</td><td>5.00</td><td>5.00</td></tr><tr><td>102.133</td><td>101.438</td><td>34.557</td><td>37.407</td><td>5.00</td><td>5.00</td></tr><tr><td>101.438</td><td>101.041</td><td>37.407</td><td>39.035</td><td>5.00</td><td>5.00</td></tr><tr><td>101.041</td><td>100.445</td><td>39.035</td><td>41.478</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.949</td><td>41.478</td><td>43.514</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>43.514</td><td>125.335</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> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></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>105.35</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></tbody></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	105.35	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	33.335	5.00	5.00	102.430	102.133	33.335	34.557	5.00	5.00	102.133	101.438	34.557	37.407	5.00	5.00	101.438	101.041	37.407	39.035	5.00	5.00	101.041	100.445	39.035	41.478	5.00	5.00	100.445	99.949	41.478	43.514	5.00	5.00	99.949	80.000	43.514	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	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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
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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Standssicherheit

Dipl.-Ing. A. Forner



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<div><div>99.95   -37.8   0.0   0.0</div><div>Schnittgrößen 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(q,k)</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>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>106.31</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>105.87</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>105.35</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.18</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>102.48</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>102.13</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>101.04</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>99.95</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</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>107.45</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.1</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>106.95</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.36</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr></table></div>			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	-10.4	-3.9	106.31	-26.6	-13.6	-5.6	106.00	-35.2	-21.3	-10.9	105.87	-37.8	-24.2	-13.9	105.50	-41.2	-24.3	-23.3	105.45	-41.3	-23.4	-24.5	105.35	-41.2	-20.8	-26.7	105.18	-42.0	-18.3	-30.0	105.00	-43.0	-15.9	-33.1	104.45	-46.6	-12.6	-40.8	103.44	-55.8	-19.5	-55.6	102.48	-67.4	-41.1	-83.4	102.43	-68.0	-42.0	-85.5	102.13	-52.8	-1.3	-91.7	101.44	-32.3	54.9	-70.0	101.04	-29.7	63.2	-46.0	100.45	-36.6	44.3	-12.1	99.95	-37.8	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	106.31	0.0	0.0	0.0	106.00	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	104.45	0.0	0.0	0.0	103.44	0.0	0.0	0.0	102.48	0.0	0.0	0.0	102.43	0.0	0.0	0.0	102.13	0.0	0.0	0.0	101.44	0.0	0.0	0.0	101.04	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-16.1	-	-	-	107.45	-16.1	-	-	-	107.45	-16.1	-	-	-	107.40	-15.9	-	-	-	106.95	-14.8	-	-	-	106.89	-14.7	-	-	-	106.89	-14.7	-	-	-	106.84	-14.5	-	-	-	106.50	-13.7	-	-	-	106.45	-13.6	-	-	-	106.45	-13.6	-	-	-	106.40	-13.4	-	-	-	106.36	-13.3	-	-	-	106.31	-13.2	-	-	-	106.31	-13.2	-	-	-
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<tr><td>105.45</td><td>-11.1</td><td>4.25</td><td>47.02</td><td>52.30</td></tr> <tr><td>105.45</td><td>-11.1</td><td>4.73</td><td>52.31</td><td>52.30</td></tr> <tr><td>105.40</td><td>-10.9</td><td>4.73</td><td>51.72</td><td>57.06</td></tr> <tr><td>105.40</td><td>-10.9</td><td>5.22</td><td>57.06</td><td>57.06</td></tr> <tr><td>105.35</td><td>-10.8</td><td>5.22</td><td>56.41</td><td>61.81</td></tr> <tr><td>105.35</td><td>-10.8</td><td>4.55</td><td>49.20</td><td>49.20</td></tr> <tr><td>105.29</td><td>-10.7</td><td>4.55</td><td>48.57</td><td>52.06</td></tr> <tr><td>105.24</td><td>-10.5</td><td>5.00</td><td>52.63</td><td>54.93</td></tr> <tr><td>105.18</td><td>-10.4</td><td>5.00</td><td>51.94</td><td>57.80</td></tr> <tr><td>105.18</td><td>-10.4</td><td>5.00</td><td>51.94</td><td>57.80</td></tr> <tr><td>105.14</td><td>-10.3</td><td>5.00</td><td>51.37</td><td>60.16</td></tr> <tr><td>105.05</td><td>-10.0</td><td>5.00</td><td>50.24</td><td>64.88</td></tr> <tr><td>105.00</td><td>-9.9</td><td>5.00</td><td>49.67</td><td>67.25</td></tr> <tr><td>105.00</td><td>-9.9</td><td>5.00</td><td>49.67</td><td>67.25</td></tr> <tr><td>104.95</td><td>-9.8</td><td>5.00</td><td>49.05</td><td>68.55</td></tr> <tr><td>104.50</td><td>-8.7</td><td>5.00</td><td>43.49</td><td>80.24</td></tr> <tr><td>104.45</td><td>-8.6</td><td>5.00</td><td>42.87</td><td>81.54</td></tr> <tr><td>104.45</td><td>-8.6</td><td>5.00</td><td>42.87</td><td>81.54</td></tr> <tr><td>104.40</td><td>-8.5</td><td>5.00</td><td>42.26</td><td>82.84</td></tr> <tr><td>103.49</td><td>-6.3</td><td>5.00</td><td>31.39</td><td>106.23</td></tr> <tr><td>103.44</td><td>-6.2</td><td>5.00</td><td>30.80</td><td>107.53</td></tr> <tr><td>103.44</td><td>-6.2</td><td>5.00</td><td>30.80</td><td>107.53</td></tr> <tr><td>103.39</td><td>-6.0</td><td>5.00</td><td>30.21</td><td>108.83</td></tr> <tr><td>102.53</td><td>-4.1</td><td>5.00</td><td>20.34</td><td>130.93</td></tr> <tr><td>102.48</td><td>-4.0</td><td>5.00</td><td>19.78</td><td>132.23</td></tr> <tr><td>102.48</td><td>-4.0</td><td>5.00</td><td>19.78</td><td>238.55</td></tr> <tr><td>102.43</td><td>-3.8</td><td>5.00</td><td>19.22</td><td>241.98</td></tr> <tr><td>102.43</td><td>-3.8</td><td>50.00</td><td>192.22</td><td>241.98</td></tr> <tr><td>102.38</td><td>-3.7</td><td>50.00</td><td>186.68</td><td>245.40</td></tr> <tr><td>102.18</td><td>-3.3</td><td>50.00</td><td>164.71</td><td>259.12</td></tr> <tr><td>102.13</td><td>-3.2</td><td>50.00</td><td>159.26</td><td>262.54</td></tr> <tr><td>102.13</td><td>-3.2</td><td>50.00</td><td>159.26</td><td>262.54</td></tr> <tr><td>102.08</td><td>-3.1</td><td>50.00</td><td>153.84</td><td>265.97</td></tr> <tr><td>101.49</td><td>-1.8</td><td>50.00</td><td>90.16</td><td>307.11</td></tr> <tr><td>101.44</td><td>-1.7</td><td>50.00</td><td>84.96</td><td>310.53</td></tr> <tr><td>101.44</td><td>-1.7</td><td>50.00</td><td>84.96</td><td>310.53</td></tr> <tr><td>101.39</td><td>-1.6</td><td>50.00</td><td>79.78</td><td>313.96</td></tr> <tr><td>101.09</td><td>-1.0</td><td>50.00</td><td>48.96</td><td>334.53</td></tr> <tr><td>101.04</td><td>-0.9</td><td>50.00</td><td>43.86</td><td>337.96</td></tr> <tr><td>101.04</td><td>-0.9</td><td>50.00</td><td>43.86</td><td>337.96</td></tr> <tr><td>100.99</td><td>-0.8</td><td>50.00</td><td>38.77</td><td>341.39</td></tr> <tr><td>100.49</td><td>0.2</td><td>50.00</td><td>-11.71</td><td>375.67</td></tr> <tr><td>100.45</td><td>0.3</td><td>50.00</td><td>-16.74</td><td>379.09</td></tr> <tr><td>100.45</td><td>0.3</td><td>50.00</td><td>-16.74</td><td>379.09</td></tr> <tr><td>100.40</td><td>0.4</td><td>50.00</td><td>-21.76</td><td>382.52</td></tr> <tr><td>100.00</td><td>1.2</td><td>50.00</td><td>-61.88</td><td>409.94</td></tr> <tr><td>99.95</td><td>1.3</td><td>50.00</td><td>-66.89</td><td>413.37</td></tr> </table> <p> Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.11573703  Theoretischer Fußpunkt = 99.949 m   Einbindetiefe <math>t_g</math> = 6.05 m  Profillänge = 7.50 m </p>					106.26	-13.1	-	-	-	106.05	-12.6	-	-	-	106.00	-12.4	0.00	0.00	0.00	106.00	-12.4	0.00	0.00	0.00	105.96	-12.3	0.00	0.00	4.07	105.91	-12.2	0.67	8.14	8.13	105.87	-12.1	0.67	8.06	12.20	105.87	-12.1	1.01	12.20	12.20	105.82	-12.0	1.01	12.07	17.25	105.55	-11.3	3.76	42.50	42.50	105.50	-11.2	3.76	42.00	47.55	105.50	-11.2	4.25	47.55	47.55	105.45	-11.1	4.25	47.02	52.30	105.45	-11.1	4.73	52.31	52.30	105.40	-10.9	4.73	51.72	57.06	105.40	-10.9	5.22	57.06	57.06	105.35	-10.8	5.22	56.41	61.81	105.35	-10.8	4.55	49.20	49.20	105.29	-10.7	4.55	48.57	52.06	105.24	-10.5	5.00	52.63	54.93	105.18	-10.4	5.00	51.94	57.80	105.18	-10.4	5.00	51.94	57.80	105.14	-10.3	5.00	51.37	60.16	105.05	-10.0	5.00	50.24	64.88	105.00	-9.9	5.00	49.67	67.25	105.00	-9.9	5.00	49.67	67.25	104.95	-9.8	5.00	49.05	68.55	104.50	-8.7	5.00	43.49	80.24	104.45	-8.6	5.00	42.87	81.54	104.45	-8.6	5.00	42.87	81.54	104.40	-8.5	5.00	42.26	82.84	103.49	-6.3	5.00	31.39	106.23	103.44	-6.2	5.00	30.80	107.53	103.44	-6.2	5.00	30.80	107.53	103.39	-6.0	5.00	30.21	108.83	102.53	-4.1	5.00	20.34	130.93	102.48	-4.0	5.00	19.78	132.23	102.48	-4.0	5.00	19.78	238.55	102.43	-3.8	5.00	19.22	241.98	102.43	-3.8	50.00	192.22	241.98	102.38	-3.7	50.00	186.68	245.40	102.18	-3.3	50.00	164.71	259.12	102.13	-3.2	50.00	159.26	262.54	102.13	-3.2	50.00	159.26	262.54	102.08	-3.1	50.00	153.84	265.97	101.49	-1.8	50.00	90.16	307.11	101.44	-1.7	50.00	84.96	310.53	101.44	-1.7	50.00	84.96	310.53	101.39	-1.6	50.00	79.78	313.96	101.09	-1.0	50.00	48.96	334.53	101.04	-0.9	50.00	43.86	337.96	101.04	-0.9	50.00	43.86	337.96	100.99	-0.8	50.00	38.77	341.39	100.49	0.2	50.00	-11.71	375.67	100.45	0.3	50.00	-16.74	379.09	100.45	0.3	50.00	-16.74	379.09	100.40	0.4	50.00	-21.76	382.52	100.00	1.2	50.00	-61.88	409.94	99.95	1.3	50.00	-66.89	413.37
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102.38	-3.7	50.00	186.68	245.40																																																																																																																																																																																																																																																																																																							
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Auftraggeber: Stadtverwaltung Leipzig		-																
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V  Nachweis des mobilisierten Erdwiderstands  Bedingung: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{s,k} = 141.92 \text{ kN/m}</math>  <math>G'_{s,k} = 0.00 \text{ kN/m}</math>  <math>P_{v,k} = 0.00 \text{ kN/m}</math>  <math>E_{av,k} = 41.32 \text{ kN/m}</math> (<math>E_{ah,k} = 247.41 \text{ kN/m}</math>)  <math>B_{v,k} = 103.52</math>  Summe <math>V_{s,k} = 79.73 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit  (Erfahrungswerte nach EA Pfähle)  Verfahren 2: EAU Bild E 4-3 (rechts)  Bohrpfahlwand <math>D = 0.88 \text{ m}</math>  Verhältniswert (min, max) = 0.00  Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math>  (gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math>  <math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>106.00</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</td> </tr> <tr> <td>102.48</td> <td>99.95</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 139.15 / 1.40 = 99.39 \text{ kN/m}</math>  <math>R_{d} = R_{b,d} + R_{s1,d} = 964.44 \text{ kN/m}</math></p> <p>Einwirkungen  <math>V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 47.52 + 0.00 = 217.83 \text{ kN/m}</math>  <math>\Rightarrow \mu = V_{s,d} / R_{d} = 217.83 / 964.44 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.35	0.00	S1: Auffüllungen	105.35	102.48	0.00	S2: Auelehm	102.48	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.35	0.00	S1: Auffüllungen															
105.35	102.48	0.00	S2: Auelehm															
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Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 11111																
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 8 Datei: 02_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.50 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 <math>\mu_e = 233.550 / 236.205 = 0.989</math> Bettungslager <math>B_{h,d} = 233.550</math> kN/m Erdwiderstand <math>E_{ph,d} = 236.205</math> 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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Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/12																																											
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: Standsicherheit																																											
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<div>Anker und Steifen</div> <div>N<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-99.06</td><td>-85.79</td><td>-85.79</td><td>-8.23</td><td>6.900E+4</td><td>2.100E+7</td><td>-109.38</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-12.6</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.7</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.0</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.2</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.5</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-99.06</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.0</td><td>0.0</td><td>-99.06</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\00_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>-0.0110</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>a,k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>104.400</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>22.263</td><td>22.263</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-99.06	-85.79	-85.79	-8.23	6.900E+4	2.100E+7	-109.38	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-12.6	0.0	-99.06	0.00	0.00	-0.90	106.95	-12.7	0.0	-99.06	0.00	0.00	-0.90	106.95	-12.7	0.0	-99.06	0.00	0.00	-0.80	106.95	-12.9	0.0	-99.06	0.00	0.00	-0.70	106.95	-13.0	0.0	-99.06	0.00	0.00	-0.60	106.95	-13.2	0.0	-99.06	0.00	0.00	-0.50	106.95	-13.3	0.0	-99.06	0.00	0.00	-0.40	106.95	-13.5	0.0	-99.06	0.00	0.00	-0.30	106.95	-13.6	0.0	-99.06	0.00	0.00	-0.20	106.95	-13.7	0.0	-99.06	0.00	0.00	-0.10	106.95	-13.9	0.0	-99.06	0.00	0.00	0.00	106.95	-14.0	0.0	-99.06	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0110	Schicht	UK	γ <sub>m,k</sub>	γ <sub>a,k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	104.400	22.263	22.263	5.00	5.00	104.400	104.300	22.263	22.263	5.00	5.00	104.300	103.400	22.263	22.263	5.00	5.00	Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/13	
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																																							
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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>102.550</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>32.217</td><td>5.00</td><td>5.00</td></tr><tr><td>101.833</td><td>101.436</td><td>32.217</td><td>33.849</td><td>5.00</td><td>5.00</td></tr><tr><td>101.436</td><td>100.441</td><td>33.849</td><td>37.929</td><td>5.00</td><td>5.00</td></tr><tr><td>100.441</td><td>99.446</td><td>37.929</td><td>42.009</td><td>5.00</td><td>5.00</td></tr><tr><td>99.446</td><td>98.949</td><td>42.009</td><td>44.049</td><td>5.00</td><td>5.00</td></tr><tr><td>98.949</td><td>80.000</td><td>44.049</td><td>121.769</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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>-4.31</td></tr><tr><td>102.43</td><td>101.83</td><td>-4.31</td><td>-29.68</td></tr><tr><td>101.83</td><td>101.44</td><td>-29.68</td><td>-46.59</td></tr><tr><td>101.44</td><td>100.44</td><td>-46.59</td><td>-88.87</td></tr><tr><td>100.44</td><td>99.45</td><td>-88.87</td><td>-131.15</td></tr><tr><td>99.45</td><td>98.95</td><td>-131.15</td><td>-152.29</td></tr><tr><td>98.95</td><td>80.00</td><td>-152.29</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>-99.1</td></tr><tr><td>106.95</td><td>-16.5</td><td>83.7</td><td>-3.8</td><td></td></tr><tr><td>106.89</td><td>-18.6</td><td>81.7</td><td>1.5</td><td></td></tr><tr><td>106.45</td><td>-32.9</td><td>68.3</td><td>34.2</td><td></td></tr><tr><td>106.31</td><td>-37.6</td><td>64.0</td><td>43.6</td><td></td></tr><tr><td>105.50</td><td>-64.3</td><td>39.2</td><td>85.2</td><td></td></tr><tr><td>105.45</td><td>-65.9</td><td>37.6</td><td>87.2</td><td></td></tr><tr><td>105.35</td><td>-69.2</td><td>34.4</td><td>90.8</td><td></td></tr><tr><td>105.00</td><td>-79.7</td><td>22.3</td><td>100.7</td><td></td></tr><tr><td>104.40</td><td>-96.9</td><td>3.3</td><td>108.4</td><td></td></tr><tr><td>104.30</td><td>-99.7</td><td>0.2</td><td>108.6</td><td></td></tr><tr><td>103.40</td><td>-125.5</td><td>-28.3</td><td>95.9</td><td></td></tr><tr><td>102.55</td><td>-149.8</td><td>-55.1</td><td>60.5</td><td></td></tr><tr><td>102.48</td><td>-151.8</td><td>-58.7</td><td>56.5</td><td></td></tr><tr><td>102.43</td><td>-152.8</td><td>-60.5</td><td>53.5</td><td></td></tr><tr><td>101.83</td><td>-158.8</td><td>-67.7</td><td>14.0</td><td></td></tr><tr><td>101.44</td><td>-156.6</td><td>-57.9</td><td>-11.4</td><td></td></tr><tr><td>100.44</td><td>-131.8</td><td>12.4</td><td>-37.8</td><td></td></tr><tr><td>99.45</td><td>-126.3</td><td>29.6</td><td>-8.4</td><td></td></tr><tr><td>98.95</td><td>-134.6</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	32.217	5.00	5.00	101.833	101.436	32.217	33.849	5.00	5.00	101.436	100.441	33.849	37.929	5.00	5.00	100.441	99.446	37.929	42.009	5.00	5.00	99.446	98.949	42.009	44.049	5.00	5.00	98.949	80.000	44.049	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	-4.31	102.43	101.83	-4.31	-29.68	101.83	101.44	-29.68	-46.59	101.44	100.44	-46.59	-88.87	100.44	99.45	-88.87	-131.15	99.45	98.95	-131.15	-152.29	98.95	80.00	-152.29	-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	-99.1	106.95	-16.5	83.7	-3.8		106.89	-18.6	81.7	1.5		106.45	-32.9	68.3	34.2		106.31	-37.6	64.0	43.6		105.50	-64.3	39.2	85.2		105.45	-65.9	37.6	87.2		105.35	-69.2	34.4	90.8		105.00	-79.7	22.3	100.7		104.40	-96.9	3.3	108.4		104.30	-99.7	0.2	108.6		103.40	-125.5	-28.3	95.9		102.55	-149.8	-55.1	60.5		102.48	-151.8	-58.7	56.5		102.43	-152.8	-60.5	53.5		101.83	-158.8	-67.7	14.0		101.44	-156.6	-57.9	-11.4		100.44	-131.8	12.4	-37.8		99.45	-126.3	29.6	-8.4		98.95	-134.6	0.0	0.0	
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Statisch geprüft  
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Standsticherheit  
Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																										
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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>99.450.000.000.0</div><div>98.950.000.000.0</div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div>Tiefewks<sub>sig,Bh,k</sub><sub>eph,k</sub></div><div>[m][mm][kN/m³][kN/m²][kN/m²]</div><div><div>107.45-12.8-0.000.000.00</div><div>107.40-12.8-0.000.0011.73</div><div>107.00-12.3-0.000.0013.54</div><div>106.95-12.2-0.633.573.57</div><div>106.95-12.2-0.633.527.01</div><div>106.89-12.1-0.637.017.01</div><div>106.89-12.1-1.266.9010.44</div><div>106.84-12.1-9.7144.8044.79</div><div>106.50-11.6-9.7143.9348.23</div><div>106.45-11.6-10.6648.2348.23</div><div>106.45-11.6-10.6647.2851.66</div><div>106.40-11.5-3.918.5372.2872.27</div><div>106.36-11.5-3.818.5370.6375.71</div><div>106.31-11.4-3.819.8675.7175.71</div><div>106.31-11.4-3.719.8673.9579.14</div><div>106.26-11.3-2.150.00107.10140.98</div><div>105.55-10.4-2.150.00102.77144.41</div><div>105.50-10.4-2.150.00102.77144.41</div><div>105.45-10.3-2.050.0098.44147.85</div><div>105.45-10.3-0.450.0021.54209.68</div><div>105.40-10.2-0.350.0017.30213.11</div></div></div></div></div>					
Schnitt:		Anlage H1 Schnitt 8R		Seite Anlage H1/16	
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1116	
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>99.45-0.350.0017.30213.11</div><div>99.40-0.350.0013.06216.55</div><div>99.000.450.00-20.81244.03</div><div>98.950.550.00-25.04247.46</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.09751336</div><div>Theoretischer Fußpunkt = 98.949 m</div><div>Einbindetiefe tg = 3.60 m</div><div>Profillänge = 8.50 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k</div><div>G',k = 160.84 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 43.54 kN/m (Eah,k = 252.75 kN/m)</div><div>Bv,k = 80.36</div><div>Summe V,k = 124.03 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 99.83 bis 96.31 m) ==&gt; 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>102.48</td><td>0.00</td><td>S2: Auelehm</td></tr><tr><td>102.48</td><td>98.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.95 m = 1.000 m²/m/m ==&gt; Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 194.15 / 1.40 = 138.68 kN/m</div><div>Rd = Rb,d + Rs1,d = 1003.73 kN/m</div><div>Einwirkungen</div><div>Vd = Gd - G',k + Eav,d + Pv,d = 193.01 - 0.00 + 50.07 + 0.00 = 243.08 kN/m</div><div>==&gt; mu = Vd / Rd = 243.08 / 1003.73 = 0.24</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.48	0.00	S2: Auelehm	102.48	98.95	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.48	0.00	S2: Auelehm											
102.48	98.95	55.00	s3: Flussskies, -sand											
Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H117												
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
<div>4    <b>LF 2.2 (BS-T, mit Lasten)</b></div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 8 Datei: 03_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 = 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   1.55   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] [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>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.75 m</div> <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</div>		
Schnitt:    Anlage H1    Schnitt 8R		Seite Anlage H1/18
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>Ausnutzungsgrad <math>\mu_{ue} = 272.461 / 272.949 = 0.998</math> Bettungslager <math>B_{h,d} = 272.461 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 272.949 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_d</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-121.73</td><td>-105.48</td><td>-105.48</td><td>-8.40</td><td>6.900E+4</td><td>2.100E+7</td><td>-134.49</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_d</math></th><th><math>Q_d</math></th><th><math>M_d</math></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>-12.6</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-12.8</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-12.9</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.1</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.5</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-13.8</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-14.0</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-14.2</td><td>0.0</td><td>-121.73</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.4</td><td>0.1</td><td>-121.73</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\00_BS 8_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>-0.0110</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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	-121.73	-105.48	-105.48	-8.40	6.900E+4	2.100E+7	-134.49	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	-12.6	0.0	-121.73	0.00	0.00	-0.90	106.95	-12.8	0.0	-121.73	0.00	0.00	-0.90	106.95	-12.8	0.0	-121.73	0.00	0.00	-0.80	106.95	-12.9	0.0	-121.73	0.00	0.00	-0.70	106.95	-13.1	0.0	-121.73	0.00	0.00	-0.60	106.95	-13.3	0.0	-121.73	0.00	0.00	-0.50	106.95	-13.5	0.0	-121.73	0.00	0.00	-0.40	106.95	-13.7	0.0	-121.73	0.00	0.00	-0.30	106.95	-13.8	0.0	-121.73	0.00	0.00	-0.20	106.95	-14.0	0.0	-121.73	0.00	0.00	-0.10	106.95	-14.2	0.0	-121.73	0.00	0.00	0.00	106.95	-14.4	0.1	-121.73	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	106.95	-0.0110	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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>
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>105.500</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>104.250</td><td>27.324</td><td>27.324</td><td>5.00</td><td>5.00</td></tr><tr><td>104.250</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>35.785</td><td>5.00</td><td>5.00</td></tr><tr><td>101.833</td><td>101.435</td><td>35.785</td><td>37.417</td><td>5.00</td><td>5.00</td></tr><tr><td>101.435</td><td>100.440</td><td>37.417</td><td>41.499</td><td>5.00</td><td>5.00</td></tr><tr><td>100.440</td><td>99.445</td><td>41.499</td><td>45.580</td><td>5.00</td><td>5.00</td></tr><tr><td>99.445</td><td>98.699</td><td>45.580</td><td>48.641</td><td>5.00</td><td>5.00</td></tr><tr><td>98.699</td><td>80.000</td><td>48.641</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>-4.31</td></tr><tr><td>102.43</td><td>101.83</td><td>-4.31</td><td>-29.69</td></tr><tr><td>101.83</td><td>101.44</td><td>-29.69</td><td>-46.61</td></tr><tr><td>101.44</td><td>100.44</td><td>-46.61</td><td>-88.90</td></tr><tr><td>100.44</td><td>99.45</td><td>-88.90</td><td>-131.19</td></tr><tr><td>99.45</td><td>98.70</td><td>-131.19</td><td>-162.91</td></tr><tr><td>98.70</td><td>80.00</td><td>-162.91</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>-121.7</td></tr><tr><td>106.95</td><td>-17.7</td><td>102.9</td><td>-4.7</td><td></td></tr><tr><td>106.89</td><td>-20.0</td><td>100.5</td><td>1.8</td><td></td></tr><tr><td>106.45</td><td>-35.5</td><td>84.0</td><td>42.0</td><td></td></tr><tr><td>106.31</td><td>-40.5</td><td>78.7</td><td>53.6</td><td></td></tr><tr><td>105.87</td><td>-56.0</td><td>62.2</td><td>84.3</td><td></td></tr><tr><td>105.50</td><td>-69.2</td><td>48.2</td><td>104.8</td><td></td></tr><tr><td>105.45</td><td>-71.0</td><td>46.3</td><td>107.2</td><td></td></tr><tr><td>105.35</td><td>-74.5</td><td>42.4</td><td>111.6</td><td></td></tr><tr><td>105.18</td><td>-79.8</td><td>35.6</td><td>118.1</td><td></td></tr><tr><td>105.00</td><td>-85.7</td><td>27.8</td><td>123.9</td><td></td></tr><tr><td>104.40</td><td>-103.8</td><td>5.4</td><td>133.9</td><td></td></tr><tr><td>104.25</td><td>-108.3</td><td>-0.2</td><td>134.3</td><td></td></tr><tr><td>103.40</td><td>-134.0</td><td>-32.0</td><td>120.6</td><td></td></tr><tr><td>102.55</td><td>-159.6</td><td>-63.8</td><td>79.8</td><td></td></tr><tr><td>102.48</td><td>-161.8</td><td>-67.9</td><td>75.2</td><td></td></tr><tr><td>102.43</td><td>-162.8</td><td>-69.9</td><td>71.8</td><td></td></tr><tr><td>101.83</td><td>-168.8</td><td>-79.5</td><td>25.9</td><td></td></tr><tr><td>101.44</td><td>-166.6</td><td>-71.2</td><td>-4.5</td><td></td></tr><tr><td>100.44</td><td>-139.9</td><td>-0.4</td><td>-45.7</td><td></td></tr><tr><td>99.45</td><td>-124.0</td><td>38.6</td><td>-18.0</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	104.250	27.324	27.324	5.00	5.00	104.250	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	35.785	5.00	5.00	101.833	101.435	35.785	37.417	5.00	5.00	101.435	100.440	37.417	41.499	5.00	5.00	100.440	99.445	41.499	45.580	5.00	5.00	99.445	98.699	45.580	48.641	5.00	5.00	98.699	80.000	48.641	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	-4.31	102.43	101.83	-4.31	-29.69	101.83	101.44	-29.69	-46.61	101.44	100.44	-46.61	-88.90	100.44	99.45	-88.90	-131.19	99.45	98.70	-131.19	-162.91	98.70	80.00	-162.91	-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	-121.7	106.95	-17.7	102.9	-4.7		106.89	-20.0	100.5	1.8		106.45	-35.5	84.0	42.0		106.31	-40.5	78.7	53.6		105.87	-56.0	62.2	84.3		105.50	-69.2	48.2	104.8		105.45	-71.0	46.3	107.2		105.35	-74.5	42.4	111.6		105.18	-79.8	35.6	118.1		105.00	-85.7	27.8	123.9		104.40	-103.8	5.4	133.9		104.25	-108.3	-0.2	134.3		103.40	-134.0	-32.0	120.6		102.55	-159.6	-63.8	79.8		102.48	-161.8	-67.9	75.2		102.43	-162.8	-69.9	71.8		101.83	-168.8	-79.5	25.9		101.44	-166.6	-71.2	-4.5		100.44	-139.9	-0.4	-45.7		99.45	-124.0	38.6	-18.0	
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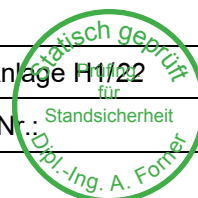
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<table><tr><td>Tiefe</td><td>w</td><td>ks</td><td>sig,Bh,k</td><td>eph,k</td></tr><tr><td>[m]</td><td>[mm]</td><td>[kN/m³]</td><td>[kN/m²]</td><td>[kN/m²]</td></tr><tr><td>107.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.0</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>107.00</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-12.4</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>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.36</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.31</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.26</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.91</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.87</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.87</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.82</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>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.8</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>105.45</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.18</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.14</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</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><tr><td>102.60</td><td>-6.4</td><td>-</td><td>-</td><td>-</td></tr></table>						105.18	0.0	0.0	0.0	105.00	0.0	0.0	0.0	104.40	0.0	0.0	0.0	104.25	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	101.44	0.0	0.0	0.0	100.44	0.0	0.0	0.0	99.45	0.0	0.0	0.0	98.70	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-13.0	-	-	-	107.45	-13.0	-	-	-	107.45	-13.0	-	-	-	107.40	-13.0	-	-	-	107.00	-12.5	-	-	-	106.95	-12.5	-	-	-	106.95	-12.5	-	-	-	106.89	-12.4	-	-	-	106.89	-12.4	-	-	-	106.84	-12.4	-	-	-	106.50	-12.0	-	-	-	106.45	-11.9	-	-	-	106.45	-11.9	-	-	-	106.40	-11.9	-	-	-	106.36	-11.8	-	-	-	106.31	-11.8	-	-	-	106.31	-11.8	-	-	-	106.26	-11.7	-	-	-	105.91	-11.3	-	-	-	105.87	-11.2	-	-	-	105.87	-11.2	-	-	-	105.82	-11.2	-	-	-	105.55	-10.9	-	-	-	105.50	-10.8	-	-	-	105.50	-10.8	-	-	-	105.45	-10.7	-	-	-	105.45	-10.7	-	-	-	105.40	-10.7	-	-	-	105.40	-10.7	-	-	-	105.35	-10.6	-	-	-	105.35	-10.6	-	-	-	105.29	-10.5	-	-	-	105.24	-10.5	-	-	-	105.18	-10.4	-	-	-	105.18	-10.4	-	-	-	105.14	-10.3	-	-	-	105.05	-10.2	-	-	-	105.00	-10.2	-	-	-	105.00	-10.2	-	-	-	104.95	-10.1	-	-	-	104.45	-9.4	-	-	-	104.40	-9.3	-	-	-	104.40	-9.3	-	-	-	104.35	-9.2	-	-	-	104.30	-9.2	-	-	-	104.25	-9.1	-	-	-	104.25	-9.1	-	-	-	104.20	-9.0	-	-	-	103.45	-7.9	-	-	-	103.4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<table><tr><td>102.55</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.3</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.48</td><td>-6.2</td><td>0.00</td><td>0.00</td><td>13.54</td></tr><tr><td>102.48</td><td>-6.2</td><td>0.58</td><td>3.57</td><td>3.57</td></tr><tr><td>102.43</td><td>-6.1</td><td>0.58</td><td>3.52</td><td>7.01</td></tr><tr><td>102.43</td><td>-6.1</td><td>1.15</td><td>7.01</td><td>7.01</td></tr><tr><td>102.38</td><td>-6.0</td><td>1.15</td><td>6.91</td><td>10.45</td></tr><tr><td>101.88</td><td>-5.1</td><td>8.73</td><td>44.81</td><td>44.81</td></tr><tr><td>101.83</td><td>-5.0</td><td>8.73</td><td>44.02</td><td>48.24</td></tr><tr><td>101.83</td><td>-5.0</td><td>9.56</td><td>48.25</td><td>48.24</td></tr><tr><td>101.78</td><td>-5.0</td><td>9.56</td><td>47.38</td><td>51.68</td></tr><tr><td>101.48</td><td>-4.4</td><td>16.39</td><td>72.30</td><td>72.30</td></tr><tr><td>101.44</td><td>-4.3</td><td>16.39</td><td>70.81</td><td>75.74</td></tr><tr><td>101.44</td><td>-4.3</td><td>17.53</td><td>75.74</td><td>75.74</td></tr><tr><td>101.39</td><td>-4.2</td><td>17.53</td><td>74.15</td><td>79.17</td></tr><tr><td>100.49</td><td>-2.6</td><td>50.00</td><td>130.56</td><td>141.02</td></tr><tr><td>100.44</td><td>-2.5</td><td>50.00</td><td>126.13</td><td>144.46</td></tr><tr><td>100.44</td><td>-2.5</td><td>50.00</td><td>126.13</td><td>144.46</td></tr><tr><td>100.39</td><td>-2.4</td><td>50.00</td><td>121.72</td><td>147.90</td></tr><tr><td>99.49</td><td>-0.9</td><td>50.00</td><td>43.45</td><td>209.75</td></tr><tr><td>99.45</td><td>-0.8</td><td>50.00</td><td>39.15</td><td>213.19</td></tr><tr><td>99.45</td><td>-0.8</td><td>50.00</td><td>39.15</td><td>213.19</td></tr><tr><td>99.40</td><td>-0.7</td><td>50.00</td><td>34.86</td><td>216.62</td></tr><tr><td>98.75</td><td>0.4</td><td>50.00</td><td>-20.78</td><td>261.29</td></tr><tr><td>98.70</td><td>0.5</td><td>50.00</td><td>-25.06</td><td>264.73</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09847934 Theoretischer Fußpunkt = 98.699 m</p> <p>Einbindetiefe tg = 3.85 m Profillänge = 8.75 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 165.58 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 52.77 kN/m (Eah,k = 305.01 kN/m) Bv,k = 93.78 Summe V,k = 124.56 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 99.58 bis 96.06 m) ==&gt; 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</td></tr><tr><td>102.48</td><td>98.70</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 98.70 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 207.90 / 1.40 = 148.50 kN/m Rd = Rb,d + Rs1,d = 1013.55 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 198.69 - 0.00 + 60.68 + 0.00 = 259.37 kN/m ==&gt; µ = V,d / Rd = 259.37 / 1013.55 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.55	-6.3	0.00	0.00	0.00	102.55	-6.3	0.00	0.00	11.73	102.48	-6.2	0.00	0.00	13.54	102.48	-6.2	0.58	3.57	3.57	102.43	-6.1	0.58	3.52	7.01	102.43	-6.1	1.15	7.01	7.01	102.38	-6.0	1.15	6.91	10.45	101.88	-5.1	8.73	44.81	44.81	101.83	-5.0	8.73	44.02	48.24	101.83	-5.0	9.56	48.25	48.24	101.78	-5.0	9.56	47.38	51.68	101.48	-4.4	16.39	72.30	72.30	101.44	-4.3	16.39	70.81	75.74	101.44	-4.3	17.53	75.74	75.74	101.39	-4.2	17.53	74.15	79.17	100.49	-2.6	50.00	130.56	141.02	100.44	-2.5	50.00	126.13	144.46	100.44	-2.5	50.00	126.13	144.46	100.39	-2.4	50.00	121.72	147.90	99.49	-0.9	50.00	43.45	209.75	99.45	-0.8	50.00	39.15	213.19	99.45	-0.8	50.00	39.15	213.19	99.40	-0.7	50.00	34.86	216.62	98.75	0.4	50.00	-20.78	261.29	98.70	0.5	50.00	-25.06	264.73	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.48	0.00	S2: Auelehm	102.48	98.70	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>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: 04_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 = 9.25 m</div>		
Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/24
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>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 <math>\mu_e = 113.544 / 115.573 = 0.982</math></div> <div>Bettungslager <math>B_{h,d} = 113.544 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 115.573 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge <math>N_{d'}</math> <math>N(g+q+w)_k</math> <math>N(g+w)_k</math> <math>N_{w,k}</math> EA EI <math>N_{d'}</math></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 -372.48 -311.48 -229.93 -49.57 3.900E+7 2.100E+7 -415.48 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y <math>w_{x,d}</math> <math>w_{y,d}</math> <math>N_{d'}</math> <math>Q_{d'}</math> <math>M_{d'}</math></div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-7.47 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-7.47 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-6.64 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-5.81 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-4.98 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-4.15 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-3.32 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-2.49 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-1.66 103.72 -9.0 0.0 -372.91 0.00 0.00</div> <div>-0.83 103.72 -9.0 0.1 -372.91 0.00 0.00</div> <div>0.00 103.72 -9.0 0.1 -372.91 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 -0.0078</div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{a,k}</math> <math>\phi_{i,k}</math> <math>c(pas)_k</math> <math>c(akt)_k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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 H1 Schnitt 8R		Seite Anlage H1/25
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr. 11/25
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																																																																																																																																																																																																																																																																																																																								
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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>41.256</td><td>0.00</td><td>0.00</td></tr><tr><td>100.499</td><td>99.699</td><td>41.256</td><td>44.539</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>99.499</td><td>44.539</td><td>45.359</td><td>0.00</td><td>0.00</td></tr><tr><td>99.499</td><td>99.249</td><td>45.359</td><td>46.385</td><td>0.00</td><td>0.00</td></tr><tr><td>99.249</td><td>80.000</td><td>46.385</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>-43.87</td></tr><tr><td>101.50</td><td>100.50</td><td>-43.87</td><td>-86.39</td></tr><tr><td>100.50</td><td>99.70</td><td>-86.39</td><td>-120.40</td></tr><tr><td>99.70</td><td>99.50</td><td>-120.40</td><td>-128.90</td></tr><tr><td>99.50</td><td>99.25</td><td>-128.90</td><td>-139.53</td></tr><tr><td>99.25</td><td>80.00</td><td>-139.53</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>-372.9</td></tr><tr><td>103.72</td><td>-213.4</td><td>179.1</td><td>-434.8</td><td></td></tr><tr><td>103.45</td><td>-222.6</td><td>160.4</td><td>-388.9</td><td></td></tr><tr><td>102.55</td><td>-254.0</td><td>89.3</td><td>-275.5</td><td></td></tr><tr><td>102.48</td><td>-256.1</td><td>85.7</td><td>-269.3</td><td></td></tr><tr><td>102.45</td><td>-256.7</td><td>84.7</td><td>-266.8</td><td></td></tr><tr><td>101.50</td><td>-261.9</td><td>85.1</td><td>-191.2</td><td></td></tr><tr><td>100.50</td><td>-255.3</td><td>111.2</td><td>-87.1</td><td></td></tr><tr><td>99.70</td><td>-265.3</td><td>59.5</td><td>-14.2</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	41.256	0.00	0.00	100.499	99.699	41.256	44.539	0.00	0.00	99.699	99.499	44.539	45.359	0.00	0.00	99.499	99.249	45.359	46.385	0.00	0.00	99.249	80.000	46.385	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	-43.87	101.50	100.50	-43.87	-86.39	100.50	99.70	-86.39	-120.40	99.70	99.50	-120.40	-128.90	99.50	99.25	-128.90	-139.53	99.25	80.00	-139.53	-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	-372.9	103.72	-213.4	179.1	-434.8		103.45	-222.6	160.4	-388.9		102.55	-254.0	89.3	-275.5		102.48	-256.1	85.7	-269.3		102.45	-256.7	84.7	-266.8		101.50	-261.9	85.1	-191.2		100.50	-255.3	111.2	-87.1		99.70	-265.3	59.5	-14.2	
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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><div>99.50</div><div>-264.4</div><div>35.7</div><div>-4.6</div></div><div><div>99.25</div><div>-260.8</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>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.49</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.50</div><div>-27.4</div><div>-23.1</div><div>-10.9</div><div></div></div><div><div>107.45</div><div>-28.8</div><div>-24.5</div><div>-12.1</div><div></div></div><div><div>107.45</div><div>-72.3</div><div>-24.5</div><div>-39.9</div><div></div></div><div><div>106.50</div><div>-100.9</div><div>-53.7</div><div>-76.6</div><div></div></div><div><div>106.44</div><div>-102.7</div><div>-55.7</div><div>-79.7</div><div></div></div><div><div>105.54</div><div>-129.8</div><div>-83.1</div><div>-143.2</div><div></div></div><div><div>105.50</div><div>-130.9</div><div>-84.1</div><div>-146.3</div><div></div></div><div><div>105.35</div><div>-135.2</div><div>-88.2</div><div>-159.2</div><div></div></div><div><div>104.45</div><div>-160.5</div><div>-124.7</div><div>-254.1</div><div></div></div><div><div>103.72</div><div>-181.8</div><div>-162.7</div><div>-358.5</div><div>-311.5</div></div><div><div>103.72</div><div>-181.8</div><div>148.7</div><div>-358.5</div><div></div></div><div><div>103.45</div><div>-189.8</div><div>132.7</div><div>-320.5</div><div></div></div><div><div>102.55</div><div>-217.1</div><div>71.9</div><div>-227.6</div><div></div></div><div><div>102.48</div><div>-219.1</div><div>68.7</div><div>-222.6</div><div></div></div><div><div>102.45</div><div>-219.7</div><div>67.9</div><div>-220.6</div><div></div></div><div><div>101.50</div><div>-224.0</div><div>68.7</div><div>-160.2</div><div></div></div><div><div>100.50</div><div>-217.4</div><div>93.8</div><div>-73.9</div><div></div></div><div><div>99.70</div><div>-226.2</div><div>50.7</div><div>-12.1</div><div></div></div><div><div>99.50</div><div>-225.6</div><div>30.5</div><div>-3.9</div><div></div></div><div><div>99.25</div><div>-222.7</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>[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>108.50</div><div>0.0</div><div>0.0</div><div>0.0</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>107.50</div><div>-21.7</div><div>-7.6</div><div>-3.2</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>107.45</div><div>-66.3</div><div>-8.2</div><div>-31.4</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>106.44</div><div>-91.0</div><div>-23.7</div><div>-46.7</div><div></div></div><div><div>105.54</div><div>-115.6</div><div>-44.0</div><div>-77.0</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>105.35</div><div>-120.9</div><div>-49.1</div><div>-85.7</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>103.72</div><div>-167.6</div><div>-123.6</div><div>-221.3</div><div>-229.9</div></div><div><div>103.72</div><div>-167.6</div><div>106.3</div><div>-221.3</div><div></div></div><div><div>103.45</div><div>-175.6</div><div>90.3</div><div>-194.7</div><div></div></div><div><div>102.55</div><div>-202.9</div><div>29.4</div><div>-140.0</div><div></div></div><div><div>102.48</div><div>-204.9</div><div>26.3</div><div>-138.0</div><div></div></div><div><div>102.45</div><div>-205.4</div><div>25.4</div><div>-137.2</div><div></div></div><div><div>101.50</div><div>-208.2</div><div>30.1</div><div>-116.1</div><div></div></div><div><div>100.50</div><div>-194.9</div><div>72.0</div><div>-60.5</div><div></div></div><div><div>99.70</div><div>-204.0</div><div>43.1</div><div>-10.4</div><div></div></div><div><div>99.50</div><div>-204.7</div><div>26.3</div><div>-3.4</div><div></div></div><div><div>99.25</div><div>-203.6</div><div>0.0</div><div>0.0</div><div></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>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.50</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.49</div><div>0.0</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.50</div><div>-5.7</div><div>-15.6</div><div>-7.8</div><div></div></div><div><div>107.45</div><div>-6.0</div><div>-16.3</div><div>-8.6</div><div></div></div><div><div>106.50</div><div>-11.3</div><div>-31.2</div><div>-31.1</div><div></div></div><div><div>106.44</div><div>-11.7</div><div>-32.0</div><div>-32.9</div><div></div></div><div><div>105.54</div><div>-14.2</div><div>-39.1</div><div>-66.2</div><div></div></div><div><div>105.50</div><div>-14.2</div><div>-39.1</div><div>-67.7</div><div></div></div><div><div>105.35</div><div>-14.2</div><div>-39.1</div><div>-73.5</div><div></div></div><div><div>104.45</div><div>-14.2</div><div>-39.1</div><div>-108.7</div><div></div></div></div></div></div><tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage H1 Schnitt 8R</td><td colspan="2">Seite Anlage H1/27</td></tr><tr><td colspan="2">Kapitel:</td><td colspan="2">5 LF 3 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.: 27</td></tr><tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr></div></div>						Schnitt:		Anlage H1 Schnitt 8R		Seite Anlage H1/27		Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 27		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage H1 Schnitt 8R		Seite Anlage H1/27																			
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):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>103.72</div><div>-14.2</div><div>-39.1</div><div>-137.3</div><div>-90.2</div></div><div><div>103.72</div><div>-14.2</div><div>42.5</div><div>-137.3</div><div></div></div><div><div>103.45</div><div>-14.2</div><div>42.5</div><div>-125.8</div><div></div></div><div><div>102.55</div><div>-14.2</div><div>42.5</div><div>-87.6</div><div></div></div><div><div>102.48</div><div>-14.2</div><div>42.5</div><div>-84.6</div><div></div></div><div><div>102.45</div><div>-14.2</div><div>42.4</div><div>-83.4</div><div></div></div><div><div>101.50</div><div>-15.8</div><div>38.6</div><div>-44.1</div><div></div></div><div><div>100.50</div><div>-22.5</div><div>21.8</div><div>-13.4</div><div></div></div><div><div>99.70</div><div>-22.2</div><div>7.6</div><div>-1.7</div><div></div></div><div><div>99.50</div><div>-20.8</div><div>4.2</div><div>-0.5</div><div></div></div><div><div>99.25</div><div>-19.2</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>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>108.50</div><div>-25.6</div><div>-</div><div>-</div><div>-</div></div><div><div>108.50</div><div>-25.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.50</div><div>-25.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.49</div><div>-25.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.49</div><div>-25.5</div><div>-</div><div>-</div><div>-</div></div><div><div>108.44</div><div>-25.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.55</div><div>-21.8</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-21.6</div><div>-</div><div>-</div><div>-</div></div><div><div>107.50</div><div>-21.6</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-21.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.45</div><div>-21.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-21.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.55</div><div>-17.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-17.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-17.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.44</div><div>-17.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.44</div><div>-17.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.39</div><div>-17.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.59</div><div>-14.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.54</div><div>-14.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.54</div><div>-14.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-13.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-13.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.40</div><div>-13.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.35</div><div>-13.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.35</div><div>-13.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.30</div><div>-13.1</div><div>-</div><div>-</div><div>-</div></div><div><div>104.50</div><div>-10.3</div><div>-</div><div>-</div><div>-</div></div><div><div>104.45</div><div>-10.2</div><div>-</div><div>-</div><div>-</div></div><div><div>104.45</div><div>-10.2</div><div>-</div><div>-</div><div>-</div></div><div><div>104.40</div><div>-10.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.77</div><div>-8.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-7.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.67</div><div>-7.7</div><div>-</div><div>-</div><div>-</div></div><div><div>103.50</div><div>-7.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.45</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.45</div><div>-7.1</div><div>-</div><div>-</div><div>-</div></div><div><div>103.40</div><div>-6.9</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-4.8</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-4.8</div><div>0.00</div><div>0.00</div><div>11.73</div></div><div><div>102.48</div><div>-4.6</div><div>0.00</div><div>0.00</div><div>13.54</div></div><div><div>102.48</div><div>-4.6</div><div>0.78</div><div>3.57</div><div>3.57</div></div><div><div>102.45</div><div>-4.5</div><div>0.78</div><div>3.52</div><div>5.65</div></div><div><div>102.45</div><div>-4.5</div><div>1.25</div><div>5.65</div><div>5.65</div></div><div><div>102.40</div><div>-4.4</div><div>1.25</div><div>5.50</div><div>9.10</div></div><div><div>101.55</div><div>-2.5</div><div>26.66</div><div>67.83</div><div>67.83</div></div><div><div>101.50</div><div>-2.4</div><div>26.66</div><div>65.09</div><div>71.28</div></div><div><div>101.50</div><div>-2.4</div><div>29.20</div><div>71.28</div><div>71.28</div></div><div><div>101.45</div><div>-2.3</div><div>29.20</div><div>68.31</div><div>74.74</div></div><div><div>100.55</div><div>-0.6</div><div>50.00</div><div>30.03</div><div>136.92</div></div><div><div>100.50</div><div>-0.5</div><div>50.00</div><div>25.41</div><div>140.38</div></div><div><div>100.50</div><div>-0.5</div><div>50.00</div><div>25.41</div><div>140.38</div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage H1 Schnitt 8R</td><td colspan="2">Seite Anlage H1/28</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">5 LF 3 (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 H1 Schnitt 8R		Seite Anlage H1/28		Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.:		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage H1 Schnitt 8R		Seite Anlage H1/28																			
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):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.45</div><div>-0.4</div><div>50.00</div><div>20.81</div><div>143.83</div></div><div>99.75</div><div>0.8</div><div>50.00</div><div>-42.49</div><div>192.20</div><div>99.70</div><div>0.9</div><div>50.00</div><div>-46.97</div><div>195.65</div><div>99.70</div><div>0.9</div><div>50.00</div><div>-46.97</div><div>195.65</div><div>99.65</div><div>1.0</div><div>50.00</div><div>-51.44</div><div>199.11</div><div>99.55</div><div>1.2</div><div>50.00</div><div>-60.38</div><div>206.02</div><div>99.50</div><div>1.3</div><div>50.00</div><div>-64.84</div><div>209.47</div><div>99.50</div><div>1.3</div><div>50.00</div><div>-64.84</div><div>209.47</div><div>99.45</div><div>1.4</div><div>50.00</div><div>-69.31</div><div>212.92</div><div>99.30</div><div>1.7</div><div>50.00</div><div>-82.71</div><div>223.29</div><div>99.25</div><div>1.7</div><div>50.00</div><div>-87.17</div><div>226.74</div></div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10229372 Theoretischer Fußpunkt = 99.249 m</div> <div>Einbindetiefe tg = 3.30 m Profillänge = 9.25 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 175.04 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 43.50 \text{ kN/m}</math> <math>E_{av,k} = 56.47 \text{ kN/m}</math> (<math>E_{ah,k} = 327.68 \text{ kN/m}</math>) <math>B_{v,k} = 40.63</math> Summe <math>V_{,k} = 234.38 \text{ kN/m}</math> (Druck)</div> <div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.13 bis 96.61 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></div> <div>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 102.48 0.00 S2: Auelehm 102.48 99.25 55.00 s3: Flussskies, -sand Mantelfläche bis 99.25 m = <math>1.000 \text{ m}^2/\text{m}/\text{m} \Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 177.65 / 1.40 = 126.89 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 991.94 \text{ kN/m}</math></div> <div>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 210.04 - 0.00 + 66.00 + 52.20 = 328.25 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 328.25 / 991.94 = 0.33</math></div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage H1	Schnitt 8R	Seite Anlage H1/29
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.: 11/29
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 8 Datei: 05_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 = 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 = 10.30 m</div>		
Schnitt: Anlage H1 Schnitt 8R		Seite Anlage H1/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1160
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	45.000	45.000

Ausnutzungsgrad  $\mu_e = 266.997 / 271.381 = 0.984$   
Bettungslager  $B_{h,d} = 266.997 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 271.381 \text{ kN/m}$

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	-225.78	-174.67	-174.67	-49.12	3.900E+7	2.100E+7	-222.70

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	-9.9	0.0	-226.38	0.00	0.00
-7.47	103.72	-9.9	0.0	-226.38	0.00	0.00
-7.47	103.72	-9.9	0.0	-226.38	0.00	0.00
-6.64	103.72	-10.0	0.0	-226.38	0.00	0.00
-5.81	103.72	-10.0	0.0	-226.38	0.00	0.00
-4.98	103.72	-10.0	0.0	-226.38	0.00	0.00
-4.15	103.72	-10.0	0.0	-226.38	0.00	0.00
-3.32	103.72	-10.0	0.0	-226.38	0.00	0.00
-2.49	103.72	-10.0	0.1	-226.38	0.00	0.00
-1.66	103.72	-10.0	0.1	-226.38	0.00	0.00
-0.83	103.72	-10.0	0.1	-226.38	0.00	0.00
0.00	103.72	-10.0	0.1	-226.38	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0078

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	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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

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

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
108.500	108.494	0.000	1.992	0.00
108.494	107.500	1.992	9.352	0.00
107.500	107.450	9.352	9.723	0.00

Schnitt:	Anlage H1	Schnitt 8R	Seite Anlage H1/81
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr. 11/31
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>35.432</td><td>0.00</td><td>0.00</td></tr><tr><td>101.484</td><td>100.489</td><td>35.432</td><td>39.516</td><td>0.00</td><td>0.00</td></tr><tr><td>100.489</td><td>99.493</td><td>39.516</td><td>43.600</td><td>0.00</td><td>0.00</td></tr><tr><td>99.493</td><td>98.497</td><td>43.600</td><td>47.683</td><td>0.00</td><td>0.00</td></tr><tr><td>98.497</td><td>98.199</td><td>47.683</td><td>48.908</td><td>0.00</td><td>0.00</td></tr><tr><td>98.199</td><td>80.000</td><td>48.908</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>-29.08</td></tr><tr><td>102.08</td><td>101.48</td><td>-29.08</td><td>-52.66</td></tr><tr><td>101.48</td><td>100.49</td><td>-52.66</td><td>-91.96</td></tr><tr><td>100.49</td><td>99.49</td><td>-91.96</td><td>-131.25</td></tr><tr><td>99.49</td><td>98.50</td><td>-131.25</td><td>-170.54</td></tr><tr><td>98.50</td><td>98.20</td><td>-170.54</td><td>-182.33</td></tr><tr><td>98.20</td><td>80.00</td><td>-182.33</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>-226.4</td></tr><tr><td>103.72</td><td>-212.6</td><td>80.6</td><td>-255.6</td><td></td></tr><tr><td>103.45</td><td>-222.6</td><td>60.6</td><td>-236.5</td><td></td></tr><tr><td>102.55</td><td>-256.7</td><td>-15.8</td><td>-215.2</td><td></td></tr><tr><td>102.48</td><td>-258.7</td><td>-19.5</td><td>-216.4</td><td></td></tr><tr><td>102.08</td><td>-261.2</td><td>-18.1</td><td>-224.3</td><td></td></tr><tr><td>101.48</td><td>-254.7</td><td>8.4</td><td>-228.6</td><td></td></tr><tr><td>100.49</td><td>-227.7</td><td>88.9</td><td>-178.3</td><td></td></tr><tr><td>99.49</td><td>-226.4</td><td>99.6</td><td>-77.8</td><td></td></tr><tr><td>98.50</td><td>-243.2</td><td>34.0</td><td>-5.2</td><td></td></tr><tr><td>98.20</td><td>-244.2</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	35.432	0.00	0.00	101.484	100.489	35.432	39.516	0.00	0.00	100.489	99.493	39.516	43.600	0.00	0.00	99.493	98.497	43.600	47.683	0.00	0.00	98.497	98.199	47.683	48.908	0.00	0.00	98.199	80.000	48.908	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	-29.08	102.08	101.48	-29.08	-52.66	101.48	100.49	-52.66	-91.96	100.49	99.49	-91.96	-131.25	99.49	98.50	-131.25	-170.54	98.50	98.20	-170.54	-182.33	98.20	80.00	-182.33	-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	-226.4	103.72	-212.6	80.6	-255.6		103.45	-222.6	60.6	-236.5		102.55	-256.7	-15.8	-215.2		102.48	-258.7	-19.5	-216.4		102.08	-261.2	-18.1	-224.3		101.48	-254.7	8.4	-228.6		100.49	-227.7	88.9	-178.3		99.49	-226.4	99.6	-77.8		98.50	-243.2	34.0	-5.2		98.20	-244.2	0.0	0.0	
107.450	106.500	9.723	16.756	0.00	0.00																																																																																																																																																																																																																																																																																																									
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98.497	98.199	47.683	48.908	0.00	0.00																																																																																																																																																																																																																																																																																																									
98.199	80.000	48.908	123.552	0.00	0.00																																																																																																																																																																																																																																																																																																									
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0.00	0.00	108.50	102.55																																																																																																																																																																																																																																																																																																											
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																								
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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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103.45	102.55	0.00	0.00																																																																																																																																																																																																																																																																																																											
102.55	102.48	-12.42	-13.46																																																																																																																																																																																																																																																																																																											
102.48	102.08	-13.37	-29.08																																																																																																																																																																																																																																																																																																											
102.08	101.48	-29.08	-52.66																																																																																																																																																																																																																																																																																																											
101.48	100.49	-52.66	-91.96																																																																																																																																																																																																																																																																																																											
100.49	99.49	-91.96	-131.25																																																																																																																																																																																																																																																																																																											
99.49	98.50	-131.25	-170.54																																																																																																																																																																																																																																																																																																											
98.50	98.20	-170.54	-182.33																																																																																																																																																																																																																																																																																																											
98.20	80.00	-182.33	-900.57																																																																																																																																																																																																																																																																																																											
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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	-226.4																																																																																																																																																																																																																																																																																																										
103.72	-212.6	80.6	-255.6																																																																																																																																																																																																																																																																																																											
103.45	-222.6	60.6	-236.5																																																																																																																																																																																																																																																																																																											
102.55	-256.7	-15.8	-215.2																																																																																																																																																																																																																																																																																																											
102.48	-258.7	-19.5	-216.4																																																																																																																																																																																																																																																																																																											
102.08	-261.2	-18.1	-224.3																																																																																																																																																																																																																																																																																																											
101.48	-254.7	8.4	-228.6																																																																																																																																																																																																																																																																																																											
100.49	-227.7	88.9	-178.3																																																																																																																																																																																																																																																																																																											
99.49	-226.4	99.6	-77.8																																																																																																																																																																																																																																																																																																											
98.50	-243.2	34.0	-5.2																																																																																																																																																																																																																																																																																																											
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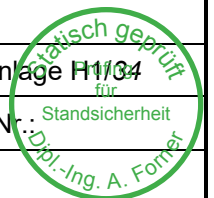
Dipl.-Ing. A. Forner



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><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>-174.7</td></tr><tr><td>103.72</td><td>-164.2</td><td>61.2</td><td>-198.3</td><td></td></tr><tr><td>103.45</td><td>-172.1</td><td>45.9</td><td>-183.8</td><td></td></tr><tr><td>102.55</td><td>-198.8</td><td>-12.7</td><td>-168.0</td><td></td></tr><tr><td>102.48</td><td>-200.6</td><td>-15.6</td><td>-169.0</td><td></td></tr><tr><td>102.08</td><td>-202.6</td><td>-14.5</td><td>-175.3</td><td></td></tr><tr><td>101.48</td><td>-197.5</td><td>6.3</td><td>-178.9</td><td></td></tr><tr><td>100.49</td><td>-176.4</td><td>69.5</td><td>-139.6</td><td></td></tr><tr><td>99.49</td><td>-175.4</td><td>78.0</td><td>-61.0</td><td></td></tr><tr><td>98.50</td><td>-188.7</td><td>26.6</td><td>-4.1</td><td></td></tr><tr><td>98.20</td><td>-189.5</td><td>0.0</td><td>0.0</td><td></td></tr></table><div><div>Schnittgrößen 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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>-20.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-20.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.50</td><td>-20.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-20.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.49</td><td>-20.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.44</td><td>-20.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.55</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.55</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.50</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-7.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.4</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>21.74</td></tr><tr><td>102.48</td><td>-5.2</td><td>0.00</td><td>0.00</td><td>23.55</td></tr><tr><td>102.48</td><td>-5.2</td><td>4.54</td><td>23.39</td><td>23.39</td></tr><tr><td>102.43</td><td>-5.1</td><td>4.54</td><td>22.94</td><td>26.83</td></tr><tr><td>102.13</td><td>-4.5</td><td>10.60</td><td>47.46</td><td>47.46</td></tr><tr><td>102.08</td><td>-4.4</td><td>10.60</td><td>46.47</td><td>50.90</td></tr><tr><td>102.08</td><td>-4.4</td><td>11.61</td><td>50.90</td><td>50.90</td></tr><tr><td>102.03</td><td>-4.3</td><td>11.61</td><td>49.82</td><td>54.34</td></tr><tr><td>101.53</td><td>-3.4</td><td>26.07</td><td>88.72</td><td>88.72</td></tr><tr><td>101.48</td><td>-3.3</td><td>26.07</td><td>86.52</td><td>92.16</td></tr><tr><td>101.48</td><td>-3.3</td><td>27.77</td><td>92.16</td><td>92.16</td></tr><tr><td>101.43</td><td>-3.2</td><td>27.77</td><td>89.83</td><td>95.60</td></tr><tr><td>100.54</td><td>-1.9</td><td>45.00</td><td>83.33</td><td>157.48</td></tr><tr><td>100.49</td><td>-1.8</td><td>45.00</td><td>80.16</td><td>160.92</td></tr><tr><td>100.49</td><td>-1.8</td><td>45.00</td><td>80.16</td><td>160.92</td></tr><tr><td>100.44</td><td>-1.7</td><td>45.00</td><td>77.01</td><td>164.36</td></tr><tr><td>99.54</td><td>-0.5</td><td>45.00</td><td>24.06</td><td>226.25</td></tr><tr><td>99.49</td><td>-0.5</td><td>45.00</td><td>21.28</td><td>229.69</td></tr><tr><td>99.49</td><td>-0.5</td><td>45.00</td><td>21.28</td><td>229.69</td></tr><tr><td>99.44</td><td>-0.4</td><td>45.00</td><td>18.51</td><td>233.13</td></tr><tr><td>98.55</td><td>0.7</td><td>45.00</td><td>-30.17</td><td>295.01</td></tr><tr><td>98.50</td><td>0.7</td><td>45.00</td><td>-32.84</td><td>298.45</td></tr><tr><td>98.50</td><td>0.7</td><td>45.00</td><td>-32.84</td><td>298.45</td></tr><tr><td>98.45</td><td>0.8</td><td>45.00</td><td>-35.51</td><td>301.89</td></tr><tr><td>98.25</td><td>1.0</td><td>45.00</td><td>-46.19</td><td>315.64</td></tr></tbody></table></div>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.50	-20.9	-	-	-	108.50	-20.9	-	-	-	108.50	-20.9	-	-	-	108.49	-20.9	-	-	-	108.49	-20.9	-	-	-	108.44	-20.8	-	-	-	107.55	-18.2	-	-	-	107.50	-18.0	-	-	-	107.50	-18.0	-	-	-	107.45	-17.9	-	-	-	107.45	-17.9	-	-	-	107.40	-17.8	-	-	-	106.55	-15.3	-	-	-	106.50	-15.2	-	-	-	106.50	-15.2	-	-	-	106.45	-15.1	-	-	-	105.55	-12.6	-	-	-	105.50	-12.4	-	-	-	105.50	-12.4	-	-	-	105.45	-12.3	-	-	-	105.45	-12.3	-	-	-	105.40	-12.1	-	-	-	105.40	-12.1	-	-	-	105.35	-12.0	-	-	-	105.35	-12.0	-	-	-	105.30	-11.9	-	-	-	104.50	-9.8	-	-	-	104.45	-9.6	-	-	-	104.45	-9.6	-	-	-	104.40	-9.5	-	-	-	103.77	-7.9	-	-	-	103.72	-7.8	-	-	-	103.72	-7.8	-	-	-	103.67	-7.7	-	-	-	103.50	-7.3	-	-	-	103.45	-7.2	-	-	-	103.45	-7.2	-	-	-	103.40	-7.1	-	-	-	102.60	-5.4	-	-	-	102.55	-5.3	0.00	0.00	0.00	102.55	-5.3	0.00	0.00	21.74	102.48	-5.2	0.00	0.00	23.55	102.48	-5.2	4.54	23.39	23.39	102.43	-5.1	4.54	22.94	26.83	102.13	-4.5	10.60	47.46	47.46	102.08	-4.4	10.60	46.47	50.90	102.08	-4.4	11.61	50.90	50.90	102.03	-4.3	11.61	49.82	54.34	101.53	-3.4	26.07	88.72	88.72	101.48	-3.3	26.07	86.52	92.16	101.48	-3.3	27.77	92.16	92.16	101.43	-3.2	27.77	89.83	95.60	100.54	-1.9	45.00	83.33	157.48	100.49	-1.8	45.00	80.16	160.92	100.49	-1.8	45.00	80.16	160.92	100.44	-1.7	45.00	77.01	164.36	99.54	-0.5	45.00	24.06	226.25	99.49	-0.5	45.00	21.28	229.69	99.49	-0.5	45.00	21.28	229.69	99.44	-0.4	45.00	18.51	233.13	98.55	0.7	45.00	-30.17	295.01	98.50	0.7	45.00	-32.84	298.45	98.50	0.7	45.00	-32.84	298.45	98.45	0.8	45.00	-35.51	301.89	98.25	1.0	45.00	-46.19	315.64
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102.13	-4.5	10.60	47.46	47.46																																																																																																																																																																																																																																																																																																																																													
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102.08	-4.4	11.61	50.90	50.90																																																																																																																																																																																																																																																																																																																																													
102.03	-4.3	11.61	49.82	54.34																																																																																																																																																																																																																																																																																																																																													
101.53	-3.4	26.07	88.72	88.72																																																																																																																																																																																																																																																																																																																																													
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Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11/34																																																																																																																																																																																																																																																																																																																																															
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>98.20    1.1    45.00    -48.86    319.08</div> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06826609 Theoretischer Fußpunkt = 98.199 m</div> <div>Einbindetiefe tg = 4.35 m Profillänge = 10.30 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 194.91 kN/m G',k = 0.00 kN/m Pv,k = 43.50 kN/m Eav,k = 55.88 kN/m (Eah,k = 318.60 kN/m) Bv,k = 83.35 Summe V,k = 210.94 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 99.08 bis 95.56 m) ==&gt; 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>98.20</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table><div>Mantelfläche bis 98.20 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 235.40 / 1.40 = 168.14 kN/m Rd = Rb,d + Rs1,d = 1033.19 kN/m</div></div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 263.12 - 0.00 + 71.25 + 58.73 = 393.10 kN/m ==&gt; µ = V,d / Rd = 393.10 / 1033.19 = 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	98.20	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.48	0.00	S2: Auelehm											
102.48	98.20	55.00	s3: Flussskies, -sand											
Schnitt: Anlage H1    Schnitt 8R		Seite Anlage H1/35												
Kapitel: 6                    LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11/35												
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 I1 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: 00_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 = 7.50 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 = 297.644 / 566.102 = 0.526 Bettungslager Bh,d = 297.644 kN/m Erdwiderstand Eph,d = 566.102 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																																									
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[mNHN]	[mNHN]	[MN/m³]	[MN/m³]																																														
106.00	105.25	10.000	10.000																																														
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Schnitt:	Anlage I1 Schnitt 9R	Seite Anlage I1																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr. 111																																															
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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																		
<div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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>105.25</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></tbody></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 &gt; 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><thead><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></thead><tbody><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></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 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<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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Anlage I1    Schnitt 9R</div> <div>Kapitel: 1    LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage I1/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
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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>102.45102.40-148.48-150.61</div><div>102.40102.00-150.61-167.62</div><div>102.00101.45-167.62-191.00</div><div>101.45101.00-191.00-210.14</div><div>101.00100.45-210.14-233.53</div><div>100.4599.95-233.53-254.79</div><div>99.9580.00-254.79-1102.66</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>105.25-43.2-5.9-17.3</div><div>105.00-45.5-4.2-18.5</div><div>104.40-51.9-5.0-21.0</div><div>103.40-64.6-18.5-31.4</div><div>102.45-79.3-45.4-60.7</div><div>102.40-80.0-46.5-63.0</div><div>102.00-62.91.7-71.4</div><div>101.45-49.341.4-58.2</div><div>101.00-46.551.8-36.4</div><div>100.45-53.237.8-10.5</div><div>99.95-59.40.00.0</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>105.25-37.6-5.2-15.1</div><div>105.00-39.6-3.7-16.2</div><div>104.40-45.1-4.3-18.3</div><div>103.40-56.2-16.0-27.4</div><div>102.45-69.0-39.2-52.7</div><div>102.40-69.6-40.3-54.7</div><div>102.00-54.71.5-62.0</div><div>101.45-42.936.0-50.4</div><div>101.00-40.544.9-31.6</div><div>100.45-46.332.8-9.1</div><div>99.95-51.70.00.0</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>105.25-37.6-5.2-15.1</div><div>105.00-39.6-3.7-16.2</div><div>104.40-45.1-4.3-18.3</div><div>103.40-56.2-16.0-27.4</div><div>102.45-69.0-39.2-52.7</div><div>102.40-69.6-40.3-54.7</div><div>102.00-54.71.5-62.0</div><div>101.45-42.936.0-50.4</div><div>101.00-40.544.9-31.6</div></div></div></div>		
Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/3
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr. 113
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

113

Dr.-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>100.45</div><div>-46.3</div><div>32.8</div><div>-9.1</div></div><div><div>99.95</div><div>-51.7</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>105.25</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>104.40</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.40</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>102.40</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.00</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>101.00</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>99.95</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><div>107.45</div><div>-12.4</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-12.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-11.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.89</div><div>-11.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.84</div><div>-11.2</div><div>-</div><div>-</div><div>-</div></div><div><div>106.50</div><div>-10.6</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-10.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.45</div><div>-10.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.40</div><div>-10.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-10.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-10.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.15</div><div>-10.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-9.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.00</div><div>-9.7</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>106.00</div><div>-9.7</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.95</div><div>-9.6</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-8.8</div><div>4.84</div><div>42.80</div><div>42.79</div></div><div><div>105.50</div><div>-8.8</div><div>4.84</div><div>42.35</div><div>47.55</div></div><div><div>105.50</div><div>-8.8</div><div>5.43</div><div>47.55</div><div>47.55</div></div><div><div>105.45</div><div>-8.7</div><div>5.43</div><div>47.05</div><div>52.30</div></div><div><div>105.45</div><div>-8.7</div><div>6.04</div><div>52.31</div><div>52.30</div></div><div><div>105.40</div><div>-8.6</div><div>6.04</div><div>51.75</div><div>57.06</div></div><div><div>105.30</div><div>-8.4</div><div>7.94</div><div>66.57</div><div>66.57</div></div><div><div>105.25</div><div>-8.3</div><div>7.94</div><div>65.84</div><div>71.32</div></div><div><div>105.25</div><div>-8.3</div><div>5.00</div><div>41.44</div><div>54.96</div></div><div><div>105.20</div><div>-8.2</div><div>5.00</div><div>40.98</div><div>57.54</div></div><div><div>105.05</div><div>-7.9</div><div>5.00</div><div>39.60</div><div>65.28</div></div><div><div>105.00</div><div>-7.8</div><div>5.00</div><div>39.14</div><div>67.85</div></div><div><div>105.00</div><div>-7.8</div><div>5.00</div><div>39.14</div><div>67.85</div></div><div><div>104.95</div><div>-7.7</div><div>5.00</div><div>38.68</div><div>69.14</div></div><div><div>104.45</div><div>-6.8</div><div>5.00</div><div>34.10</div><div>82.04</div></div><div><div>104.40</div><div>-6.7</div><div>5.00</div><div>33.65</div><div>83.33</div></div><div><div>104.40</div><div>-6.7</div><div>5.00</div><div>33.65</div><div>83.33</div></div><div><div>104.35</div><div>-6.6</div><div>5.00</div><div>33.19</div><div>84.61</div></div><div><div>103.45</div><div>-5.0</div><div>5.00</div><div>25.07</div><div>107.82</div></div><div><div>103.40</div><div>-4.9</div><div>5.00</div><div>24.62</div><div>109.11</div></div><div><div>103.40</div><div>-4.9</div><div>5.00</div><div>24.62</div><div>109.11</div></div><div><div>103.35</div><div>-4.8</div><div>5.00</div><div>24.18</div><div>110.40</div></div><div><div>102.50</div><div>-3.3</div><div>5.00</div><div>16.71</div><div>132.32</div></div><div><div>102.45</div><div>-3.3</div><div>5.00</div><div>16.28</div><div>133.61</div></div></div>					
Schnitt:		Anlage I1   Schnitt 9R		Seite Anlage I1/4	
Kapitel:		1   LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 114	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Statisch geprüft

114

Ing.

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

102.45	-3.3	5.00	16.28	241.28
102.40	-3.2	5.00	15.85	244.74
102.40	-3.2	50.00	158.48	244.74
102.35	-3.1	50.00	154.19	248.19
102.05	-2.6	50.00	128.69	268.92
102.00	-2.5	50.00	124.49	272.38
102.00	-2.5	50.00	124.49	272.38
101.95	-2.4	50.00	120.30	275.83
101.50	-1.7	50.00	83.16	306.93
101.45	-1.6	50.00	79.09	310.38
101.45	-1.6	50.00	79.09	310.38
101.40	-1.5	50.00	75.04	313.84
101.05	-0.9	50.00	46.91	338.02
101.00	-0.9	50.00	42.92	341.48
101.00	-0.9	50.00	42.92	341.48
100.95	-0.8	50.00	38.94	344.93
100.50	-0.1	50.00	3.35	376.03
100.45	0.0	50.00	-0.58	379.48
100.45	0.0	50.00	-0.58	379.48
100.40	0.1	50.00	-4.52	382.94
100.00	0.7	50.00	-35.97	410.58
99.95	0.8	50.00	-39.90	414.03

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.09001567$   
Theoretischer Fußpunkt = 99.949 m

Einbindetiefe  $t_g = 6.05$  m  
Profillänge = 7.50 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$   
 $G_{k} = 141.92$  kN/m  
 $G'_{k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 36.92$  kN/m ( $E_{ah,k} = 221.04$  kN/m)  
 $B_{v,k} = 91.19$   
Summe  $V_{k} = 87.65$  kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit  
(Erfahrungswerte nach EA Pfähle)  
Verfahren 2: EAU Bild E 4-3 (rechts)  
Bohrpfahlwand  $D = 0.88$  m  
Verhältnisswert (min, max) = 0.00  
Spitzendruck  $q_{c,m} = 7.50$  MN/m<sup>2</sup>  
(gemittelt von 100.83 bis 97.31 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	105.25	0.00	S1: Auffüllungen
105.25	102.45	0.00	S2: Auelehm
102.45	99.95	55.00	s3: Flussskies, -sand

Mantelfläche bis 99.95 m = 1.000 m<sup>2</sup>/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 137.50 / 1.40 = 98.21$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 963.26$  kN/m

Einwirkungen  
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 42.45 + 0.00 = 212.76$  kN/m  
 $\Rightarrow \mu = V_{d} / R_{d} = 212.76 / 963.26 = 0.22$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage I1	Schnitt 9R	Seite Anlage I1/5
Kapitel: 1	LF 1.1 (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>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: 01_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 = 7.50 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 I1 Schnitt 9R		Seite Anlage I1/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 116
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 <math>\mu_e = 355.613 / 531.524 = 0.669</math> Bettungslager <math>B_{h,d} = 355.613 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 531.524 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.25</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></tbody></table> <div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt;&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>105.25</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></tbody></table> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>)</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>105.681</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>102.100</td><td>34.837</td><td>36.068</td><td>5.00</td><td>5.00</td></tr><tr><td>102.100</td><td>101.450</td><td>36.068</td><td>38.735</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>101.049</td><td>38.735</td><td>40.377</td><td>5.00</td><td>5.00</td></tr><tr><td>101.049</td><td>100.449</td><td>40.377</td><td>42.839</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.949</td><td>42.839</td><td>44.891</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>80.000</td><td>44.891</td><td>126.712</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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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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Statisch geprüft

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Ing.

für

Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																
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([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>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-14.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-13.6</td><td>-</td><td>-</td><td>-</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	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	-42.0	-16.0	-33.7	104.92	-42.5	-15.1	-35.0	104.41	-45.5	-12.4	-41.7	103.41	-54.2	-19.7	-56.4	102.45	-65.5	-42.2	-84.8	102.40	-66.1	-43.2	-86.9	102.10	-50.0	-0.6	-93.2	101.45	-29.2	55.1	-72.8	101.05	-25.7	65.1	-48.2	100.45	-32.3	46.3	-12.7	99.95	-33.1	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	102.10	0.0	0.0	0.0	101.45	0.0	0.0	0.0	101.05	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-16.9	-	-	-	107.45	-16.9	-	-	-	107.45	-16.9	-	-	-	107.40	-16.8	-	-	-	106.95	-15.6	-	-	-	106.89	-15.4	-	-	-	106.89	-15.4	-	-	-	106.84	-15.3	-	-	-	106.50	-14.4	-	-	-	106.45	-14.3	-	-	-	106.45	-14.3	-	-	-	106.40	-14.1	-	-	-	106.25	-13.7	-	-	-	106.20	-13.6	-	-	-	106.20	-13.6	-	-	-
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<table><tr><td>106.15</td><td>-13.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.05</td><td>-13.2</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.00</td><td>-13.1</td><td>0.00</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>106.00</td><td>-13.1</td><td>0.00</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>105.95</td><td>-13.0</td><td>0.00</td><td>0.00</td><td>5.06</td><td></td><td></td></tr><tr><td>105.73</td><td>-12.4</td><td>2.04</td><td>25.31</td><td>25.31</td><td></td><td></td></tr><tr><td>105.68</td><td>-12.3</td><td>2.04</td><td>25.03</td><td>30.37</td><td></td><td></td></tr><tr><td>105.68</td><td>-12.3</td><td>2.48</td><td>30.37</td><td>30.37</td><td></td><td></td></tr><tr><td>105.64</td><td>-12.1</td><td>2.48</td><td>30.08</td><td>34.67</td><td></td><td></td></tr><tr><td>105.55</td><td>-11.9</td><td>3.64</td><td>43.26</td><td>43.25</td><td></td><td></td></tr><tr><td>105.50</td><td>-11.8</td><td>3.64</td><td>42.83</td><td>47.55</td><td></td><td></td></tr><tr><td>105.50</td><td>-11.8</td><td>4.04</td><td>47.55</td><td>47.55</td><td></td><td></td></tr><tr><td>105.45</td><td>-11.7</td><td>4.04</td><td>47.02</td><td>52.30</td><td></td><td></td></tr><tr><td>105.45</td><td>-11.7</td><td>4.49</td><td>52.31</td><td>52.30</td><td></td><td></td></tr><tr><td>105.40</td><td>-11.5</td><td>4.49</td><td>51.72</td><td>57.06</td><td></td><td></td></tr><tr><td>105.40</td><td>-11.5</td><td>4.95</td><td>57.06</td><td>57.06</td><td></td><td></td></tr><tr><td>105.35</td><td>-11.4</td><td>4.95</td><td>56.41</td><td>61.81</td><td></td><td></td></tr><tr><td>105.30</td><td>-11.3</td><td>5.91</td><td>66.57</td><td>66.57</td><td></td><td></td></tr><tr><td>105.25</td><td>-11.1</td><td>5.91</td><td>65.80</td><td>71.32</td><td></td><td></td></tr><tr><td>105.25</td><td>-11.1</td><td>4.94</td><td>54.96</td><td>54.96</td><td></td><td></td></tr><tr><td>105.20</td><td>-11.0</td><td>4.94</td><td>54.32</td><td>57.54</td><td></td><td></td></tr><tr><td>105.05</td><td>-10.6</td><td>5.00</td><td>53.04</td><td>65.28</td><td></td><td></td></tr><tr><td>105.00</td><td>-10.5</td><td>5.00</td><td>52.39</td><td>67.85</td><td></td><td></td></tr><tr><td>105.00</td><td>-10.5</td><td>5.00</td><td>52.39</td><td>67.85</td><td></td><td></td></tr><tr><td>104.96</td><td>-10.4</td><td>5.00</td><td>51.85</td><td>68.93</td><td></td><td></td></tr><tr><td>104.96</td><td>-10.4</td><td>5.00</td><td>51.85</td><td>68.93</td><td></td><td></td></tr><tr><td>104.92</td><td>-10.3</td><td>5.00</td><td>51.31</td><td>70.00</td><td></td><td></td></tr><tr><td>104.92</td><td>-10.3</td><td>5.00</td><td>51.31</td><td>70.00</td><td></td><td></td></tr><tr><td>104.87</td><td>-10.1</td><td>5.00</td><td>50.66</td><td>71.30</td><td></td><td></td></tr><tr><td>104.46</td><td>-9.1</td><td>5.00</td><td>45.48</td><td>81.69</td><td></td><td></td></tr><tr><td>104.41</td><td>-9.0</td><td>5.00</td><td>44.83</td><td>82.98</td><td></td><td></td></tr><tr><td>104.41</td><td>-9.0</td><td>5.00</td><td>44.83</td><td>82.98</td><td></td><td></td></tr><tr><td>104.36</td><td>-8.8</td><td>5.00</td><td>44.19</td><td>84.28</td><td></td><td></td></tr><tr><td>103.46</td><td>-6.6</td><td>5.00</td><td>32.79</td><td>107.65</td><td></td><td></td></tr><tr><td>103.41</td><td>-6.4</td><td>5.00</td><td>32.17</td><td>108.94</td><td></td><td></td></tr><tr><td>103.41</td><td>-6.4</td><td>5.00</td><td>32.17</td><td>108.94</td><td></td><td></td></tr><tr><td>103.36</td><td>-6.3</td><td>5.00</td><td>31.54</td><td>110.24</td><td></td><td></td></tr><tr><td>102.50</td><td>-4.2</td><td>5.00</td><td>21.18</td><td>132.31</td><td></td><td></td></tr><tr><td>102.45</td><td>-4.1</td><td>5.00</td><td>20.59</td><td>133.61</td><td></td><td></td></tr><tr><td>102.45</td><td>-4.1</td><td>5.00</td><td>20.59</td><td>241.28</td><td></td><td></td></tr><tr><td>102.40</td><td>-4.0</td><td>5.00</td><td>20.00</td><td>244.74</td><td></td><td></td></tr><tr><td>102.40</td><td>-4.0</td><td>50.00</td><td>199.96</td><td>244.74</td><td></td><td></td></tr><tr><td>102.35</td><td>-3.9</td><td>50.00</td><td>194.08</td><td>248.19</td><td></td><td></td></tr><tr><td>102.15</td><td>-3.4</td><td>50.00</td><td>170.76</td><td>262.01</td><td></td><td></td></tr><tr><td>102.10</td><td>-3.3</td><td>50.00</td><td>164.97</td><td>265.47</td><td></td><td></td></tr><tr><td>102.10</td><td>-3.3</td><td>50.00</td><td>164.97</td><td>265.47</td><td></td><td></td></tr><tr><td>102.05</td><td>-3.2</td><td>50.00</td><td>159.21</td><td>268.92</td><td></td><td></td></tr><tr><td>101.50</td><td>-1.9</td><td>50.00</td><td>97.08</td><td>306.93</td><td></td><td></td></tr><tr><td>101.45</td><td>-1.8</td><td>50.00</td><td>91.54</td><td>310.38</td><td></td><td></td></tr><tr><td>101.45</td><td>-1.8</td><td>50.00</td><td>91.54</td><td>310.38</td><td></td><td></td></tr><tr><td>101.40</td><td>-1.7</td><td>50.00</td><td>86.01</td><td>313.84</td><td></td><td></td></tr><tr><td>101.10</td><td>-1.1</td><td>50.00</td><td>53.14</td><td>334.57</td><td></td><td></td></tr><tr><td>101.05</td><td>-1.0</td><td>50.00</td><td>47.70</td><td>338.02</td><td></td><td></td></tr><tr><td>101.05</td><td>-1.0</td><td>50.00</td><td>47.70</td><td>338.02</td><td></td><td></td></tr><tr><td>101.00</td><td>-0.8</td><td>50.00</td><td>42.28</td><td>341.48</td><td></td><td></td></tr><tr><td>100.50</td><td>0.2</td><td>50.00</td><td>-11.57</td><td>376.03</td><td></td><td></td></tr><tr><td>100.45</td><td>0.3</td><td>50.00</td><td>-16.93</td><td>379.48</td><td></td><td></td></tr><tr><td>100.45</td><td>0.3</td><td>50.00</td><td>-16.93</td><td>379.48</td><td></td><td></td></tr><tr><td>100.40</td><td>0.4</td><td>50.00</td><td>-22.28</td><td>382.94</td><td></td><td></td></tr><tr><td>100.00</td><td>1.3</td><td>50.00</td><td>-65.07</td><td>410.58</td><td></td><td></td></tr><tr><td>99.95</td><td>1.4</td><td>50.00</td><td>-70.42</td><td>414.03</td><td></td><td></td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.12247252 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 6.05 m Profillänge = 7.50 m</p>							106.15	-13.5	-	-	-			106.05	-13.2	-	-	-			106.00	-13.1	0.00	0.00	0.00			106.00	-13.1	0.00	0.00	0.00			105.95	-13.0	0.00	0.00	5.06			105.73	-12.4	2.04	25.31	25.31			105.68	-12.3	2.04	25.03	30.37			105.68	-12.3	2.48	30.37	30.37			105.64	-12.1	2.48	30.08	34.67			105.55	-11.9	3.64	43.26	43.25			105.50	-11.8	3.64	42.83	47.55			105.50	-11.8	4.04	47.55	47.55			105.45	-11.7	4.04	47.02	52.30			105.45	-11.7	4.49	52.31	52.30			105.40	-11.5	4.49	51.72	57.06			105.40	-11.5	4.95	57.06	57.06			105.35	-11.4	4.95	56.41	61.81			105.30	-11.3	5.91	66.57	66.57			105.25	-11.1	5.91	65.80	71.32			105.25	-11.1	4.94	54.96	54.96			105.20	-11.0	4.94	54.32	57.54			105.05	-10.6	5.00	53.04	65.28			105.00	-10.5	5.00	52.39	67.85			105.00	-10.5	5.00	52.39	67.85			104.96	-10.4	5.00	51.85	68.93			104.96	-10.4	5.00	51.85	68.93			104.92	-10.3	5.00	51.31	70.00			104.92	-10.3	5.00	51.31	70.00			104.87	-10.1	5.00	50.66	71.30			104.46	-9.1	5.00	45.48	81.69			104.41	-9.0	5.00	44.83	82.98			104.41	-9.0	5.00	44.83	82.98			104.36	-8.8	5.00	44.19	84.28			103.46	-6.6	5.00	32.79	107.65			103.41	-6.4	5.00	32.17	108.94			103.41	-6.4	5.00	32.17	108.94			103.36	-6.3	5.00	31.54	110.24			102.50	-4.2	5.00	21.18	132.31			102.45	-4.1	5.00	20.59	133.61			102.45	-4.1	5.00	20.59	241.28			102.40	-4.0	5.00	20.00	244.74			102.40	-4.0	50.00	199.96	244.74			102.35	-3.9	50.00	194.08	248.19			102.15	-3.4	50.00	170.76	262.01			102.10	-3.3	50.00	164.97	265.47			102.10	-3.3	50.00	164.97	265.47			102.05	-3.2	50.00	159.21	268.92			101.50	-1.9	50.00	97.08	306.93			101.45	-1.8	50.00	91.54	310.38			101.45	-1.8	50.00	91.54	310.38			101.40	-1.7	50.00	86.01	313.84			101.10	-1.1	50.00	53.14	334.57			101.05	-1.0	50.00	47.70	338.02			101.05	-1.0	50.00	47.70	338.02			101.00	-0.8	50.00	42.28	341.48			100.50	0.2	50.00	-11.57	376.03			100.45	0.3	50.00	-16.93	379.48			100.45	0.3	50.00	-16.93	379.48			100.40	0.4	50.00	-22.28	382.94			100.00	1.3	50.00	-65.07	410.58			99.95	1.4	50.00	-70.42	414.03		
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102.15	-3.4	50.00	170.76	262.01																																																																																																																																																																																																																																																																																																																																																																																																																																													
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102.05	-3.2	50.00	159.21	268.92																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.50	-1.9	50.00	97.08	306.93																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.45	-1.8	50.00	91.54	310.38																																																																																																																																																																																																																																																																																																																																																																																																																																													
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101.40	-1.7	50.00	86.01	313.84																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.10	-1.1	50.00	53.14	334.57																																																																																																																																																																																																																																																																																																																																																																																																																																													
101.05	-1.0	50.00	47.70	338.02																																																																																																																																																																																																																																																																																																																																																																																																																																													
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101.00	-0.8	50.00	42.28	341.48																																																																																																																																																																																																																																																																																																																																																																																																																																													
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100.00	1.3	50.00	-65.07	410.58																																																																																																																																																																																																																																																																																																																																																																																																																																													
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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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 141.92 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 43.18 \text{ kN/m}</math> (<math>E_{ah,k} = 258.40 \text{ kN/m}</math>) <math>B_{v,k} = 107.93</math> Summe <math>V_{,k} = 77.16 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 137.50 / 1.40 = 98.21 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 963.26 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 170.31 - 0.00 + 49.65 + 0.00 = 219.96 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 219.96 / 963.26 = 0.23</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	106.00	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
106.00	105.25	0.00	S1: Auffüllungen															
105.25	102.45	0.00	S2: Auelehm															
102.45	99.95	55.00	s3: Flussskies, -sand															
Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1111																
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																

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



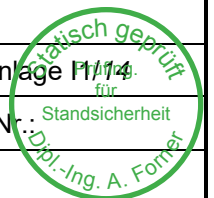
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>3    LF 2.1 (BS-T, ohne Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 02_BS 9_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 mue = 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 = 8.70 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> <div>Ausnutzungsgrad mue = 256.121 / 256.934 = 0.997 Bettungslager Bh,d = 256.121 kN/m Erdwiderstand Eph,d = 256.934 kN/m</div>		
Schnitt:    Anlage I1    Schnitt 9R		Seite Anlage I1/12
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):																																																																																																																																																																																																																																																																																																																							
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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																							
<div>Anker und Steifen</div> <div>N<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-103.18</td><td>-89.36</td><td>-89.36</td><td>-8.34</td><td>6.900E+4</td><td>2.100E+7</td><td>-113.94</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-13.2</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-13.5</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.6</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.8</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-14.1</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-14.2</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-14.4</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-14.5</td><td>0.0</td><td>-103.18</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-14.7</td><td>0.1</td><td>-103.18</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\00_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>-0.0114</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>m',k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>28.127</td><td>28.127</td><td>0.00</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><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><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><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><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><td>0.50</td></tr><tr><td>105.450</td><td>105.250</td><td>28.127</td><td>28.127</td><td>0.50</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>28.127</td><td>28.127</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.400</td><td>23.439</td><td>23.439</td><td>5.00</td><td>5.00</td></tr><tr><td>104.400</td><td>104.300</td><td>23.439</td><td>23.439</td><td>5.00</td><td>5.00</td></tr><tr><td>104.300</td><td>103.400</td><td>23.439</td><td>23.439</td><td>5.00</td><td>5.00</td></tr></table>			Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-103.18	-89.36	-89.36	-8.34	6.900E+4	2.100E+7	-113.94	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-13.2	0.0	-103.18	0.00	0.00	-0.90	106.95	-13.3	0.0	-103.18	0.00	0.00	-0.90	106.95	-13.3	0.0	-103.18	0.00	0.00	-0.80	106.95	-13.5	0.0	-103.18	0.00	0.00	-0.70	106.95	-13.6	0.0	-103.18	0.00	0.00	-0.60	106.95	-13.8	0.0	-103.18	0.00	0.00	-0.50	106.95	-13.9	0.0	-103.18	0.00	0.00	-0.40	106.95	-14.1	0.0	-103.18	0.00	0.00	-0.30	106.95	-14.2	0.0	-103.18	0.00	0.00	-0.20	106.95	-14.4	0.0	-103.18	0.00	0.00	-0.10	106.95	-14.5	0.0	-103.18	0.00	0.00	0.00	106.95	-14.7	0.1	-103.18	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0114	Schicht	UK	γ <sub>m,k</sub>	γ <sub>m',k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	106.950	28.127	28.127	0.00	0.00	106.950	106.886	28.127	28.127	0.00	0.00	106.886	106.450	28.127	28.127	0.00	0.00	106.450	106.198	28.127	28.127	0.00	0.00	106.198	105.500	28.127	28.127	0.00	0.00	105.500	105.450	28.127	28.127	0.00	0.50	105.450	105.250	28.127	28.127	0.50	2.50	105.250	105.000	28.127	28.127	2.50	5.00	105.000	104.400	23.439	23.439	5.00	5.00	104.400	104.300	23.439	23.439	5.00	5.00	104.300	103.400	23.439	23.439	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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																															
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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>43.374</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>98.749</td><td>43.374</td><td>46.246</td><td>5.00</td><td>5.00</td></tr><tr><td>98.749</td><td>80.000</td><td>46.246</td><td>123.146</td><td>5.00</td><td>5.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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>-130.69</td></tr><tr><td>99.45</td><td>98.75</td><td>-130.69</td><td>-160.45</td></tr><tr><td>98.75</td><td>80.00</td><td>-160.45</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>-103.2</td></tr><tr><td>106.95</td><td>-16.8</td><td>87.0</td><td>-4.0</td><td></td></tr><tr><td>106.89</td><td>-18.9</td><td>84.9</td><td>1.5</td><td></td></tr><tr><td>106.45</td><td>-33.5</td><td>70.8</td><td>35.4</td><td></td></tr><tr><td>106.20</td><td>-42.0</td><td>62.7</td><td>52.3</td><td></td></tr><tr><td>105.50</td><td>-65.4</td><td>40.1</td><td>88.1</td><td></td></tr><tr><td>105.45</td><td>-67.1</td><td>38.5</td><td>90.1</td><td></td></tr><tr><td>105.25</td><td>-73.8</td><td>31.6</td><td>97.1</td><td></td></tr><tr><td>105.00</td><td>-81.4</td><td>22.4</td><td>103.9</td><td></td></tr><tr><td>104.40</td><td>-98.8</td><td>2.7</td><td>111.4</td><td></td></tr><tr><td>104.30</td><td>-101.7</td><td>-0.6</td><td>111.5</td><td></td></tr><tr><td>103.40</td><td>-127.8</td><td>-30.3</td><td>97.6</td><td></td></tr><tr><td>102.55</td><td>-152.4</td><td>-58.3</td><td>59.9</td><td></td></tr><tr><td>102.45</td><td>-154.8</td><td>-63.0</td><td>53.9</td><td></td></tr><tr><td>102.40</td><td>-155.8</td><td>-64.8</td><td>50.7</td><td></td></tr><tr><td>101.80</td><td>-161.3</td><td>-71.9</td><td>8.3</td><td></td></tr><tr><td>101.45</td><td>-159.4</td><td>-63.7</td><td>-15.7</td><td></td></tr><tr><td>100.45</td><td>-133.6</td><td>7.5</td><td>-49.1</td><td></td></tr><tr><td>99.45</td><td>-121.5</td><td>39.5</td><td>-16.8</td><td></td></tr><tr><td>98.75</td><td>-132.0</td><td>0.0</td><td>0.0</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></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>-14.6</td><td>-14.1</td><td>-3.5</td><td>-89.4</td></tr><tr><td>106.95</td><td>-14.6</td><td>75.3</td><td>-3.5</td><td></td></tr><tr><td>106.89</td><td>-16.4</td><td>73.5</td><td>1.2</td><td></td></tr><tr><td>106.45</td><td>-29.2</td><td>61.2</td><td>30.6</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	43.374	5.00	5.00	99.449	98.749	43.374	46.246	5.00	5.00	98.749	80.000	46.246	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	-130.69	99.45	98.75	-130.69	-160.45	98.75	80.00	-160.45	-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	-103.2	106.95	-16.8	87.0	-4.0		106.89	-18.9	84.9	1.5		106.45	-33.5	70.8	35.4		106.20	-42.0	62.7	52.3		105.50	-65.4	40.1	88.1		105.45	-67.1	38.5	90.1		105.25	-73.8	31.6	97.1		105.00	-81.4	22.4	103.9		104.40	-98.8	2.7	111.4		104.30	-101.7	-0.6	111.5		103.40	-127.8	-30.3	97.6		102.55	-152.4	-58.3	59.9		102.45	-154.8	-63.0	53.9		102.40	-155.8	-64.8	50.7		101.80	-161.3	-71.9	8.3		101.45	-159.4	-63.7	-15.7		100.45	-133.6	7.5	-49.1		99.45	-121.5	39.5	-16.8		98.75	-132.0	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		106.95	-14.6	-14.1	-3.5	-89.4	106.95	-14.6	75.3	-3.5		106.89	-16.4	73.5	1.2		106.45	-29.2	61.2	30.6	
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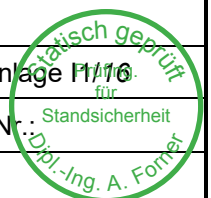


Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>106.20</div><div>-36.5</div><div>54.1</div><div>45.2</div></div><div><div>105.50</div><div>-56.9</div><div>34.5</div><div>76.1</div></div><div><div>105.45</div><div>-58.3</div><div>33.1</div><div>77.8</div></div><div><div>105.25</div><div>-64.2</div><div>27.2</div><div>83.8</div></div><div><div>105.00</div><div>-70.8</div><div>19.2</div><div>89.6</div></div><div><div>104.40</div><div>-85.9</div><div>2.1</div><div>96.0</div></div><div><div>104.30</div><div>-88.4</div><div>-0.7</div><div>96.1</div></div><div><div>103.40</div><div>-111.1</div><div>-26.3</div><div>84.0</div></div><div><div>102.55</div><div>-132.5</div><div>-50.5</div><div>51.3</div></div><div><div>102.45</div><div>-134.7</div><div>-54.5</div><div>46.1</div></div><div><div>102.40</div><div>-135.6</div><div>-56.1</div><div>43.3</div></div><div><div>101.80</div><div>-140.4</div><div>-62.2</div><div>6.7</div></div><div><div>101.45</div><div>-138.7</div><div>-55.1</div><div>-14.1</div></div><div><div>100.45</div><div>-116.3</div><div>6.8</div><div>-42.8</div></div><div><div>99.45</div><div>-105.8</div><div>34.4</div><div>-14.6</div></div><div><div>98.75</div><div>-114.9</div><div>0.0</div><div>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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-14.6</div><div>-14.1</div><div>-3.5</div><div>-89.4</div></div><div><div>106.95</div><div>-14.6</div><div>75.3</div><div>-3.5</div><div></div></div><div><div>106.89</div><div>-16.4</div><div>73.5</div><div>1.2</div><div></div></div><div><div>106.45</div><div>-29.2</div><div>61.2</div><div>30.6</div><div></div></div><div><div>106.20</div><div>-36.5</div><div>54.1</div><div>45.2</div><div></div></div><div><div>105.50</div><div>-56.9</div><div>34.5</div><div>76.1</div><div></div></div><div><div>105.45</div><div>-58.3</div><div>33.1</div><div>77.8</div><div></div></div><div><div>105.25</div><div>-64.2</div><div>27.2</div><div>83.8</div><div></div></div><div><div>105.00</div><div>-70.8</div><div>19.2</div><div>89.6</div><div></div></div><div><div>104.40</div><div>-85.9</div><div>2.1</div><div>96.0</div><div></div></div><div><div>104.30</div><div>-88.4</div><div>-0.7</div><div>96.1</div><div></div></div><div><div>103.40</div><div>-111.1</div><div>-26.3</div><div>84.0</div><div></div></div><div><div>102.55</div><div>-132.5</div><div>-50.5</div><div>51.3</div><div></div></div><div><div>102.45</div><div>-134.7</div><div>-54.5</div><div>46.1</div><div></div></div><div><div>102.40</div><div>-135.6</div><div>-56.1</div><div>43.3</div><div></div></div><div><div>101.80</div><div>-140.4</div><div>-62.2</div><div>6.7</div><div></div></div><div><div>101.45</div><div>-138.7</div><div>-55.1</div><div>-14.1</div><div></div></div><div><div>100.45</div><div>-116.3</div><div>6.8</div><div>-42.8</div><div></div></div><div><div>99.45</div><div>-105.8</div><div>34.4</div><div>-14.6</div><div></div></div><div><div>98.75</div><div>-114.9</div><div>0.0</div><div>0.0</div><div></div></div></div></div> 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<tr><td colspan="2">Schnitt:</td><td>Anlage I1</td><td>Schnitt 9R</td><td colspan="2">Seite Anlage I1/15</td></tr> <tr><td colspan="2">Kapitel:</td><td>3</td><td>LF 2.1 (BS-T, ohne Lasten)</td><td colspan="2">Archiv Nr.: 1115</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage I1	Schnitt 9R	Seite Anlage I1/15		Kapitel:		3	LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 1115		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) 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>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.84</td><td>-12.6</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>106.45</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-11.7</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>-10.9</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>105.45</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-10.5</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>105.05</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-10.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-7.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.2</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-6.1</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-6.1</td><td>2.14</td><td>13.02</td><td>13.02</td></tr><tr><td>102.45</td><td>-6.0</td><td>2.14</td><td>12.83</td><td>14.31</td></tr><tr><td>102.45</td><td>-6.0</td><td>0.85</td><td>5.10</td><td>5.10</td></tr><tr><td>102.40</td><td>-5.9</td><td>0.85</td><td>5.03</td><td>8.56</td></tr><tr><td>102.40</td><td>-5.9</td><td>1.45</td><td>8.56</td><td>8.56</td></tr><tr><td>102.35</td><td>-5.8</td><td>1.45</td><td>8.43</td><td>12.01</td></tr><tr><td>101.85</td><td>-4.9</td><td>9.52</td><td>46.56</td><td>46.56</td></tr><tr><td>101.80</td><td>-4.8</td><td>9.52</td><td>45.69</td><td>50.01</td></tr><tr><td>101.80</td><td>-4.8</td><td>10.42</td><td>50.01</td><td>50.01</td></tr><tr><td>101.75</td><td>-4.7</td><td>10.42</td><td>49.06</td><td>53.47</td></tr><tr><td>101.50</td><td>-4.2</td><td>16.65</td><td>70.74</td><td>70.74</td></tr><tr><td>101.45</td><td>-4.2</td><td>16.65</td><td>69.22</td><td>74.19</td></tr><tr><td>101.45</td><td>-4.2</td><td>17.84</td><td>74.20</td><td>74.19</td></tr><tr><td>101.40</td><td>-4.1</td><td>17.84</td><td>72.57</td><td>77.65</td></tr><tr><td>100.50</td><td>-2.4</td><td>50.00</td><td>122.13</td><td>139.83</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>117.70</td><td>143.28</td></tr><tr><td>100.45</td><td>-2.4</td><td>50.00</td><td>117.70</td><td>143.28</td></tr><tr><td>100.40</td><td>-2.3</td><td>50.00</td><td>113.27</td><td>146.74</td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>34.96</td><td>208.92</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.67</td><td>212.37</td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>30.67</td><td>212.37</td></tr></tbody></table>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-13.4	-	-	-	107.40	-13.3	-	-	-	107.00	-12.8	-	-	-	106.95	-12.7	-	-	-	106.95	-12.7	-	-	-	106.89	-12.7	-	-	-	106.89	-12.7	-	-	-	106.84	-12.6	-	-	-	106.50	-12.2	-	-	-	106.45	-12.1	-	-	-	106.45	-12.1	-	-	-	106.40	-12.0	-	-	-	106.25	-11.8	-	-	-	106.20	-11.8	-	-	-	106.20	-11.8	-	-	-	106.15	-11.7	-	-	-	105.55	-10.9	-	-	-	105.50	-10.9	-	-	-	105.50	-10.9	-	-	-	105.45	-10.8	-	-	-	105.45	-10.8	-	-	-	105.40	-10.7	-	-	-	105.30	-10.6	-	-	-	105.25	-10.5	-	-	-	105.25	-10.5	-	-	-	105.20	-10.4	-	-	-	105.05	-10.2	-	-	-	105.00	-10.2	-	-	-	105.00	-10.2	-	-	-	104.95	-10.1	-	-	-	104.45	-9.3	-	-	-	104.40	-9.3	-	-	-	104.40	-9.3	-	-	-	104.35	-9.2	-	-	-	104.35	-9.2	-	-	-	104.30	-9.1	-	-	-	104.30	-9.1	-	-	-	104.25	-9.0	-	-	-	103.45	-7.7	-	-	-	103.40	-7.6	-	-	-	103.40	-7.6	-	-	-	103.35	-7.6	-	-	-	102.60	-6.3	-	-	-	102.55	-6.2	0.00	0.00	0.00	102.55	-6.2	0.00	0.00	11.73	102.50	-6.1	0.00	0.00	13.02	102.50	-6.1	2.14	13.02	13.02	102.45	-6.0	2.14	12.83	14.31	102.45	-6.0	0.85	5.10	5.10	102.40	-5.9	0.85	5.03	8.56	102.40	-5.9	1.45	8.56	8.56	102.35	-5.8	1.45	8.43	12.01	101.85	-4.9	9.52	46.56	46.56	101.80	-4.8	9.52	45.69	50.01	101.80	-4.8	10.42	50.01	50.01	101.75	-4.7	10.42	49.06	53.47	101.50	-4.2	16.65	70.74	70.74	101.45	-4.2	16.65	69.22	74.19	101.45	-4.2	17.84	74.20	74.19	101.40	-4.1	17.84	72.57	77.65	100.50	-2.4	50.00	122.13	139.83	100.45	-2.4	50.00	117.70	143.28	100.45	-2.4	50.00	117.70	143.28	100.40	-2.3	50.00	113.27	146.74	99.50	-0.7	50.00	34.96	208.92	99.45	-0.6	50.00	30.67	212.37	99.45	-0.6	50.00	30.67	212.37
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102.40	-5.9	0.85	5.03	8.56																																																																																																																																																																																																																																																																																																																																																										
102.40	-5.9	1.45	8.56	8.56																																																																																																																																																																																																																																																																																																																																																										
102.35	-5.8	1.45	8.43	12.01																																																																																																																																																																																																																																																																																																																																																										
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100.50	-2.4	50.00	122.13	139.83																																																																																																																																																																																																																																																																																																																																																										
100.45	-2.4	50.00	117.70	143.28																																																																																																																																																																																																																																																																																																																																																										
100.45	-2.4	50.00	117.70	143.28																																																																																																																																																																																																																																																																																																																																																										
100.40	-2.3	50.00	113.27	146.74																																																																																																																																																																																																																																																																																																																																																										
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Kapitel:		3 LF 2.1 (BS-T, ohne 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>99.40 -0.5 50.00 26.37 215.83</div> <div>98.80 0.5 50.00 -25.04 257.28</div> <div>98.75 0.6 50.00 -29.32 260.74</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.09806859</div> <div>Theoretischer Fußpunkt = 98.749 m</div> <div>Einbindetiefe tg = 3.80 m</div> <div>Profillänge = 8.70 m</div> <div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k</div> <div>G,k = 164.63 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 0.00 kN/m</div> <div>Eav,k = 47.36 kN/m (Eah,k = 273.58 kN/m)</div> <div>Bv,k = 88.06</div> <div>Summe V,k = 123.93 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 99.63 bis 96.11 m) ==&gt; 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>98.75</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div> <div>Mantelfläche bis 98.75 m = 1.000 m²/m/m ==&gt; Rs1,d</div> <div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 203.50 / 1.40 = 145.36 kN/m</div> <div>Rd = Rb,d + Rs1,d = 1010.41 kN/m</div> <div>Einwirkungen</div> <div>V,d = G,d - G',k + Eav,d + Pv,d = 197.56 - 0.00 + 54.46 + 0.00 = 252.02 kN/m</div> <div>==&gt; µ = V,d / Rd = 252.02 / 1010.41 = 0.25</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	98.75	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung											
102.55	102.45	0.00	S2: Auelehm											
102.45	98.75	55.00	s3: Flussskies, -sand											
Schnitt:	Anlage I1 Schnitt 9R	Seite Anlage I1/17												
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 1117												
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>4    <b>LF 2.2 (BS-T, mit Lasten)</b></div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 03_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] [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 = 9.10 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 I1    Schnitt 9R		Seite Anlage I1/18
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>Ausnutzungsgrad <math>\mu_{ue} = 309.170 / 311.231 = 0.993</math> Bettungslager <math>B_{h,d} = 309.170 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 311.231 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_{d'}</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-124.75</td><td>-108.11</td><td>-108.11</td><td>-8.51</td><td>6.900E+4</td><td>2.100E+7</td><td>-137.84</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_{d'}</math></th><th><math>Q_{d'}</math></th><th><math>M_{d'}</math></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>-13.2</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-13.3</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-13.5</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-13.7</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-13.9</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-14.1</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-14.2</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-14.4</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-14.6</td><td>0.0</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-14.8</td><td>0.1</td><td>-124.75</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-15.0</td><td>0.1</td><td>-124.75</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\00_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>106.95</td><td>-0.0114</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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>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	-124.75	-108.11	-108.11	-8.51	6.900E+4	2.100E+7	-137.84	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	-13.2	0.0	-124.75	0.00	0.00	-0.90	106.95	-13.3	0.0	-124.75	0.00	0.00	-0.90	106.95	-13.3	0.0	-124.75	0.00	0.00	-0.80	106.95	-13.5	0.0	-124.75	0.00	0.00	-0.70	106.95	-13.7	0.0	-124.75	0.00	0.00	-0.60	106.95	-13.9	0.0	-124.75	0.00	0.00	-0.50	106.95	-14.1	0.0	-124.75	0.00	0.00	-0.40	106.95	-14.2	0.0	-124.75	0.00	0.00	-0.30	106.95	-14.4	0.0	-124.75	0.00	0.00	-0.20	106.95	-14.6	0.0	-124.75	0.00	0.00	-0.10	106.95	-14.8	0.1	-124.75	0.00	0.00	0.00	106.95	-15.0	0.1	-124.75	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0114	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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
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 für Standsicherheit Dipl.-Ing. A. Fortner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																		
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<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>98.349</td><td>51.043</td><td>51.453</td><td>5.00</td><td>5.00</td></tr><tr><td>98.349</td><td>80.000</td><td>51.453</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>-130.69</td></tr><tr><td>99.45</td><td>98.45</td><td>-130.69</td><td>-173.20</td></tr><tr><td>98.45</td><td>98.35</td><td>-173.20</td><td>-177.45</td></tr><tr><td>98.35</td><td>80.00</td><td>-177.45</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>-124.7</td></tr><tr><td>106.95</td><td>-18.1</td><td>105.0</td><td>-4.9</td><td></td></tr><tr><td>106.89</td><td>-20.4</td><td>102.5</td><td>1.7</td><td></td></tr><tr><td>106.45</td><td>-36.1</td><td>85.3</td><td>42.6</td><td></td></tr><tr><td>106.20</td><td>-45.3</td><td>75.3</td><td>62.9</td><td></td></tr><tr><td>105.68</td><td>-64.0</td><td>54.9</td><td>96.5</td><td></td></tr><tr><td>105.50</td><td>-70.5</td><td>47.7</td><td>105.8</td><td></td></tr><tr><td>105.40</td><td>-74.1</td><td>43.7</td><td>110.4</td><td></td></tr><tr><td>105.25</td><td>-79.5</td><td>37.5</td><td>116.5</td><td></td></tr><tr><td>105.00</td><td>-87.6</td><td>26.5</td><td>124.5</td><td></td></tr><tr><td>104.92</td><td>-90.2</td><td>23.2</td><td>126.5</td><td></td></tr><tr><td>104.40</td><td>-106.0</td><td>3.1</td><td>133.4</td><td></td></tr><tr><td>104.30</td><td>-109.0</td><td>-0.8</td><td>133.5</td><td></td></tr><tr><td>103.40</td><td>-136.5</td><td>-35.8</td><td>117.0</td><td></td></tr><tr><td>102.55</td><td>-162.5</td><td>-68.9</td><td>72.6</td><td></td></tr><tr><td>102.45</td><td>-165.0</td><td>-74.1</td><td>65.4</td><td></td></tr><tr><td>102.40</td><td>-166.0</td><td>-76.1</td><td>61.6</td><td></td></tr><tr><td>101.80</td><td>-171.5</td><td>-85.7</td><td>11.8</td><td></td></tr><tr><td>101.45</td><td>-169.6</td><td>-78.9</td><td>-17.3</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	98.349	51.043	51.453	5.00	5.00	98.349	80.000	51.453	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	-130.69	99.45	98.45	-130.69	-173.20	98.45	98.35	-173.20	-177.45	98.35	80.00	-177.45	-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	-124.7	106.95	-18.1	105.0	-4.9		106.89	-20.4	102.5	1.7		106.45	-36.1	85.3	42.6		106.20	-45.3	75.3	62.9		105.68	-64.0	54.9	96.5		105.50	-70.5	47.7	105.8		105.40	-74.1	43.7	110.4		105.25	-79.5	37.5	116.5		105.00	-87.6	26.5	124.5		104.92	-90.2	23.2	126.5		104.40	-106.0	3.1	133.4		104.30	-109.0	-0.8	133.5		103.40	-136.5	-35.8	117.0		102.55	-162.5	-68.9	72.6		102.45	-165.0	-74.1	65.4		102.40	-166.0	-76.1	61.6		101.80	-171.5	-85.7	11.8		101.45	-169.6	-78.9	-17.3	
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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>100.45</div><div>-143.0</div><div>-9.9</div><div>-67.8</div><div></div><div></div></div><div><div>99.45</div><div>-118.0</div><div>50.6</div><div>-38.9</div><div></div><div></div></div><div><div>98.45</div><div>-128.4</div><div>9.6</div><div>-0.5</div><div></div><div></div></div><div><div>98.35</div><div>-129.4</div><div>0.0</div><div>0.0</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>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>-108.1</div><div></div></div><div><div>106.95</div><div>-15.7</div><div>90.9</div><div>-4.3</div><div></div><div></div></div><div><div>106.89</div><div>-17.7</div><div>88.7</div><div>1.5</div><div></div><div></div></div><div><div>106.45</div><div>-31.4</div><div>73.8</div><div>36.9</div><div></div><div></div></div><div><div>106.20</div><div>-39.4</div><div>65.1</div><div>54.4</div><div></div><div></div></div><div><div>105.68</div><div>-55.6</div><div>47.3</div><div>83.5</div><div></div><div></div></div><div><div>105.50</div><div>-61.3</div><div>41.1</div><div>91.5</div><div></div><div></div></div><div><div>105.40</div><div>-64.4</div><div>37.6</div><div>95.4</div><div></div><div></div></div><div><div>105.25</div><div>-69.1</div><div>32.2</div><div>100.6</div><div></div><div></div></div><div><div>105.00</div><div>-76.2</div><div>22.7</div><div>107.5</div><div></div><div></div></div><div><div>104.92</div><div>-78.4</div><div>19.9</div><div>109.3</div><div></div><div></div></div><div><div>104.40</div><div>-92.1</div><div>2.5</div><div>115.1</div><div></div><div></div></div><div><div>104.30</div><div>-94.8</div><div>-0.8</div><div>115.2</div><div></div><div></div></div><div><div>103.40</div><div>-118.7</div><div>-31.1</div><div>100.8</div><div></div><div></div></div><div><div>102.55</div><div>-141.3</div><div>-59.7</div><div>62.3</div><div></div><div></div></div><div><div>102.45</div><div>-143.6</div><div>-64.2</div><div>56.0</div><div></div><div></div></div><div><div>102.40</div><div>-144.4</div><div>-65.9</div><div>52.8</div><div></div><div></div></div><div><div>101.80</div><div>-149.3</div><div>-74.2</div><div>9.6</div><div></div><div></div></div><div><div>101.45</div><div>-147.6</div><div>-68.3</div><div>-15.5</div><div></div><div></div></div><div><div>100.45</div><div>-124.5</div><div>-8.3</div><div>-59.1</div><div></div><div></div></div><div><div>99.45</div><div>-102.7</div><div>44.0</div><div>-33.9</div><div></div><div></div></div><div><div>98.45</div><div>-111.8</div><div>8.3</div><div>-0.4</div><div></div><div></div></div><div><div>98.35</div><div>-112.6</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><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>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>-108.1</div><div></div></div><div><div>106.95</div><div>-15.7</div><div>90.9</div><div>-4.3</div><div></div><div></div></div><div><div>106.89</div><div>-17.7</div><div>88.7</div><div>1.5</div><div></div><div></div></div><div><div>106.45</div><div>-31.4</div><div>73.8</div><div>36.9</div><div></div><div></div></div><div><div>106.20</div><div>-39.4</div><div>65.1</div><div>54.4</div><div></div><div></div></div><div><div>105.68</div><div>-55.6</div><div>47.3</div><div>83.5</div><div></div><div></div></div><div><div>105.50</div><div>-61.3</div><div>41.1</div><div>91.5</div><div></div><div></div></div><div><div>105.40</div><div>-64.4</div><div>37.6</div><div>95.4</div><div></div><div></div></div><div><div>105.25</div><div>-69.1</div><div>32.2</div><div>100.6</div><div></div><div></div></div><div><div>105.00</div><div>-76.2</div><div>22.7</div><div>107.5</div><div></div><div></div></div><div><div>104.92</div><div>-78.4</div><div>19.9</div><div>109.3</div><div></div><div></div></div><div><div>104.40</div><div>-92.1</div><div>2.5</div><div>115.1</div><div></div><div></div></div><div><div>104.30</div><div>-94.8</div><div>-0.8</div><div>115.2</div><div></div><div></div></div><div><div>103.40</div><div>-118.7</div><div>-31.1</div><div>100.8</div><div></div><div></div></div><div><div>102.55</div><div>-141.3</div><div>-59.7</div><div>62.3</div><div></div><div></div></div><div><div>102.45</div><div>-143.6</div><div>-64.2</div><div>56.0</div><div></div><div></div></div><div><div>102.40</div><div>-144.4</div><div>-65.9</div><div>52.8</div><div></div><div></div></div><div><div>101.80</div><div>-149.3</div><div>-74.2</div><div>9.6</div><div></div><div></div></div><div><div>101.45</div><div>-147.6</div><div>-68.3</div><div>-15.5</div><div></div><div></div></div><div><div>100.45</div><div>-124.5</div><div>-8.3</div><div>-59.1</div><div></div><div></div></div><div><div>99.45</div><div>-102.7</div><div>44.0</div><div>-33.9</div><div></div><div></div></div><div><div>98.45</div><div>-111.8</div><div>8.3</div><div>-0.4</div><div></div><div></div></div><div><div>98.35</div><div>-112.6</div><div>0.0</div><div>0.0</div><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><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>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>0.0</div><div>0.0</div><div>0.0</div><div></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><div><div>106.89</div><div>0.0</div><div>0.0</div><div>0.0</div><div></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></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage I1</td><td colspan="2">Schnitt 9R</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">4</td><td colspan="2">LF 2.2 (BS-T, mit 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 I1		Schnitt 9R		Kapitel:		4		LF 2.2 (BS-T, mit Lasten)		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025							
Schnitt:		Anlage I1		Schnitt 9R																									
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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>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.00</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.95</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.89</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.50</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.15</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.73</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.68</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.64</td><td>-11.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-11.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-11.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-10.9</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>104.92</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.92</td><td>-10.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.86</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</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>104.35</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>104.25</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.40</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-6.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-6.7</td><td>0.00</td><td>0.00</td><td>11.73</td></tr></table>						106.20	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	104.40	0.0	0.0	0.0	104.30	0.0	0.0	0.0	103.40	0.0	0.0	0.0	102.55	0.0	0.0	0.0	102.45	0.0	0.0	0.0	102.40	0.0	0.0	0.0	101.80	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	98.35	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-13.6	-	-	-	107.45	-13.6	-	-	-	107.45	-13.6	-	-	-	107.40	-13.5	-	-	-	107.00	-13.1	-	-	-	106.95	-13.0	-	-	-	106.95	-13.0	-	-	-	106.89	-12.9	-	-	-	106.50	-12.5	-	-	-	106.45	-12.4	-	-	-	106.40	-12.4	-	-	-	106.25	-12.2	-	-	-	106.20	-12.1	-	-	-	106.15	-12.1	-	-	-	105.73	-11.6	-	-	-	105.68	-11.5	-	-	-	105.64	-11.4	-	-	-	105.55	-11.3	-	-	-	105.50	-11.3	-	-	-	105.45	-11.2	-	-	-	105.45	-11.2	-	-	-	105.40	-11.1	-	-	-	105.35	-11.1	-	-	-	105.30	-11.0	-	-	-	105.25	-11.0	-	-	-	105.20	-10.9	-	-	-	105.05	-10.7	-	-	-	105.00	-10.6	-	-	-	105.00	-10.6	-	-	-	104.95	-10.5	-	-	-	104.92	-10.5	-	-	-	104.92	-10.5	-	-	-	104.86	-10.4	-	-	-	104.45	-9.8	-	-	-	104.40	-9.8	-	-	-	104.40	-9.8	-	-	-	104.35	-9.7	-	-	-	104.35	-9.7	-	-	-	104.30	-9.6	-	-	-	104.25	-9.5	-	-	-	103.45	-8.3	-	-	-	103.40	-8.2	-	-	-	103.40	-8.2	-	-	-	103.35	-8.1	-	-	-	102.60	-6.8	-	-	-	102.55	-6.7	0.00	0.00	0.00	102.55	-6.7	0.00	0.00	11.73
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statisch geprüft  
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Standsicherheit  
Dipl.-Ing. A. Forner

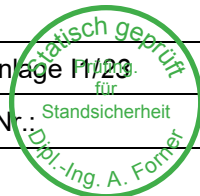
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div><div>102.50</div><div>-6.6</div><div>0.00</div><div>0.00</div><div>13.02</div></div><div><div>102.50</div><div>-6.6</div><div>1.96</div><div>13.02</div><div>13.02</div></div><div><div>102.45</div><div>-6.5</div><div>1.96</div><div>12.85</div><div>14.31</div></div><div><div>102.45</div><div>-6.5</div><div>0.78</div><div>5.11</div><div>5.10</div></div><div><div>102.40</div><div>-6.4</div><div>0.78</div><div>5.03</div><div>8.56</div></div><div><div>102.40</div><div>-6.4</div><div>1.33</div><div>8.56</div><div>8.56</div></div><div><div>102.35</div><div>-6.4</div><div>1.33</div><div>8.44</div><div>12.01</div></div><div><div>101.85</div><div>-5.4</div><div>8.55</div><div>46.56</div><div>46.56</div></div><div><div>101.80</div><div>-5.4</div><div>8.55</div><div>45.78</div><div>50.01</div></div><div><div>101.80</div><div>-5.4</div><div>9.34</div><div>50.01</div><div>50.01</div></div><div><div>101.75</div><div>-5.3</div><div>9.34</div><div>49.16</div><div>53.47</div></div><div><div>101.50</div><div>-4.8</div><div>14.72</div><div>70.74</div><div>70.74</div></div><div><div>101.45</div><div>-4.7</div><div>14.72</div><div>69.39</div><div>74.19</div></div><div><div>101.45</div><div>-4.7</div><div>15.74</div><div>74.20</div><div>74.19</div></div><div><div>101.40</div><div>-4.6</div><div>15.74</div><div>72.75</div><div>77.65</div></div><div><div>100.50</div><div>-3.0</div><div>46.63</div><div>139.83</div><div>139.82</div></div><div><div>100.45</div><div>-2.9</div><div>46.63</div><div>135.72</div><div>143.28</div></div><div><div>100.45</div><div>-2.9</div><div>49.23</div><div>143.29</div><div>143.28</div></div><div><div>100.40</div><div>-2.8</div><div>49.23</div><div>138.96</div><div>146.73</div></div><div><div>99.50</div><div>-1.3</div><div>50.00</div><div>64.04</div><div>208.91</div></div><div><div>99.45</div><div>-1.2</div><div>50.00</div><div>59.85</div><div>212.37</div></div><div><div>99.45</div><div>-1.2</div><div>50.00</div><div>59.85</div><div>212.37</div></div><div><div>99.40</div><div>-1.1</div><div>50.00</div><div>55.67</div><div>215.82</div></div><div><div>98.50</div><div>0.4</div><div>50.00</div><div>-18.89</div><div>278.00</div></div><div><div>98.45</div><div>0.5</div><div>50.00</div><div>-23.01</div><div>281.45</div></div><div><div>98.45</div><div>0.5</div><div>50.00</div><div>-23.01</div><div>281.45</div></div><div><div>98.40</div><div>0.5</div><div>50.00</div><div>-27.14</div><div>284.91</div></div><div><div>98.40</div><div>0.5</div><div>50.00</div><div>-27.14</div><div>284.91</div></div><div><div>98.35</div><div>0.6</div><div>50.00</div><div>-31.26</div><div>288.36</div></div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09452155 Theoretischer Fußpunkt = 98.349 m</div><div>Einbindetiefe tg = 4.20 m Profillänge = 9.10 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 172.20 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 58.49 kN/m (Eah,k = 335.47 kN/m) Bv,k = 106.36 Summe V,k = 124.33 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 99.23 bis 95.71 m) ==&gt; 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<div><div>von</div><div>bis</div><div>qs,k [kN/m²]</div><div>Bezeichnung</div></div><div><div>102.55</div><div>102.45</div><div>0.00</div><div>S2: Auelehm</div></div><div><div>102.45</div><div>98.35</div><div>55.00</div><div>s3: Flussskies, -sand</div></div></div><div>Mantelfläche bis 98.35 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 225.50 / 1.40 = 161.07 kN/m R,d = Rb,d + Rs1,d = 1026.12 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 206.64 - 0.00 + 67.27 + 0.00 = 273.91 kN/m ==&gt; µ = V,d / R,d = 273.91 / 1026.12 = 0.27</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/23
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 1123
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 9 Datei: 04_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</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 = 9.40 m</div>		
Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/24
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 1124
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 <math>\mu_e = 109.955 / 110.272 = 0.997</math></div> <div>Bettungslager <math>B_{h,d} = 109.955 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 110.272 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge <math>N_{d'}</math> <math>N(g+q+w)_k</math> <math>N(g+w)_k</math> <math>N_{w,k}</math> EA EI <math>N_{d'}</math></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 -396.64 -332.15 -247.99 -50.00 3.900E+7 2.100E+7 -442.42 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife 1</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y <math>w_{x,d}</math> <math>w_{y,d}</math> <math>N_{d'}</math> <math>Q_{d'}</math> <math>M_{d'}</math></div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -9.4 0.0 -397.09 0.00 0.00</div> <div>-7.47 103.72 -9.4 0.0 -397.09 0.00 0.00</div> <div>-7.47 103.72 -9.4 0.0 -397.09 0.00 0.00</div> <div>-6.64 103.72 -9.4 0.0 -397.09 0.00 0.00</div> <div>-5.81 103.72 -9.5 0.0 -397.09 0.00 0.00</div> <div>-4.98 103.72 -9.5 0.0 -397.09 0.00 0.00</div> <div>-4.15 103.72 -9.5 0.0 -397.09 0.00 0.00</div> <div>-3.32 103.72 -9.5 0.0 -397.09 0.00 0.00</div> <div>-2.49 103.72 -9.5 0.0 -397.09 0.00 0.00</div> <div>-1.66 103.72 -9.5 0.1 -397.09 0.00 0.00</div> <div>-0.83 103.72 -9.5 0.1 -397.09 0.00 0.00</div> <div>0.00 103.72 -9.5 0.1 -397.09 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 -0.0082</div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{a,k}</math> <math>\phi_{i,k}</math> <math>c(pas)_k</math> <math>c(akt)_k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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 I1	Schnitt 9R	Seite Anlage 11/25
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.: 11/25
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

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>41.812</td><td>0.00</td><td>0.00</td></tr><tr><td>100.699</td><td>99.799</td><td>41.812</td><td>45.505</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>99.699</td><td>45.505</td><td>45.915</td><td>0.00</td><td>0.00</td></tr><tr><td>99.699</td><td>99.299</td><td>45.915</td><td>47.557</td><td>0.00</td><td>0.00</td></tr><tr><td>99.299</td><td>80.000</td><td>47.557</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>-77.55</td></tr><tr><td>100.70</td><td>99.80</td><td>-77.55</td><td>-115.82</td></tr><tr><td>99.80</td><td>99.70</td><td>-115.82</td><td>-120.07</td></tr><tr><td>99.70</td><td>99.30</td><td>-120.07</td><td>-137.08</td></tr><tr><td>99.30</td><td>80.00</td><td>-137.08</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>-397.1</td></tr><tr><td>103.72</td><td>-223.6</td><td>193.9</td><td>-470.7</td><td></td></tr><tr><td>103.65</td><td>-226.0</td><td>189.0</td><td>-457.3</td><td></td></tr><tr><td>102.65</td><td>-261.3</td><td>110.3</td><td>-306.3</td><td></td></tr><tr><td>102.55</td><td>-264.9</td><td>101.5</td><td>-295.7</td><td></td></tr><tr><td>102.45</td><td>-267.4</td><td>96.8</td><td>-285.8</td><td></td></tr><tr><td>101.70</td><td>-273.9</td><td>90.1</td><td>-218.2</td><td></td></tr><tr><td>100.70</td><td>-265.3</td><td>120.7</td><td>-111.0</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	41.812	0.00	0.00	100.699	99.799	41.812	45.505	0.00	0.00	99.799	99.699	45.505	45.915	0.00	0.00	99.699	99.299	45.915	47.557	0.00	0.00	99.299	80.000	47.557	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	-77.55	100.70	99.80	-77.55	-115.82	99.80	99.70	-115.82	-120.07	99.70	99.30	-120.07	-137.08	99.30	80.00	-137.08	-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	-397.1	103.72	-223.6	193.9	-470.7		103.65	-226.0	189.0	-457.3		102.65	-261.3	110.3	-306.3		102.55	-264.9	101.5	-295.7		102.45	-267.4	96.8	-285.8		101.70	-273.9	90.1	-218.2		100.70	-265.3	120.7	-111.0	
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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																																																																																																																																																																																																																																																																																																																									
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102.65	-261.3	110.3	-306.3																																																																																																																																																																																																																																																																																																																									
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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>99.80</div><div>-275.8</div><div>69.1</div><div>-18.5</div></div><div><div>99.70</div><div>-275.5</div><div>57.6</div><div>-12.1</div></div><div><div>99.30</div><div>-269.9</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>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.69</div><div>-0.1</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.70</div><div>-27.4</div><div>-23.1</div><div>-10.9</div><div></div></div><div><div>107.45</div><div>-34.6</div><div>-30.1</div><div>-17.6</div><div></div></div><div><div>107.45</div><div>-80.1</div><div>-30.1</div><div>-46.7</div><div></div></div><div><div>106.70</div><div>-102.9</div><div>-53.7</div><div>-77.9</div><div></div></div><div><div>106.64</div><div>-104.7</div><div>-55.7</div><div>-81.0</div><div></div></div><div><div>105.74</div><div>-131.8</div><div>-83.1</div><div>-144.5</div><div></div></div><div><div>105.70</div><div>-132.9</div><div>-84.1</div><div>-147.6</div><div></div></div><div><div>105.50</div><div>-138.6</div><div>-89.5</div><div>-164.9</div><div></div></div><div><div>105.25</div><div>-145.9</div><div>-96.8</div><div>-188.2</div><div></div></div><div><div>104.65</div><div>-163.1</div><div>-121.9</div><div>-253.5</div><div></div></div><div><div>103.72</div><div>-190.6</div><div>-170.9</div><div>-388.7</div><div>-332.1</div></div><div><div>103.72</div><div>-190.6</div><div>161.3</div><div>-388.7</div><div></div></div><div><div>103.65</div><div>-192.7</div><div>157.1</div><div>-377.6</div><div></div></div><div><div>102.65</div><div>-223.4</div><div>89.6</div><div>-253.1</div><div></div></div><div><div>102.55</div><div>-226.5</div><div>82.1</div><div>-244.5</div><div></div></div><div><div>102.45</div><div>-228.8</div><div>78.0</div><div>-236.5</div><div></div></div><div><div>101.70</div><div>-234.4</div><div>72.5</div><div>-182.2</div><div></div></div><div><div>100.70</div><div>-226.1</div><div>101.2</div><div>-94.0</div><div></div></div><div><div>99.80</div><div>-235.2</div><div>58.8</div><div>-15.8</div><div></div></div><div><div>99.70</div><div>-235.0</div><div>49.1</div><div>-10.4</div><div></div></div><div><div>99.30</div><div>-230.5</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>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.69</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.70</div><div>-21.7</div><div>-7.6</div><div>-3.2</div><div></div></div><div><div>107.45</div><div>-27.5</div><div>-10.6</div><div>-5.4</div><div></div></div><div><div>107.45</div><div>-73.0</div><div>-10.6</div><div>-34.5</div><div></div></div><div><div>106.70</div><div>-91.6</div><div>-22.6</div><div>-46.7</div><div></div></div><div><div>106.64</div><div>-93.0</div><div>-23.7</div><div>-48.0</div><div></div></div><div><div>105.74</div><div>-117.6</div><div>-44.0</div><div>-78.3</div><div></div></div><div><div>105.70</div><div>-118.7</div><div>-45.0</div><div>-79.9</div><div></div></div><div><div>105.50</div><div>-124.4</div><div>-50.4</div><div>-89.4</div><div></div></div><div><div>105.25</div><div>-131.7</div><div>-57.7</div><div>-102.9</div><div></div></div><div><div>104.65</div><div>-148.9</div><div>-82.8</div><div>-144.8</div><div></div></div><div><div>103.72</div><div>-176.3</div><div>-131.8</div><div>-243.6</div><div>-248.0</div></div><div><div>103.72</div><div>-176.3</div><div>116.2</div><div>-243.6</div><div></div></div><div><div>103.65</div><div>-178.4</div><div>112.0</div><div>-235.6</div><div></div></div><div><div>102.65</div><div>-209.2</div><div>44.5</div><div>-156.2</div><div></div></div><div><div>102.55</div><div>-212.3</div><div>37.0</div><div>-152.1</div><div></div></div><div><div>102.45</div><div>-214.5</div><div>33.0</div><div>-148.6</div><div></div></div><div><div>101.70</div><div>-219.2</div><div>29.7</div><div>-127.6</div><div></div></div><div><div>100.70</div><div>-204.6</div><div>74.4</div><div>-75.4</div><div></div></div><div><div>99.80</div><div>-212.7</div><div>49.5</div><div>-13.4</div><div></div></div><div><div>99.70</div><div>-213.3</div><div>41.6</div><div>-8.9</div><div></div></div><div><div>99.30</div><div>-211.7</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>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.70</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.69</div><div>0.0</div><div>-0.1</div><div>0.0</div><div></div></div><div><div>107.70</div><div>-5.7</div><div>-15.6</div><div>-7.8</div><div></div></div><div><div>107.45</div><div>-7.1</div><div>-19.5</div><div>-12.2</div><div></div></div><div><div>106.70</div><div>-11.3</div><div>-31.2</div><div>-31.1</div><div></div></div><div><div>106.64</div><div>-11.7</div><div>-32.0</div><div>-32.9</div><div></div></div><div><div>105.74</div><div>-14.2</div><div>-39.1</div><div>-66.2</div><div></div></div></div></div>						Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/27	
Kapitel: 5		LF 3 (BS-T, mit Lasten)		Archiv Nr.: 127					
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025							

Statisch geprüft

für

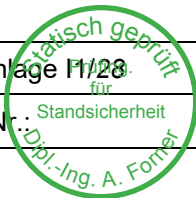
Standssicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																									
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<p>Weggrößen ([g+q],k) berechnet mit EI = 5.887E+5 kN·m²/m</p> 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-	-		105.74	-15.7	-	-	-		105.70	-15.5	-	-	-		105.70	-15.5	-	-	-		105.65	-15.3	-	-	-		105.55	-14.9	-	-	-		105.50	-14.7	-	-	-		105.50	-14.7	-	-	-		105.45	-14.5	-	-	-		105.30	-13.9	-	-	-		105.25	-13.7	-	-	-		105.25	-13.7	-	-	-		105.20	-13.5	-	-	-		104.70	-11.6	-	-	-		104.65	-11.5	-	-	-		104.65	-11.5	-	-	-		104.60	-11.3	-	-	-		103.77	-8.4	-	-	-		103.72	-8.3	-	-	-		103.72	-8.3	-	-	-		103.70	-8.2	-	-	-		103.70	-8.2	-	-	-		103.65	-8.1	-	-	-		103.65	-8.1	-	-	-		103.60	-7.9	-	-	-		102.70	-5.3	-	-	-		102.65	-5.2	-	-	-		102.65	-5.2	-	-	-		102.60	-5.1	-	-	-		102.60	-5.1	-	-	-	
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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><div>102.55</div><div>-5.0</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-5.0</div><div>0.00</div><div>0.00</div><div>11.73</div></div><div><div>102.50</div><div>-4.8</div><div>0.00</div><div>0.00</div><div>13.02</div></div><div><div>102.50</div><div>-4.8</div><div>2.70</div><div>13.02</div><div>13.02</div></div><div><div>102.45</div><div>-4.7</div><div>2.70</div><div>12.68</div><div>14.31</div></div><div><div>102.45</div><div>-4.7</div><div>1.09</div><div>5.10</div><div>5.10</div></div><div><div>102.40</div><div>-4.6</div><div>1.09</div><div>4.97</div><div>8.56</div></div><div><div>101.75</div><div>-3.0</div><div>17.59</div><div>53.47</div><div>53.47</div></div><div><div>101.70</div><div>-2.9</div><div>17.59</div><div>51.49</div><div>56.93</div></div><div><div>101.70</div><div>-2.9</div><div>19.45</div><div>56.93</div><div>56.93</div></div><div><div>101.65</div><div>-2.8</div><div>19.45</div><div>54.75</div><div>60.38</div></div><div><div>100.75</div><div>-0.9</div><div>50.00</div><div>45.83</div><div>122.56</div></div><div><div>100.70</div><div>-0.8</div><div>50.00</div><div>40.81</div><div>126.02</div></div><div><div>100.70</div><div>-0.8</div><div>50.00</div><div>40.81</div><div>126.02</div></div><div><div>100.65</div><div>-0.7</div><div>50.00</div><div>35.81</div><div>129.47</div></div><div><div>99.85</div><div>0.8</div><div>50.00</div><div>-42.29</div><div>184.75</div></div><div><div>99.80</div><div>0.9</div><div>50.00</div><div>-47.10</div><div>188.20</div></div><div><div>99.80</div><div>0.9</div><div>50.00</div><div>-47.10</div><div>188.20</div></div><div><div>99.75</div><div>1.0</div><div>50.00</div><div>-51.91</div><div>191.66</div></div><div><div>99.75</div><div>1.0</div><div>50.00</div><div>-51.91</div><div>191.66</div></div><div><div>99.70</div><div>1.1</div><div>50.00</div><div>-56.71</div><div>195.11</div></div><div><div>99.70</div><div>1.1</div><div>50.00</div><div>-56.71</div><div>195.11</div></div><div><div>99.65</div><div>1.2</div><div>50.00</div><div>-61.52</div><div>198.57</div></div><div><div>99.35</div><div>1.8</div><div>50.00</div><div>-90.31</div><div>219.29</div></div><div><div>99.30</div><div>1.9</div><div>50.00</div><div>-95.11</div><div>222.75</div></div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.10993291 Theoretischer Fußpunkt = 99.299 m</div><div>Einbindetiefe tg = 3.25 m Profillänge = 9.40 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 177.88 kN/m G',k = 0.00 kN/m Pv,k = 45.50 kN/m Eav,k = 58.69 kN/m (Eah,k = 340.74 kN/m) Bv,k = 39.34 Summe V,k = 242.73 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 100.18 bis 96.66 m) ==&gt; 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 99.30 55.00 s3: Flussskies, -sand Mantelfläche bis 99.30 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 173.25 / 1.40 = 123.75 kN/m Rd = Rb,d + Rs1,d = 988.80 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 213.45 - 0.00 + 68.56 + 54.60 = 336.61 kN/m ==&gt; µ = V,d / Rd = 336.61 / 988.80 = 0.34</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt:	Anlage I1 Schnitt 9R	Seite Anlage I1/29
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr. 1129
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>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: 05_BS 9_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 = 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 I1 Schnitt 9R		Seite Anlage I1/30
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1130
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 45.000 45.000</div> <div>Ausnutzungsgrad <math>\mu_e = 280.146 / 284.836 = 0.984</math></div> <div>Bettungslager <math>B_{h,d} = 280.146 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 284.836 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div><math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. y Neigung Länge <math>N_{d'}</math> <math>N(g+q+w)_k</math> <math>N(g+w)_k</math> <math>N_{w,k}</math> EA EI <math>N_{d'}</math></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 -241.50 -186.99 -186.99 -49.43 3.900E+7 2.100E+7 -238.41 Steife</div> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max <math>M_{d'}</math> [kN·m/m]: 0.00</div> <div>gelenkig an Verbauwand angeschlossen</div> <div>gegenüberliegende Seite gelenkig</div> <div>x y <math>w_{x,d}</math> <math>w_{y,d}</math> <math>N_{d'}</math> <math>Q_{d'}</math> <math>M_{d'}</math></div> <div>[m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-7.47 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-7.47 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-6.64 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-5.81 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-4.98 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-4.15 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-3.32 103.72 -10.5 0.0 -242.12 0.00 0.00</div> <div>-2.49 103.72 -10.5 0.1 -242.12 0.00 0.00</div> <div>-1.66 103.72 -10.5 0.1 -242.12 0.00 0.00</div> <div>-0.83 103.72 -10.5 0.1 -242.12 0.00 0.00</div> <div>0.00 103.72 -10.5 0.1 -242.12 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 -0.0082</div> <div>Bodenkennwerte</div> <div>Schicht UK <math>\gamma_{m,k}</math> <math>\gamma_{m',k}</math> <math>\phi_{i,k}</math> <math>c(pas)_k</math> <math>c(akt)_k</math> <math>d(p)/\phi_i</math> <math>d(a)/\phi_i</math> <math>q_c</math> <math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</div> <div>Schicht UK <math>k_{agh}</math> <math>k_{ach}</math> <math>\phi_{i,k}</math> <math>\delta</math> <math>\theta</math> <math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>)</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 I1		Schnitt 9R		Seite Anlage I1/31	
Kapitel:		6		LF 4 (BS-P, 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																																																																																																																																																																																																																																																																																																																							
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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>-242.1</td></tr><tr><td>103.72</td><td>-223.8</td><td>86.3</td><td>-281.9</td><td></td></tr><tr><td>103.65</td><td>-226.4</td><td>81.1</td><td>-276.1</td><td></td></tr><tr><td>102.65</td><td>-264.7</td><td>-3.5</td><td>-235.7</td><td></td></tr><tr><td>102.55</td><td>-268.7</td><td>-13.0</td><td>-236.5</td><td></td></tr><tr><td>102.45</td><td>-271.0</td><td>-17.2</td><td>-238.0</td><td></td></tr><tr><td>102.10</td><td>-273.2</td><td>-16.6</td><td>-244.2</td><td></td></tr><tr><td>101.70</td><td>-270.6</td><td>-3.6</td><td>-248.7</td><td></td></tr><tr><td>100.70</td><td>-243.1</td><td>77.5</td><td>-215.2</td><td></td></tr><tr><td>99.70</td><td>-232.6</td><td>110.6</td><td>-114.1</td><td></td></tr><tr><td>98.70</td><td>-248.8</td><td>63.9</td><td>-20.5</td><td></td></tr><tr><td>98.10</td><td>-252.9</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	-242.1	103.72	-223.8	86.3	-281.9		103.65	-226.4	81.1	-276.1		102.65	-264.7	-3.5	-235.7		102.55	-268.7	-13.0	-236.5		102.45	-271.0	-17.2	-238.0		102.10	-273.2	-16.6	-244.2		101.70	-270.6	-3.6	-248.7		100.70	-243.1	77.5	-215.2		99.70	-232.6	110.6	-114.1		98.70	-248.8	63.9	-20.5		98.10	-252.9	0.0	0.0	
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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>108.70</td><td>-22.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-22.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.70</td><td>-22.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-22.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.69</td><td>-22.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.64</td><td>-22.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-19.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.70</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.65</td><td>-19.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-19.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-18.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.70</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.65</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.65</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.60</td><td>-10.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-8.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.70</td><td>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-5.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.65</td><td>-5.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-5.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-5.6</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.50</td><td>-5.5</td><td>0.00</td><td>0.00</td><td>23.03</td></tr><tr><td>102.50</td><td>-5.5</td><td>4.22</td><td>23.03</td><td>23.03</td></tr><tr><td>102.45</td><td>-5.4</td><td>4.22</td><td>22.59</td><td>24.32</td></tr><tr><td>102.45</td><td>-5.4</td><td>4.66</td><td>24.92</td><td>24.92</td></tr><tr><td>102.40</td><td>-5.2</td><td>4.66</td><td>24.44</td><td>28.38</td></tr><tr><td>102.15</td><td>-4.7</td><td>9.62</td><td>45.65</td><td>45.65</td></tr><tr><td>102.10</td><td>-4.6</td><td>9.62</td><td>44.70</td><td>49.10</td></tr><tr><td>102.10</td><td>-4.6</td><td>10.57</td><td>49.10</td><td>49.10</td></tr><tr><td>102.05</td><td>-4.6</td><td>10.57</td><td>48.07</td><td>52.56</td></tr><tr><td>101.75</td><td>-4.0</td><td>18.40</td><td>73.29</td><td>73.28</td></tr><tr><td>101.70</td><td>-3.9</td><td>18.40</td><td>71.60</td><td>76.74</td></tr><tr><td>101.70</td><td>-3.9</td><td>19.73</td><td>76.74</td><td>76.74</td></tr></table>						101.70	0.0	0.0	0.0	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	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.70	-22.8	-	-	-	108.70	-22.8	-	-	-	108.70	-22.8	-	-	-	108.69	-22.8	-	-	-	108.69	-22.8	-	-	-	108.64	-22.6	-	-	-	107.75	-19.9	-	-	-	107.70	-19.7	-	-	-	107.70	-19.7	-	-	-	107.65	-19.6	-	-	-	107.50	-19.1	-	-	-	107.45	-19.0	-	-	-	107.45	-19.0	-	-	-	107.40	-18.8	-	-	-	106.75	-16.8	-	-	-	106.70	-16.7	-	-	-	106.70	-16.7	-	-	-	106.65	-16.5	-	-	-	105.70	-13.7	-	-	-	105.65	-13.5	-	-	-	105.65	-13.5	-	-	-	105.60	-13.4	-	-	-	105.55	-13.2	-	-	-	105.50	-13.1	-	-	-	105.50	-13.1	-	-	-	105.45	-13.0	-	-	-	105.30	-12.5	-	-	-	105.25	-12.4	-	-	-	105.25	-12.4	-	-	-	105.20	-12.2	-	-	-	104.70	-10.8	-	-	-	104.65	-10.7	-	-	-	104.65	-10.7	-	-	-	104.60	-10.6	-	-	-	103.77	-8.4	-	-	-	103.72	-8.2	-	-	-	103.72	-8.2	-	-	-	103.70	-8.2	-	-	-	103.70	-8.2	-	-	-	103.65	-8.1	-	-	-	103.65	-8.1	-	-	-	103.60	-7.9	-	-	-	102.70	-5.9	-	-	-	102.65	-5.8	-	-	-	102.65	-5.8	-	-	-	102.60	-5.7	-	-	-	102.60	-5.7	-	-	-	102.55	-5.6	0.00	0.00	0.00	102.55	-5.6	0.00	0.00	21.74	102.50	-5.5	0.00	0.00	23.03	102.50	-5.5	4.22	23.03	23.03	102.45	-5.4	4.22	22.59	24.32	102.45	-5.4	4.66	24.92	24.92	102.40	-5.2	4.66	24.44	28.38	102.15	-4.7	9.62	45.65	45.65	102.10	-4.6	9.62	44.70	49.10	102.10	-4.6	10.57	49.10	49.10	102.05	-4.6	10.57	48.07	52.56	101.75	-4.0	18.40	73.29	73.28	101.70	-3.9	18.40	71.60	76.74	101.70	-3.9	19.73	76.74	76.74
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102.45	-5.4	4.22	22.59	24.32																																																																																																																																																																																																																																																																																																																																																
102.45	-5.4	4.66	24.92	24.92																																																																																																																																																																																																																																																																																																																																																
102.40	-5.2	4.66	24.44	28.38																																																																																																																																																																																																																																																																																																																																																
102.15	-4.7	9.62	45.65	45.65																																																																																																																																																																																																																																																																																																																																																
102.10	-4.6	9.62	44.70	49.10																																																																																																																																																																																																																																																																																																																																																
102.10	-4.6	10.57	49.10	49.10																																																																																																																																																																																																																																																																																																																																																
102.05	-4.6	10.57	48.07	52.56																																																																																																																																																																																																																																																																																																																																																
101.75	-4.0	18.40	73.29	73.28																																																																																																																																																																																																																																																																																																																																																
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																											
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<table><tr><td>101.65</td><td>-3.8</td><td>19.73</td><td>74.95</td><td>80.19</td></tr><tr><td>100.75</td><td>-2.3</td><td>45.00</td><td>103.56</td><td>142.37</td></tr><tr><td>100.70</td><td>-2.2</td><td>45.00</td><td>100.15</td><td>145.82</td></tr><tr><td>100.70</td><td>-2.2</td><td>45.00</td><td>100.15</td><td>145.82</td></tr><tr><td>100.65</td><td>-2.2</td><td>45.00</td><td>96.77</td><td>149.28</td></tr><tr><td>99.75</td><td>-0.9</td><td>45.00</td><td>40.65</td><td>211.46</td></tr><tr><td>99.70</td><td>-0.8</td><td>45.00</td><td>37.74</td><td>214.91</td></tr><tr><td>99.70</td><td>-0.8</td><td>45.00</td><td>37.74</td><td>214.91</td></tr><tr><td>99.65</td><td>-0.8</td><td>45.00</td><td>34.86</td><td>218.36</td></tr><tr><td>98.75</td><td>0.3</td><td>45.00</td><td>-15.08</td><td>280.54</td></tr><tr><td>98.70</td><td>0.4</td><td>45.00</td><td>-17.79</td><td>284.00</td></tr><tr><td>98.70</td><td>0.4</td><td>45.00</td><td>-17.79</td><td>284.00</td></tr><tr><td>98.65</td><td>0.5</td><td>45.00</td><td>-20.49</td><td>287.45</td></tr><tr><td>98.15</td><td>1.1</td><td>45.00</td><td>-47.44</td><td>321.99</td></tr><tr><td>98.10</td><td>1.1</td><td>45.00</td><td>-50.13</td><td>325.45</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.06854247 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: Pv,k + G',k + Eav,k &gt;= Bv,k G,k = 200.58 kN/m G',k = 0.00 kN/m Pv,k = 45.50 kN/m Eav,k = 59.79 kN/m (Eah,k = 340.18 kN/m) Bv,k = 87.31 Summe V,k = 218.57 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) ==&gt; 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 102.55 102.45 0.00 S2: Auelehm 102.45 98.10 55.00 s3: Flussskies, -sand Mantelfläche bis 98.10 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 239.25 / 1.40 = 170.89 kN/m R,d = Rb,d + Rs1,d = 1035.94 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 270.79 - 0.00 + 76.24 + 61.43 = 408.45 kN/m ==&gt; µ = V,d / R,d = 408.45 / 1035.94 = 0.39</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			101.65	-3.8	19.73	74.95	80.19	100.75	-2.3	45.00	103.56	142.37	100.70	-2.2	45.00	100.15	145.82	100.70	-2.2	45.00	100.15	145.82	100.65	-2.2	45.00	96.77	149.28	99.75	-0.9	45.00	40.65	211.46	99.70	-0.8	45.00	37.74	214.91	99.70	-0.8	45.00	37.74	214.91	99.65	-0.8	45.00	34.86	218.36	98.75	0.3	45.00	-15.08	280.54	98.70	0.4	45.00	-17.79	284.00	98.70	0.4	45.00	-17.79	284.00	98.65	0.5	45.00	-20.49	287.45	98.15	1.1	45.00	-47.44	321.99	98.10	1.1	45.00	-50.13	325.45
101.65	-3.8	19.73	74.95	80.19																																																																									
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Schnitt: Anlage I1 Schnitt 9R		Seite Anlage I1/35																																																																											
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1135																																																																											
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																											

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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																															
<div>Anlage J1 Schnitt 1L</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 1 Datei: 00_BS 1_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><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> <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 = 7.11 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>103.94</td><td>10.000</td><td>10.000</td></tr><tr><td>103.94</td><td>102.84</td><td>5.000</td><td>5.000</td></tr><tr><td>102.84</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table> <p>Ausnutzungsgrad mue = 270.100 / 618.599 = 0.437 Bettungslager Bh,d = 270.100 kN/m Erdwiderstand Eph,d = 618.599 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	103.94	10.000	10.000	103.94	102.84	5.000	5.000	102.84	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																																									
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																																														
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Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/1																																															
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 11/17																																															
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Statisch geprüft

Ing. für Standsicherheit

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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 &gt; 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>102.440</td><td>31.261</td><td>32.903</td><td>5.00</td><td>5.00</td></tr><tr><td>102.440</td><td>101.439</td><td>32.903</td><td>37.006</td><td>5.00</td><td>5.00</td></tr><tr><td>101.439</td><td>101.389</td><td>37.006</td><td>37.211</td><td>5.00</td><td>5.00</td></tr><tr><td>101.389</td><td>100.439</td><td>37.211</td><td>41.110</td><td>5.00</td><td>5.00</td></tr><tr><td>100.439</td><td>100.339</td><td>41.110</td><td>41.520</td><td>5.00</td><td>5.00</td></tr><tr><td>100.339</td><td>80.000</td><td>41.520</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>-160.96</td></tr><tr><td>102.44</td><td>101.44</td><td>-160.96</td><td>-203.49</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	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	102.440	31.261	32.903	5.00	5.00	102.440	101.439	32.903	37.006	5.00	5.00	101.439	101.389	37.006	37.211	5.00	5.00	101.389	100.439	37.211	41.110	5.00	5.00	100.439	100.339	41.110	41.520	5.00	5.00	100.339	80.000	41.520	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	-160.96	102.44	101.44	-160.96	-203.49	<div>Statisch geprüft</div> <div>11/2g.</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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<div>101.44 101.39 -203.49 -205.61</div> <div>101.39 100.44 -205.61 -246.01</div> <div>100.44 100.34 -246.01 -250.26</div> <div>100.34 80.00 -250.26 -1114.70</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>-22.1</td><td>-23.2</td></tr><tr><td>105.45</td><td>-46.2</td><td>-20.8</td><td>-24.2</td></tr><tr><td>105.00</td><td>-46.1</td><td>-8.1</td><td>-30.5</td></tr><tr><td>104.44</td><td>-47.3</td><td>1.1</td><td>-32.2</td></tr><tr><td>103.94</td><td>-49.8</td><td>4.4</td><td>-30.6</td></tr><tr><td>103.44</td><td>-58.0</td><td>-11.0</td><td>-32.2</td></tr><tr><td>102.84</td><td>-68.5</td><td>-33.2</td><td>-45.2</td></tr><tr><td>102.44</td><td>-57.1</td><td>0.4</td><td>-51.4</td></tr><tr><td>101.44</td><td>-46.3</td><td>36.5</td><td>-27.3</td></tr><tr><td>101.39</td><td>-46.4</td><td>36.6</td><td>-25.5</td></tr><tr><td>100.44</td><td>-59.2</td><td>6.6</td><td>-0.3</td></tr><tr><td>100.34</td><td>-60.9</td><td>0.0</td><td>0.0</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>-8.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.76</td><td>-7.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-6.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-6.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-6.4</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>-5.7</td><td>7.48</td><td>42.79</td><td>42.79</td></tr><tr><td>105.50</td><td>-5.7</td><td>7.48</td><td>42.32</td><td>47.55</td></tr><tr><td>105.50</td><td>-5.7</td><td>8.40</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-5.6</td><td>8.40</td><td>47.01</td><td>52.30</td></tr><tr><td>105.45</td><td>-5.6</td><td>9.35</td><td>52.30</td><td>52.30</td></tr><tr><td>105.40</td><td>-5.5</td><td>9.35</td><td>51.71</td><td>57.06</td></tr><tr><td>105.05</td><td>-5.1</td><td>10.00</td><td>50.89</td><td>90.34</td></tr><tr><td>105.00</td><td>-5.0</td><td>10.00</td><td>50.26</td><td>95.10</td></tr><tr><td>105.00</td><td>-5.0</td><td>10.00</td><td>50.26</td><td>95.10</td></tr><tr><td>104.95</td><td>-5.0</td><td>10.00</td><td>49.63</td><td>97.62</td></tr><tr><td>104.50</td><td>-4.4</td><td>10.00</td><td>43.99</td><td>120.36</td></tr><tr><td>104.44</td><td>-4.3</td><td>10.00</td><td>43.37</td><td>122.89</td></tr><tr><td>104.44</td><td>-4.3</td><td>10.00</td><td>43.37</td><td>122.89</td></tr><tr><td>104.39</td><td>-4.3</td><td>10.00</td><td>42.75</td><td>125.41</td></tr><tr><td>103.99</td><td>-3.8</td><td>10.00</td><td>37.84</td><td>145.63</td></tr><tr><td>103.94</td><td>-3.7</td><td>10.00</td><td>37.23</td><td>148.15</td></tr><tr><td>103.94</td><td>-3.7</td><td>5.00</td><td>18.61</td><td>101.53</td></tr><tr><td>103.89</td><td>-3.7</td><td>5.00</td><td>18.31</td><td>102.82</td></tr><tr><td>103.49</td><td>-3.2</td><td>5.00</td><td>15.92</td><td>113.13</td></tr><tr><td>103.44</td><td>-3.1</td><td>5.00</td><td>15.63</td><td>114.42</td></tr><tr><td>103.44</td><td>-3.1</td><td>5.00</td><td>15.63</td><td>114.42</td></tr><tr><td>103.39</td><td>-3.1</td><td>5.00</td><td>15.33</td><td>115.71</td></tr><tr><td>102.89</td><td>-2.5</td><td>5.00</td><td>12.42</td><td>128.60</td></tr><tr><td>102.84</td><td>-2.4</td><td>5.00</td><td>12.13</td><td>129.89</td></tr><tr><td>102.84</td><td>-2.4</td><td>50.00</td><td>121.30</td><td>233.92</td></tr><tr><td>102.79</td><td>-2.4</td><td>50.00</td><td>118.43</td><td>237.38</td></tr><tr><td>102.49</td><td>-2.0</td><td>50.00</td><td>101.40</td><td>258.11</td></tr><tr><td>102.44</td><td>-2.0</td><td>50.00</td><td>98.59</td><td>261.56</td></tr><tr><td>102.44</td><td>-2.0</td><td>50.00</td><td>98.59</td><td>261.56</td></tr><tr><td>102.39</td><td>-1.9</td><td>50.00</td><td>95.80</td><td>265.02</td></tr><tr><td>101.49</td><td>-0.9</td><td>50.00</td><td>46.94</td><td>327.21</td></tr><tr><td>101.44</td><td>-0.9</td><td>50.00</td><td>44.30</td><td>330.67</td></tr><tr><td>101.44</td><td>-0.9</td><td>50.00</td><td>44.30</td><td>330.67</td></tr><tr><td>101.39</td><td>-0.8</td><td>50.00</td><td>41.66</td><td>334.12</td></tr><tr><td>101.39</td><td>-0.8</td><td>50.00</td><td>41.66</td><td>334.12</td></tr><tr><td>101.34</td><td>-0.8</td><td>50.00</td><td>39.02</td><td>337.58</td></tr><tr><td>100.49</td><td>0.1</td><td>50.00</td><td>-5.40</td><td>396.31</td></tr><tr><td>100.44</td><td>0.2</td><td>50.00</td><td>-8.00</td><td>399.77</td></tr><tr><td>100.44</td><td>0.2</td><td>50.00</td><td>-8.00</td><td>399.77</td></tr></table>						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	101.44	0.0	0.0	0.0	101.39	0.0	0.0	0.0	100.44	0.0	0.0	0.0	100.34	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.2	-	-	-	107.40	-8.1	-	-	-	106.76	-7.3	-	-	-	106.71	-7.2	-	-	-	106.71	-7.2	-	-	-	106.66	-7.1	-	-	-	106.45	-6.9	-	-	-	106.40	-6.8	-	-	-	106.40	-6.8	-	-	-	106.35	-6.8	-	-	-	106.05	-6.4	-	-	-	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	-5.7	7.48	42.79	42.79	105.50	-5.7	7.48	42.32	47.55	105.50	-5.7	8.40	47.55	47.55	105.45	-5.6	8.40	47.01	52.30	105.45	-5.6	9.35	52.30	52.30	105.40	-5.5	9.35	51.71	57.06	105.05	-5.1	10.00	50.89	90.34	105.00	-5.0	10.00	50.26	95.10	105.00	-5.0	10.00	50.26	95.10	104.95	-5.0	10.00	49.63	97.62	104.50	-4.4	10.00	43.99	120.36	104.44	-4.3	10.00	43.37	122.89	104.44	-4.3	10.00	43.37	122.89	104.39	-4.3	10.00	42.75	125.41	103.99	-3.8	10.00	37.84	145.63	103.94	-3.7	10.00	37.23	148.15	103.94	-3.7	5.00	18.61	101.53	103.89	-3.7	5.00	18.31	102.82	103.49	-3.2	5.00	15.92	113.13	103.44	-3.1	5.00	15.63	114.42	103.44	-3.1	5.00	15.63	114.42	103.39	-3.1	5.00	15.33	115.71	102.89	-2.5	5.00	12.42	128.60	102.84	-2.4	5.00	12.13	129.89	102.84	-2.4	50.00	121.30	233.92	102.79	-2.4	50.00	118.43	237.38	102.49	-2.0	50.00	101.40	258.11	102.44	-2.0	50.00	98.59	261.56	102.44	-2.0	50.00	98.59	261.56	102.39	-1.9	50.00	95.80	265.02	101.49	-0.9	50.00	46.94	327.21	101.44	-0.9	50.00	44.30	330.67	101.44	-0.9	50.00	44.30	330.67	101.39	-0.8	50.00	41.66	334.12	101.39	-0.8	50.00	41.66	334.12	101.34	-0.8	50.00	39.02	337.58	100.49	0.1	50.00	-5.40	396.31	100.44	0.2	50.00	-8.00	399.77	100.44	0.2	50.00	-8.00	399.77
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105.95	-6.2	0.00	0.00	4.75																																																																																																																																																																																																																																																																																																																																								
105.55	-5.7	7.48	42.79	42.79																																																																																																																																																																																																																																																																																																																																								
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105.45	-5.6	8.40	47.01	52.30																																																																																																																																																																																																																																																																																																																																								
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104.95	-5.0	10.00	49.63	97.62																																																																																																																																																																																																																																																																																																																																								
104.50	-4.4	10.00	43.99	120.36																																																																																																																																																																																																																																																																																																																																								
104.44	-4.3	10.00	43.37	122.89																																																																																																																																																																																																																																																																																																																																								
104.44	-4.3	10.00	43.37	122.89																																																																																																																																																																																																																																																																																																																																								
104.39	-4.3	10.00	42.75	125.41																																																																																																																																																																																																																																																																																																																																								
103.99	-3.8	10.00	37.84	145.63																																																																																																																																																																																																																																																																																																																																								
103.94	-3.7	10.00	37.23	148.15																																																																																																																																																																																																																																																																																																																																								
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102.39	-1.9	50.00	95.80	265.02																																																																																																																																																																																																																																																																																																																																								
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101.39	-0.8	50.00	41.66	334.12																																																																																																																																																																																																																																																																																																																																								
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101.34	-0.8	50.00	39.02	337.58																																																																																																																																																																																																																																																																																																																																								
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Statisch geprüft

11/4g. 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>100.390.250.00-10.60403.22</div><div>100.390.250.00-10.60403.22</div><div>100.340.350.00-13.21406.68</div></div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05961718 Theoretischer Fußpunkt = 100.339 m</div><div>Einbindetiefe tg = 5.66 m Profillänge = 7.11 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}</math> <math>G_k = 134.54 \text{ kN/m}</math> <math>G'_k = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 37.21 \text{ kN/m}</math> (<math>E_{ah,k} = 207.59 \text{ kN/m}</math>) <math>B_{v,k} = 87.99</math> Summe <math>V_k = 83.76 \text{ kN/m}</math> (Druck)</div><div>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 101.22 bis 97.70 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></div><div>Mantelreibung<div><div>vonbisqs,k [kN/m²]Bezeichnung</div><div>106.00103.940.00S1: Auffüllungen</div><div>103.94102.840.00S2: Auelehm</div><div>102.84100.3455.00s3: Flussskies, -sand</div></div>Mantelfläche bis 100.34 m = 1.000 m²/m/m <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 137.50 / 1.40 = 98.21 \text{ kN/m}</math> <math>R_d = R_{b,d} + R_{s1,d} = 963.26 \text{ kN/m}</math></div><div>Einwirkungen <math>V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 161.45 - 0.00 + 42.79 + 0.00 = 204.24 \text{ kN/m}</math> <math>\implies \mu = V_d / R_d = 204.24 / 963.26 = 0.21</math></div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/5
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 11/5g. 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>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: 01_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 = 7.15 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 = 305.980 / 604.612 = 0.506 Bettungslager Bh,d = 305.980 kN/m Erdwiderstand Eph,d = 604.612 kN/m</div>		
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/6
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr. 11/6
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><thead><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,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</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 &lt;&gt; 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><thead><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></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 colspan="2">[kN/m²]</th></tr></thead><tbody><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>102.491</td><td>34.828</td><td>36.258</td><td>5.00</td><td>5.00</td></tr><tr><td>102.491</td><td>102.441</td><td>36.258</td><td>36.463</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>101.445</td><td>36.463</td><td>40.550</td><td>5.00</td><td>5.00</td></tr><tr><td>101.445</td><td>101.395</td><td>40.550</td><td>40.755</td><td>5.00</td><td>5.00</td></tr><tr><td>101.395</td><td>100.448</td><td>40.755</td><td>44.638</td><td>5.00</td><td>5.00</td></tr><tr><td>100.448</td><td>100.299</td><td>44.638</td><td>45.251</td><td>5.00</td><td>5.00</td></tr><tr><td>100.299</td><td>80.000</td><td>45.251</td><td>128.508</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> <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>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></tbody></table> <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>106.40</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>102.49</td><td>-143.95</td><td>-158.78</td></tr></tbody></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]		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	102.491	34.828	36.258	5.00	5.00	102.491	102.441	36.258	36.463	5.00	5.00	102.441	101.445	36.463	40.550	5.00	5.00	101.445	101.395	40.550	40.755	5.00	5.00	101.395	100.448	40.755	44.638	5.00	5.00	100.448	100.299	44.638	45.251	5.00	5.00	100.299	80.000	45.251	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	102.49	-143.95	-158.78	<div>Statisch geprüft</div> <div>11/7g.</div> <div>für</div> <div>Standssicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Seite Anlage J1/7
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	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	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	102.491	34.828	36.258	5.00	5.00																																																																																																																																																																																																																																																																																																											
102.491	102.441	36.258	36.463	5.00	5.00																																																																																																																																																																																																																																																																																																											
102.441	101.445	36.463	40.550	5.00	5.00																																																																																																																																																																																																																																																																																																											
101.445	101.395	40.550	40.755	5.00	5.00																																																																																																																																																																																																																																																																																																											
101.395	100.448	40.755	44.638	5.00	5.00																																																																																																																																																																																																																																																																																																											
100.448	100.299	44.638	45.251	5.00	5.00																																																																																																																																																																																																																																																																																																											
100.299	80.000	45.251	128.508	5.00	5.00																																																																																																																																																																																																																																																																																																											
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[-]	[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																																																																																																																																																																																																																																																																																																										
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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	102.49	-143.95	-158.78																																																																																																																																																																																																																																																																																																													
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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>102.49102.44-158.78-160.90</div><div>102.44101.44-160.90-203.25</div><div>101.44101.39-203.25-205.37</div><div>101.39100.45-205.37-245.61</div><div>100.45100.30-245.61-251.96</div><div>100.3080.00-251.96-1114.70</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>105.00-46.6-13.7-40.0</div><div>104.44-45.8-1.6-44.0</div><div>103.94-46.73.6-43.3</div><div>103.44-54.5-12.9-45.5</div><div>102.84-64.6-37.0-60.2</div><div>102.49-51.7-1.5-66.6</div><div>102.44-50.12.7-66.6</div><div>101.44-34.945.8-35.8</div><div>101.39-34.945.9-33.5</div><div>100.45-47.211.7-0.9</div><div>100.30-49.30.00.0</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>106.71-16.8-7.4-1.8</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>105.00-40.5-12.0-34.9</div><div>104.44-39.9-1.4-38.3</div><div>103.94-40.73.1-37.7</div><div>103.44-47.4-11.1-39.6</div><div>102.84-56.2-32.0-52.3</div><div>102.49-44.9-1.2-57.9</div><div>102.44-43.62.5-57.8</div><div>101.44-30.439.8-31.1</div><div>101.39-30.439.9-29.1</div><div>100.45-41.110.1-0.8</div><div>100.30-42.90.00.0</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>105.00-40.5-12.0-34.9</div><div>104.44-39.9-1.4-38.3</div><div>103.94-40.73.1-37.7</div><div>103.44-47.4-11.1-39.6</div><div>102.84-56.2-32.0-52.3</div><div>102.49-44.9-1.2-57.9</div><div>102.44-43.62.5-57.8</div><div>101.44-30.439.8-31.1</div><div>101.39-30.439.9-29.1</div><div>100.45-41.110.1-0.8</div><div>100.30-42.90.00.0</div></div></div><div><div>Schnittgrößen (q,k)</div></div></div>					
Schnitt:		Anlage J1Schnitt 1L		Seite Anlage J1/8	
Kapitel:		2LF 1.2 (BS-T, mit Lasten)		Archiv Nr.:	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

Statisch geprüft

11/8

Ing. 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>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>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>102.49</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>101.44</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.39</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>100.30</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>-9.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-8.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-8.5</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>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-8.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-7.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-7.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-7.4</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-6.8</td><td>6.29</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-6.7</td><td>6.29</td><td>42.31</td><td>47.55</td></tr><tr><td>105.50</td><td>-6.7</td><td>7.07</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-6.7</td><td>7.07</td><td>47.00</td><td>52.30</td></tr><tr><td>105.45</td><td>-6.7</td><td>7.86</td><td>52.31</td><td>52.30</td></tr><tr><td>105.40</td><td>-6.6</td><td>7.86</td><td>51.70</td><td>57.06</td></tr><tr><td>105.05</td><td>-6.0</td><td>10.00</td><td>60.35</td><td>90.34</td></tr><tr><td>105.00</td><td>-6.0</td><td>10.00</td><td>59.59</td><td>95.10</td></tr><tr><td>105.00</td><td>-6.0</td><td>10.00</td><td>59.59</td><td>95.10</td></tr><tr><td>104.95</td><td>-5.9</td><td>10.00</td><td>58.82</td><td>97.62</td></tr><tr><td>104.50</td><td>-5.2</td><td>10.00</td><td>51.97</td><td>120.36</td></tr><tr><td>104.44</td><td>-5.1</td><td>10.00</td><td>51.21</td><td>122.89</td></tr><tr><td>104.44</td><td>-5.1</td><td>10.00</td><td>51.21</td><td>122.89</td></tr><tr><td>104.39</td><td>-5.0</td><td>10.00</td><td>50.46</td><td>125.41</td></tr><tr><td>103.99</td><td>-4.5</td><td>10.00</td><td>44.51</td><td>145.63</td></tr><tr><td>103.94</td><td>-4.4</td><td>10.00</td><td>43.77</td><td>148.15</td></tr><tr><td>103.94</td><td>-4.4</td><td>5.00</td><td>21.89</td><td>101.53</td></tr><tr><td>103.89</td><td>-4.3</td><td>5.00</td><td>21.52</td><td>102.82</td></tr><tr><td>103.49</td><td>-3.7</td><td>5.00</td><td>18.64</td><td>113.13</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.28</td><td>114.42</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.28</td><td>114.42</td></tr><tr><td>103.39</td><td>-3.6</td><td>5.00</td><td>17.93</td><td>115.71</td></tr><tr><td>102.89</td><td>-2.9</td><td>5.00</td><td>14.42</td><td>128.60</td></tr><tr><td>102.84</td><td>-2.8</td><td>5.00</td><td>14.07</td><td>129.89</td></tr><tr><td>102.84</td><td>-2.8</td><td>50.00</td><td>140.72</td><td>233.92</td></tr><tr><td>102.79</td><td>-2.7</td><td>50.00</td><td>137.29</td><td>237.37</td></tr><tr><td>102.54</td><td>-2.4</td><td>50.00</td><td>120.31</td><td>254.57</td></tr><tr><td>102.49</td><td>-2.3</td><td>50.00</td><td>116.95</td><td>258.01</td></tr><tr><td>102.49</td><td>-2.3</td><td>50.00</td><td>116.95</td><td>258.01</td></tr><tr><td>102.44</td><td>-2.3</td><td>50.00</td><td>113.60</td><td>261.46</td></tr><tr><td>102.44</td><td>-2.3</td><td>50.00</td><td>113.60</td><td>261.46</td></tr><tr><td>102.39</td><td>-2.2</td><td>50.00</td><td>110.26</td><td>264.90</td></tr><tr><td>101.49</td><td>-1.0</td><td>50.00</td><td>52.10</td><td>326.84</td></tr></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	102.49	0.0	0.0	0.0	102.44	0.0	0.0	0.0	101.44	0.0	0.0	0.0	101.39	0.0	0.0	0.0	100.45	0.0	0.0	0.0	100.30	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-9.8	-	-	-	107.40	-9.7	-	-	-	106.75	-8.7	-	-	-	106.71	-8.6	-	-	-	106.71	-8.6	-	-	-	106.66	-8.5	-	-	-	106.45	-8.2	-	-	-	106.40	-8.1	-	-	-	106.40	-8.1	-	-	-	106.35	-8.1	-	-	-	106.05	-7.6	-	-	-	106.00	-7.5	0.00	0.00	0.00	106.00	-7.5	0.00	0.00	0.00	105.95	-7.4	0.00	0.00	4.75	105.55	-6.8	6.29	42.80	42.79	105.50	-6.7	6.29	42.31	47.55	105.50	-6.7	7.07	47.55	47.55	105.45	-6.7	7.07	47.00	52.30	105.45	-6.7	7.86	52.31	52.30	105.40	-6.6	7.86	51.70	57.06	105.05	-6.0	10.00	60.35	90.34	105.00	-6.0	10.00	59.59	95.10	105.00	-6.0	10.00	59.59	95.10	104.95	-5.9	10.00	58.82	97.62	104.50	-5.2	10.00	51.97	120.36	104.44	-5.1	10.00	51.21	122.89	104.44	-5.1	10.00	51.21	122.89	104.39	-5.0	10.00	50.46	125.41	103.99	-4.5	10.00	44.51	145.63	103.94	-4.4	10.00	43.77	148.15	103.94	-4.4	5.00	21.89	101.53	103.89	-4.3	5.00	21.52	102.82	103.49	-3.7	5.00	18.64	113.13	103.44	-3.7	5.00	18.28	114.42	103.44	-3.7	5.00	18.28	114.42	103.39	-3.6	5.00	17.93	115.71	102.89	-2.9	5.00	14.42	128.60	102.84	-2.8	5.00	14.07	129.89	102.84	-2.8	50.00	140.72	233.92	102.79	-2.7	50.00	137.29	237.37	102.54	-2.4	50.00	120.31	254.57	102.49	-2.3	50.00	116.95	258.01	102.49	-2.3	50.00	116.95	258.01	102.44	-2.3	50.00	113.60	261.46	102.44	-2.3	50.00	113.60	261.46	102.39	-2.2	50.00	110.26	264.90	101.49	-1.0	50.00	52.10	326.84
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106.71	-8.6	-	-	-																																																																																																																																																																																																																																																																																																																																		
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106.66	-8.5	-	-	-																																																																																																																																																																																																																																																																																																																																		
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105.95	-7.4	0.00	0.00	4.75																																																																																																																																																																																																																																																																																																																																		
105.55	-6.8	6.29	42.80	42.79																																																																																																																																																																																																																																																																																																																																		
105.50	-6.7	6.29	42.31	47.55																																																																																																																																																																																																																																																																																																																																		
105.50	-6.7	7.07	47.55	47.55																																																																																																																																																																																																																																																																																																																																		
105.45	-6.7	7.07	47.00	52.30																																																																																																																																																																																																																																																																																																																																		
105.45	-6.7	7.86	52.31	52.30																																																																																																																																																																																																																																																																																																																																		
105.40	-6.6	7.86	51.70	57.06																																																																																																																																																																																																																																																																																																																																		
105.05	-6.0	10.00	60.35	90.34																																																																																																																																																																																																																																																																																																																																		
105.00	-6.0	10.00	59.59	95.10																																																																																																																																																																																																																																																																																																																																		
105.00	-6.0	10.00	59.59	95.10																																																																																																																																																																																																																																																																																																																																		
104.95	-5.9	10.00	58.82	97.62																																																																																																																																																																																																																																																																																																																																		
104.50	-5.2	10.00	51.97	120.36																																																																																																																																																																																																																																																																																																																																		
104.44	-5.1	10.00	51.21	122.89																																																																																																																																																																																																																																																																																																																																		
104.44	-5.1	10.00	51.21	122.89																																																																																																																																																																																																																																																																																																																																		
104.39	-5.0	10.00	50.46	125.41																																																																																																																																																																																																																																																																																																																																		
103.99	-4.5	10.00	44.51	145.63																																																																																																																																																																																																																																																																																																																																		
103.94	-4.4	10.00	43.77	148.15																																																																																																																																																																																																																																																																																																																																		
103.94	-4.4	5.00	21.89	101.53																																																																																																																																																																																																																																																																																																																																		
103.89	-4.3	5.00	21.52	102.82																																																																																																																																																																																																																																																																																																																																		
103.49	-3.7	5.00	18.64	113.13																																																																																																																																																																																																																																																																																																																																		
103.44	-3.7	5.00	18.28	114.42																																																																																																																																																																																																																																																																																																																																		
103.44	-3.7	5.00	18.28	114.42																																																																																																																																																																																																																																																																																																																																		
103.39	-3.6	5.00	17.93	115.71																																																																																																																																																																																																																																																																																																																																		
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102.84	-2.8	5.00	14.07	129.89																																																																																																																																																																																																																																																																																																																																		
102.84	-2.8	50.00	140.72	233.92																																																																																																																																																																																																																																																																																																																																		
102.79	-2.7	50.00	137.29	237.37																																																																																																																																																																																																																																																																																																																																		
102.54	-2.4	50.00	120.31	254.57																																																																																																																																																																																																																																																																																																																																		
102.49	-2.3	50.00	116.95	258.01																																																																																																																																																																																																																																																																																																																																		
102.49	-2.3	50.00	116.95	258.01																																																																																																																																																																																																																																																																																																																																		
102.44	-2.3	50.00	113.60	261.46																																																																																																																																																																																																																																																																																																																																		
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102.39	-2.2	50.00	110.26	264.90																																																																																																																																																																																																																																																																																																																																		
101.49	-1.0	50.00	52.10	326.84																																																																																																																																																																																																																																																																																																																																		
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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

101.44	-1.0	50.00	48.96	330.28
101.44	-1.0	50.00	48.96	330.28
101.39	-0.9	50.00	45.82	333.73
101.39	-0.9	50.00	45.82	333.73
101.35	-0.9	50.00	42.69	337.17
100.50	0.2	50.00	-10.00	395.67
100.45	0.3	50.00	-13.09	399.11
100.45	0.3	50.00	-13.09	399.11
100.40	0.3	50.00	-16.17	402.56
100.35	0.4	50.00	-19.26	406.00
100.30	0.4	50.00	-22.34	409.44

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.07094106$   
 Theoretischer Fußpunkt = 100.299 m

Einbindetiefe  $t_g = 5.70$  m  
 Profillänge = 7.15 m

Nachweis Summe V  
 Nachweis des mobilisierten Erdwiderstands  
 Bedingung:  $P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}$   
 $G_{s,k} = 135.30$  kN/m  
 $G'_{s,k} = 0.00$  kN/m  
 $P_{v,k} = 0.00$  kN/m  
 $E_{av,k} = 42.34$  kN/m ( $E_{ah,k} = 236.24$  kN/m)  
 $B_{v,k} = 99.63$   
 Summe  $V_{s,k} = 78.00$  kN/m (Druck)

Nachweis der vertikalen Tragfähigkeit  
 (Erfahrungswerte nach EA Pfähle)  
 Verfahren 2: EAU Bild E 4-3 (rechts)  
 Bohrspahlwand  $D = 0.88$  m  
 Verhältniswert (min, max) = 0.00  
 Spitzendruck  $q_{c,m} = 7.50$  MN/m<sup>2</sup>  
 (gemittelt von 101.18 bis 97.66 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung
 

von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
106.00	103.94	0.00	S1: Auffüllungen
103.94	102.84	0.00	S2: Auelehm
102.84	100.30	55.00	s3: Flussskies, -sand

 Mantelfläche bis 100.30 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 139.70 / 1.40 = 99.79$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 964.83$  kN/m

Einwirkungen  
 $V_{s,d} = G_{s,d} - G'_{s,k} + E_{av,d} + P_{v,d} = 162.36 - 0.00 + 48.69 + 0.00 = 211.05$  kN/m  
 $\Rightarrow \mu = V_{s,d} / R_{d} = 211.05 / 964.83 = 0.22$

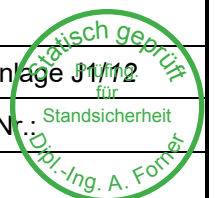
Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage J1	Schnitt 1L	Seite Anlage J1/10
Kapitel: 2	LF 1.2 (BS-T, mit Lasten)	Archiv Nr.: 11/10
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 1</div><div>Datei: 02_BS 1_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 (Erdseite) = 105.50 mNHN</div><div>Grundwasserstand (Luftseite) = 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>0.00</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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (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 = 8.10 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 <math>\mu_e = 214.996 / 217.728 = 0.987</math></div><div>Bettungslager <math>B_{h,d} = 214.996</math> kN/m</div><div>Erdwiderstand <math>E_{ph,d} = 217.728</math> kN/m</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	<div><div>Schnitt:</div><div>Anlage J1</div><div>Schnitt 1L</div></div> <div><div>Seite Anlage J1/11</div></div> <div><div>Kapitel:</div><div>3</div><div>LF 2.1 (BS-T, ohne Lasten)</div></div> <div><div>Archiv Nr.:</div></div> <div><div>Vorgang:</div><div>Genehmigungsstatik</div></div> <div><div>Projekt-Nr.: 2004-0025</div></div>	<div><div>Seite Anlage J1/11</div></div> <div><div>Archiv Nr.:</div></div> <div><div>Standsicherheit</div></div> <div><div>Dipl.-Ing. A. Forner</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																																			
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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>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>106.95</td><td>0.00</td><td>1.00</td><td>-108.72</td><td>-94.20</td><td>-94.20</td><td>-7.89</td><td>6.900E+4</td><td>2.100E+7</td><td>-120.11</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>-1.00</td><td>106.95</td><td>-8.7</td><td>0.0</td><td>-108.72</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>-108.72</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>-108.72</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-108.72</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>-108.72</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>-108.72</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-9.4</td><td>0.0</td><td>-108.72</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>-108.72</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>-108.72</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-9.9</td><td>0.0</td><td>-108.72</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>-108.72</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-108.72</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\00_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>-0.0075</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(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 &gt; 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>106.950</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>104.150</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>104.150</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	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	-108.72	-94.20	-94.20	-7.89	6.900E+4	2.100E+7	-120.11	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	-8.7	0.0	-108.72	0.00	0.00	-0.90	106.95	-8.8	0.0	-108.72	0.00	0.00	-0.90	106.95	-8.8	0.0	-108.72	0.00	0.00	-0.80	106.95	-9.0	0.0	-108.72	0.00	0.00	-0.70	106.95	-9.1	0.0	-108.72	0.00	0.00	-0.60	106.95	-9.3	0.0	-108.72	0.00	0.00	-0.50	106.95	-9.4	0.0	-108.72	0.00	0.00	-0.40	106.95	-9.6	0.0	-108.72	0.00	0.00	-0.30	106.95	-9.8	0.0	-108.72	0.00	0.00	-0.20	106.95	-9.9	0.0	-108.72	0.00	0.00	-0.10	106.95	-10.1	0.0	-108.72	0.00	0.00	0.00	106.95	-10.2	0.0	-108.72	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0075	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	106.950	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	104.150	23.341	23.341	5.00	5.00	104.150	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	Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/12	
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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1	106.95	0.00	1.00	-108.72	-94.20	-94.20	-7.89	6.900E+4	2.100E+7	-120.11																																																																																																																																																																																																																																																																																																																							
x	y	wx,d	wy,d	N,d	Q,d	M,d																																																																																																																																																																																																																																																																																																																											
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-1.00	106.95	-8.7	0.0	-108.72	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.90	106.95	-8.8	0.0	-108.72	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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-0.80	106.95	-9.0	0.0	-108.72	0.00	0.00																																																																																																																																																																																																																																																																																																																											
-0.70	106.95	-9.1	0.0	-108.72	0.00	0.00																																																																																																																																																																																																																																																																																																																											
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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																																																																																																																																																																																																																																																																																																																							
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																																																																																																																																																																																																																																																																																																																										
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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	104.150	23.341	23.341	5.00	5.00																																																																																																																																																																																																																																																																																																																												
104.150	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																																																																																																																																																																																																																																																																																																																												
Kapitel: 3		LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																													
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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>102.840</td><td>102.550</td><td>23.341</td><td>23.341</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>32.451</td><td>32.861</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>32.861</td><td>35.323</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>35.323</td><td>36.964</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>36.964</td><td>41.067</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>41.067</td><td>45.171</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>99.349</td><td>45.171</td><td>45.581</td><td>5.00</td><td>5.00</td></tr><tr><td>99.349</td><td>80.000</td><td>45.581</td><td>124.941</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.81</td></tr><tr><td>99.45</td><td>99.35</td><td>-131.81</td><td>-136.06</td></tr><tr><td>99.35</td><td>80.00</td><td>-136.06</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>-16.7</td><td>-16.1</td><td>-4.0</td><td>-108.7</td></tr><tr><td>106.95</td><td>-16.7</td><td>92.6</td><td>-4.0</td><td></td></tr><tr><td>106.71</td><td>-24.9</td><td>84.8</td><td>17.6</td><td></td></tr><tr><td>106.40</td><td>-35.2</td><td>74.9</td><td>42.0</td><td></td></tr><tr><td>105.50</td><td>-65.3</td><td>45.9</td><td>96.4</td><td></td></tr><tr><td>105.45</td><td>-67.0</td><td>44.3</td><td>98.7</td><td></td></tr><tr><td>105.00</td><td>-82.1</td><td>28.3</td><td>115.1</td><td></td></tr><tr><td>104.40</td><td>-101.0</td><td>8.6</td><td>126.2</td><td></td></tr><tr><td>104.15</td><td>-108.9</td><td>0.4</td><td>127.3</td><td></td></tr><tr><td>103.94</td><td>-115.5</td><td>-6.5</td><td>126.6</td><td></td></tr><tr><td>103.40</td><td>-131.1</td><td>-24.2</td><td>118.3</td><td></td></tr><tr><td>102.84</td><td>-147.3</td><td>-42.6</td><td>99.6</td><td></td></tr><tr><td>102.55</td><td>-156.7</td><td>-52.2</td><td>85.9</td><td></td></tr><tr><td>102.45</td><td>-159.5</td><td>-56.3</td><td>80.5</td><td></td></tr><tr><td>101.85</td><td>-165.5</td><td>-65.7</td><td>42.5</td><td></td></tr><tr><td>101.45</td><td>-163.3</td><td>-57.1</td><td>17.6</td><td></td></tr><tr><td>100.45</td><td>-141.3</td><td>2.6</td><td>-10.9</td><td></td></tr><tr><td>99.45</td><td>-140.4</td><td>4.5</td><td>-0.2</td><td></td></tr><tr><td>99.35</td><td>-142.1</td><td>0.0</td><td>0.0</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></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>-14.6</td><td>-14.0</td><td>-3.5</td><td>-94.2</td></tr><tr><td>106.95</td><td>-14.6</td><td>80.2</td><td>-3.5</td><td></td></tr><tr><td>106.71</td><td>-21.6</td><td>73.4</td><td>15.2</td><td></td></tr><tr><td>106.40</td><td>-30.6</td><td>64.8</td><td>36.4</td><td></td></tr><tr><td>105.50</td><td>-56.8</td><td>39.6</td><td>83.3</td><td></td></tr><tr><td>105.45</td><td>-58.2</td><td>38.2</td><td>85.3</td><td></td></tr><tr><td>105.00</td><td>-71.4</td><td>24.3</td><td>99.4</td><td></td></tr><tr><td>104.40</td><td>-87.8</td><td>7.3</td><td>108.9</td><td></td></tr></table>								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	45.171	5.00	5.00	99.449	99.349	45.171	45.581	5.00	5.00	99.349	80.000	45.581	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	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	-89.29	100.45	99.45	-89.29	-131.81	99.45	99.35	-131.81	-136.06	99.35	80.00	-136.06	-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	-16.7	-16.1	-4.0	-108.7	106.95	-16.7	92.6	-4.0		106.71	-24.9	84.8	17.6		106.40	-35.2	74.9	42.0		105.50	-65.3	45.9	96.4		105.45	-67.0	44.3	98.7		105.00	-82.1	28.3	115.1		104.40	-101.0	8.6	126.2		104.15	-108.9	0.4	127.3		103.94	-115.5	-6.5	126.6		103.40	-131.1	-24.2	118.3		102.84	-147.3	-42.6	99.6		102.55	-156.7	-52.2	85.9		102.45	-159.5	-56.3	80.5		101.85	-165.5	-65.7	42.5		101.45	-163.3	-57.1	17.6		100.45	-141.3	2.6	-10.9		99.45	-140.4	4.5	-0.2		99.35	-142.1	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		106.95	-14.6	-14.0	-3.5	-94.2	106.95	-14.6	80.2	-3.5		106.71	-21.6	73.4	15.2		106.40	-30.6	64.8	36.4		105.50	-56.8	39.6	83.3		105.45	-58.2	38.2	85.3		105.00	-71.4	24.3	99.4		104.40	-87.8	7.3	108.9	
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101.45	100.45	-46.77	-89.29																																																																																																																																																																																																																																																																																																		
100.45	99.45	-89.29	-131.81																																																																																																																																																																																																																																																																																																		
99.45	99.35	-131.81	-136.06																																																																																																																																																																																																																																																																																																		
99.35	80.00	-136.06	-958.43																																																																																																																																																																																																																																																																																																		
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106.95	-16.7	-16.1	-4.0	-108.7																																																																																																																																																																																																																																																																																																	
106.95	-16.7	92.6	-4.0																																																																																																																																																																																																																																																																																																		
106.71	-24.9	84.8	17.6																																																																																																																																																																																																																																																																																																		
106.40	-35.2	74.9	42.0																																																																																																																																																																																																																																																																																																		
105.50	-65.3	45.9	96.4																																																																																																																																																																																																																																																																																																		
105.45	-67.0	44.3	98.7																																																																																																																																																																																																																																																																																																		
105.00	-82.1	28.3	115.1																																																																																																																																																																																																																																																																																																		
104.40	-101.0	8.6	126.2																																																																																																																																																																																																																																																																																																		
104.15	-108.9	0.4	127.3																																																																																																																																																																																																																																																																																																		
103.94	-115.5	-6.5	126.6																																																																																																																																																																																																																																																																																																		
103.40	-131.1	-24.2	118.3																																																																																																																																																																																																																																																																																																		
102.84	-147.3	-42.6	99.6																																																																																																																																																																																																																																																																																																		
102.55	-156.7	-52.2	85.9																																																																																																																																																																																																																																																																																																		
102.45	-159.5	-56.3	80.5																																																																																																																																																																																																																																																																																																		
101.85	-165.5	-65.7	42.5																																																																																																																																																																																																																																																																																																		
101.45	-163.3	-57.1	17.6																																																																																																																																																																																																																																																																																																		
100.45	-141.3	2.6	-10.9																																																																																																																																																																																																																																																																																																		
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106.95	-14.6	80.2	-3.5																																																																																																																																																																																																																																																																																																		
106.71	-21.6	73.4	15.2																																																																																																																																																																																																																																																																																																		
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105.45	-58.2	38.2	85.3																																																																																																																																																																																																																																																																																																		
105.00	-71.4	24.3	99.4																																																																																																																																																																																																																																																																																																		
104.40	-87.8	7.3	108.9																																																																																																																																																																																																																																																																																																		
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<table><tr><td>104.15</td><td>-94.7</td><td>0.2</td><td>109.9</td><td></td></tr><tr><td>103.94</td><td>-100.4</td><td>-5.7</td><td>109.3</td><td></td></tr><tr><td>103.40</td><td>-114.0</td><td>-21.0</td><td>102.1</td><td></td></tr><tr><td>102.84</td><td>-128.1</td><td>-36.9</td><td>85.9</td><td></td></tr><tr><td>102.55</td><td>-136.3</td><td>-45.1</td><td>74.0</td><td></td></tr><tr><td>102.45</td><td>-138.7</td><td>-48.7</td><td>69.3</td><td></td></tr><tr><td>101.85</td><td>-144.0</td><td>-56.7</td><td>36.5</td><td></td></tr><tr><td>101.45</td><td>-142.0</td><td>-49.3</td><td>14.9</td><td></td></tr><tr><td>100.45</td><td>-122.9</td><td>2.5</td><td>-9.6</td><td></td></tr><tr><td>99.45</td><td>-122.1</td><td>3.9</td><td>-0.2</td><td></td></tr><tr><td>99.35</td><td>-123.6</td><td>0.0</td><td>0.0</td><td></td></tr></table> <p>Schnittgrößen (g+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></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><td></td></tr><tr><td>106.95</td><td>-14.6</td><td>-14.0</td><td>-3.5</td><td>-94.2</td><td></td></tr><tr><td>106.95</td><td>-14.6</td><td>80.2</td><td>-3.5</td><td></td><td></td></tr><tr><td>106.71</td><td>-21.6</td><td>73.4</td><td>15.2</td><td></td><td></td></tr><tr><td>106.40</td><td>-30.6</td><td>64.8</td><td>36.4</td><td></td><td></td></tr><tr><td>105.50</td><td>-56.8</td><td>39.6</td><td>83.3</td><td></td><td></td></tr><tr><td>105.45</td><td>-58.2</td><td>38.2</td><td>85.3</td><td></td><td></td></tr><tr><td>105.00</td><td>-71.4</td><td>24.3</td><td>99.4</td><td></td><td></td></tr><tr><td>104.40</td><td>-87.8</td><td>7.3</td><td>108.9</td><td></td><td></td></tr><tr><td>104.15</td><td>-94.7</td><td>0.2</td><td>109.9</td><td></td><td></td></tr><tr><td>103.94</td><td>-100.4</td><td>-5.7</td><td>109.3</td><td></td><td></td></tr><tr><td>103.40</td><td>-114.0</td><td>-21.0</td><td>102.1</td><td></td><td></td></tr><tr><td>102.84</td><td>-128.1</td><td>-36.9</td><td>85.9</td><td></td><td></td></tr><tr><td>102.55</td><td>-136.3</td><td>-45.1</td><td>74.0</td><td></td><td></td></tr><tr><td>102.45</td><td>-138.7</td><td>-48.7</td><td>69.3</td><td></td><td></td></tr><tr><td>101.85</td><td>-144.0</td><td>-56.7</td><td>36.5</td><td></td><td></td></tr><tr><td>101.45</td><td>-142.0</td><td>-49.3</td><td>14.9</td><td></td><td></td></tr><tr><td>100.45</td><td>-122.9</td><td>2.5</td><td>-9.6</td><td></td><td></td></tr><tr><td>99.45</td><td>-122.1</td><td>3.9</td><td>-0.2</td><td></td><td></td></tr><tr><td>99.35</td><td>-123.6</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <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></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><td></td></tr><tr><td>106.95</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.71</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.40</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>105.00</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>104.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.94</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.40</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>102.84</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>102.45</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>100.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.45</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>99.35</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><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>107.45</td><td>-9.3</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.40</td><td>-9.2</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.00</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.95</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.95</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.90</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.76</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.71</td><td>-8.7</td><td>-</td><td>-</td><td>-</td><td></td></tr></table>						104.15	-94.7	0.2	109.9		103.94	-100.4	-5.7	109.3		103.40	-114.0	-21.0	102.1		102.84	-128.1	-36.9	85.9		102.55	-136.3	-45.1	74.0		102.45	-138.7	-48.7	69.3		101.85	-144.0	-56.7	36.5		101.45	-142.0	-49.3	14.9		100.45	-122.9	2.5	-9.6		99.45	-122.1	3.9	-0.2		99.35	-123.6	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			106.95	-14.6	-14.0	-3.5	-94.2		106.95	-14.6	80.2	-3.5			106.71	-21.6	73.4	15.2			106.40	-30.6	64.8	36.4			105.50	-56.8	39.6	83.3			105.45	-58.2	38.2	85.3			105.00	-71.4	24.3	99.4			104.40	-87.8	7.3	108.9			104.15	-94.7	0.2	109.9			103.94	-100.4	-5.7	109.3			103.40	-114.0	-21.0	102.1			102.84	-128.1	-36.9	85.9			102.55	-136.3	-45.1	74.0			102.45	-138.7	-48.7	69.3			101.85	-144.0	-56.7	36.5			101.45	-142.0	-49.3	14.9			100.45	-122.9	2.5	-9.6			99.45	-122.1	3.9	-0.2			99.35	-123.6	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			106.95	0.0	0.0	0.0	0.0		106.71	0.0	0.0	0.0			106.40	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			104.15	0.0	0.0	0.0			103.94	0.0	0.0	0.0			103.40	0.0	0.0	0.0			102.84	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			99.35	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	-	-	-		106.90	-8.9	-	-	-		106.76	-8.8	-	-	-		106.71	-8.7	-	-	-	
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102.45	-138.7	-48.7	69.3																																																																																																																																																																																																																																																																																																																																																																																							
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Statisch geprüft

für

Standicherheit

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> 106.71 -8.7 - - -  106.66 -8.7 - - -  106.45 -8.5 - - -  106.40 -8.5 - - -  106.40 -8.5 - - -  106.35 -8.5 - - -  105.55 -7.8 - - -  105.50 -7.8 - - -  105.50 -7.8 - - -  105.45 -7.8 - - -  105.45 -7.8 - - -  105.40 -7.7 - - -  105.05 -7.4 - - -  105.00 -7.4 - - -  105.00 -7.4 - - -  104.95 -7.3 - - -  104.45 -6.8 - - -  104.40 -6.8 - - -  104.40 -6.8 - - -  104.35 -6.7 - - -  104.20 -6.6 - - -  104.15 -6.5 - - -  104.15 -6.5 - - -  104.10 -6.5 - - -  103.95 -6.3 - - -  103.94 -6.3 - - -  103.94 -6.3 - - -  103.89 -6.3 - - -  103.45 -5.7 - - -  103.40 -5.7 - - -  103.40 -5.7 - - -  103.35 -5.6 - - -  102.90 -5.1 - - -  102.84 -5.0 - - -  102.84 -5.0 - - -  102.79 -4.9 - - -  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 -4.5 0.00 0.00 3.45  102.50 -4.5 0.76 3.45 3.45  102.45 -4.5 0.76 3.40 6.91  102.45 -4.5 1.54 6.91 6.91  102.40 -4.4 1.54 6.81 10.36  101.90 -3.7 12.03 44.91 44.91  101.85 -3.7 12.03 44.08 48.37  101.85 -3.7 13.20 48.37 48.37  101.80 -3.6 13.20 47.45 51.82  101.50 -3.2 22.86 72.55 72.55  101.45 -3.1 22.86 70.94 76.00  101.45 -3.1 24.50 76.00 76.00  101.40 -3.0 24.50 74.28 79.46  100.50 -1.8 50.00 88.12 141.64  100.45 -1.7 50.00 84.61 145.10  100.45 -1.7 50.00 84.61 145.10  100.40 -1.6 50.00 81.10 148.55  99.50 -0.4 50.00 18.13 210.73  99.45 -0.3 50.00 14.64 214.19  99.45 -0.3 50.00 14.64 214.19  99.40 -0.2 50.00 11.15 217.64  99.40 -0.2 50.00 11.15 217.64  99.35 -0.2 50.00 7.65 221.10 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  phi,[g+q],k: -0.07999333  Theoretischer Fußpunkt = 99.349 m</p> <p>Einbindetiefe tg = 3.20 m  Profillänge = 8.10 m</p> </div> </div>		
Schnitt:	Anlage J1 Schnitt 1L	Seite Anlage J1/15
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 11/15
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: <math>P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}</math></div> <div><math>G_k = 153.28 \text{ kN/m}</math></div> <div><math>G'_{k} = 0.00 \text{ kN/m}</math></div> <div><math>P_{v,k} = 0.00 \text{ kN/m}</math></div> <div><math>E_{av,k} = 45.78 \text{ kN/m}</math> (<math>E_{ah,k} = 250.71 \text{ kN/m}</math>)</div> <div><math>B_{v,k} = 73.94</math></div> <div>Summe <math>V_{k} = 125.11 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></div> <div>(gemittelt von 100.23 bis 96.71 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></div> <div><math>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}</math></div> <div>Mantelreibung</div> <div><table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>99.35</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div> <div>Mantelfläche bis 99.35 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math></div> <div><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 176.00 / 1.40 = 125.71 \text{ kN/m}</math></div> <div><math>R_{d} = R_{b,d} + R_{s1,d} = 990.76 \text{ kN/m}</math></div> <div>Einwirkungen</div> <div><math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 183.93 - 0.00 + 52.64 + 0.00 = 236.58 \text{ kN/m}</math></div> <div><math>\implies \mu = V_{d} / R_{d} = 236.58 / 990.76 = 0.24</math></div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	99.35	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	99.35	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/16								
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 11/16								
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>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: 03_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.35 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 <math>\mu_e = 249.510 / 253.072 = 0.986</math> Bettungslager <math>B_{h,d} = 249.510</math> kN/m Erdwiderstand <math>E_{ph,d} = 253.072</math> 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]																																						
102.55	80.00	50.000	50.000																																						
Schnitt:	Anlage J1    Schnitt 1L	Seite Anlage J1/17																																							
Kapitel:	4                    LF 2.2 (BS-T, mit Lasten)	Archiv Nr.: 11/17 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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																							
<div>Anker und Steifen</div> <div>N<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-124.91</td><td>-108.27</td><td>-108.27</td><td>-8.08</td><td>6.900E+4</td><td>2.100E+7</td><td>-138.04</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-8.7</td><td>0.0</td><td>-124.91</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>-124.91</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>-124.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.0</td><td>0.0</td><td>-124.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-9.2</td><td>0.0</td><td>-124.91</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>-124.91</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>-124.91</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>-124.91</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>-124.91</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>-124.91</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>-124.91</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>-124.91</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\00_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>-0.0075</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>m',k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>104.100</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>104.100</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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-124.91	-108.27	-108.27	-8.08	6.900E+4	2.100E+7	-138.04	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-8.7	0.0	-124.91	0.00	0.00	-0.90	106.95	-8.8	0.0	-124.91	0.00	0.00	-0.90	106.95	-8.8	0.0	-124.91	0.00	0.00	-0.80	106.95	-9.0	0.0	-124.91	0.00	0.00	-0.70	106.95	-9.2	0.0	-124.91	0.00	0.00	-0.60	106.95	-9.4	0.0	-124.91	0.00	0.00	-0.50	106.95	-9.6	0.0	-124.91	0.00	0.00	-0.40	106.95	-9.7	0.0	-124.91	0.00	0.00	-0.30	106.95	-9.9	0.0	-124.91	0.00	0.00	-0.20	106.95	-10.1	0.0	-124.91	0.00	0.00	-0.10	106.95	-10.3	0.0	-124.91	0.00	0.00	0.00	106.95	-10.5	0.1	-124.91	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0075	Schicht	UK	γ <sub>m,k</sub>	γ <sub>m',k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	104.100	26.857	26.857	5.00	5.00	104.100	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
Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																																			
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<table><tr><td>102.840</td><td>102.550</td><td>26.857</td><td>26.857</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>36.017</td><td>36.428</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>36.428</td><td>38.889</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>38.889</td><td>40.531</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>40.531</td><td>44.634</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>44.634</td><td>48.737</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>99.099</td><td>48.737</td><td>50.173</td><td>5.00</td><td>5.00</td></tr><tr><td>99.099</td><td>80.000</td><td>50.173</td><td>128.508</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>102.84</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.80</td></tr><tr><td>99.45</td><td>99.10</td><td>-131.80</td><td>-146.69</td></tr><tr><td>99.10</td><td>80.00</td><td>-146.69</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>-124.9</td></tr><tr><td>106.95</td><td>-17.6</td><td>106.4</td><td>-4.6</td><td></td></tr><tr><td>106.71</td><td>-26.2</td><td>97.4</td><td>20.2</td><td></td></tr><tr><td>106.40</td><td>-37.0</td><td>86.0</td><td>48.3</td><td></td></tr><tr><td>105.50</td><td>-68.8</td><td>52.6</td><td>110.7</td><td></td></tr><tr><td>105.45</td><td>-70.5</td><td>50.8</td><td>113.2</td><td></td></tr><tr><td>105.00</td><td>-86.4</td><td>32.6</td><td>132.1</td><td></td></tr><tr><td>104.40</td><td>-106.2</td><td>10.5</td><td>145.0</td><td></td></tr><tr><td>104.10</td><td>-116.1</td><td>-0.6</td><td>146.5</td><td></td></tr><tr><td>103.94</td><td>-121.4</td><td>-6.5</td><td>145.9</td><td></td></tr><tr><td>103.40</td><td>-137.6</td><td>-26.4</td><td>137.1</td><td></td></tr><tr><td>102.84</td><td>-154.4</td><td>-47.1</td><td>116.5</td><td></td></tr><tr><td>102.55</td><td>-164.3</td><td>-57.8</td><td>101.3</td><td></td></tr><tr><td>102.45</td><td>-167.2</td><td>-62.3</td><td>95.3</td><td></td></tr><tr><td>101.85</td><td>-173.2</td><td>-74.1</td><td>53.0</td><td></td></tr><tr><td>101.45</td><td>-170.9</td><td>-67.2</td><td>24.3</td><td></td></tr><tr><td>100.45</td><td>-146.0</td><td>-4.1</td><td>-15.0</td><td></td></tr><tr><td>99.45</td><td>-136.9</td><td>14.1</td><td>-2.8</td><td></td></tr><tr><td>99.10</td><td>-141.4</td><td>0.0</td><td>0.0</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></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>-15.3</td><td>-16.1</td><td>-4.0</td><td>-108.3</td></tr><tr><td>106.95</td><td>-15.3</td><td>92.2</td><td>-4.0</td><td></td></tr><tr><td>106.71</td><td>-22.8</td><td>84.3</td><td>17.4</td><td></td></tr><tr><td>106.40</td><td>-32.2</td><td>74.4</td><td>41.8</td><td></td></tr><tr><td>105.50</td><td>-59.8</td><td>45.4</td><td>95.7</td><td></td></tr><tr><td>105.45</td><td>-61.3</td><td>43.8</td><td>97.9</td><td></td></tr><tr><td>105.00</td><td>-75.1</td><td>28.1</td><td>114.2</td><td></td></tr><tr><td>104.40</td><td>-92.3</td><td>8.9</td><td>125.3</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	40.531	5.00	5.00	101.450	100.449	40.531	44.634	5.00	5.00	100.449	99.449	44.634	48.737	5.00	5.00	99.449	99.099	48.737	50.173	5.00	5.00	99.099	80.000	50.173	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	-89.29	100.45	99.45	-89.29	-131.80	99.45	99.10	-131.80	-146.69	99.10	80.00	-146.69	-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	-124.9	106.95	-17.6	106.4	-4.6		106.71	-26.2	97.4	20.2		106.40	-37.0	86.0	48.3		105.50	-68.8	52.6	110.7		105.45	-70.5	50.8	113.2		105.00	-86.4	32.6	132.1		104.40	-106.2	10.5	145.0		104.10	-116.1	-0.6	146.5		103.94	-121.4	-6.5	145.9		103.40	-137.6	-26.4	137.1		102.84	-154.4	-47.1	116.5		102.55	-164.3	-57.8	101.3		102.45	-167.2	-62.3	95.3		101.85	-173.2	-74.1	53.0		101.45	-170.9	-67.2	24.3		100.45	-146.0	-4.1	-15.0		99.45	-136.9	14.1	-2.8		99.10	-141.4	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		106.95	-15.3	-16.1	-4.0	-108.3	106.95	-15.3	92.2	-4.0		106.71	-22.8	84.3	17.4		106.40	-32.2	74.4	41.8		105.50	-59.8	45.4	95.7		105.45	-61.3	43.8	97.9		105.00	-75.1	28.1	114.2		104.40	-92.3	8.9	125.3	
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Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																						
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<table><tr><td>104.10</td><td>-100.9</td><td>-0.6</td><td>126.5</td><td></td></tr><tr><td>103.94</td><td>-105.5</td><td>-5.7</td><td>126.0</td><td></td></tr><tr><td>103.40</td><td>-119.6</td><td>-22.9</td><td>118.3</td><td></td></tr><tr><td>102.84</td><td>-134.3</td><td>-40.8</td><td>100.5</td><td></td></tr><tr><td>102.55</td><td>-142.9</td><td>-50.0</td><td>87.3</td><td></td></tr><tr><td>102.45</td><td>-145.4</td><td>-53.9</td><td>82.1</td><td></td></tr><tr><td>101.85</td><td>-150.6</td><td>-64.1</td><td>45.5</td><td></td></tr><tr><td>101.45</td><td>-148.7</td><td>-58.0</td><td>20.8</td><td></td></tr><tr><td>100.45</td><td>-126.9</td><td>-3.4</td><td>-13.1</td><td></td></tr><tr><td>99.45</td><td>-119.1</td><td>12.3</td><td>-2.4</td><td></td></tr><tr><td>99.10</td><td>-123.0</td><td>0.0</td><td>0.0</td><td></td></tr></table> <p>Schnittgrößen (g+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></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><td></td></tr><tr><td>106.95</td><td>-15.3</td><td>-16.1</td><td>-4.0</td><td>-108.3</td><td></td></tr><tr><td>106.95</td><td>-15.3</td><td>92.2</td><td>-4.0</td><td></td><td></td></tr><tr><td>106.71</td><td>-22.8</td><td>84.3</td><td>17.4</td><td></td><td></td></tr><tr><td>106.40</td><td>-32.2</td><td>74.4</td><td>41.8</td><td></td><td></td></tr><tr><td>105.50</td><td>-59.8</td><td>45.4</td><td>95.7</td><td></td><td></td></tr><tr><td>105.45</td><td>-61.3</td><td>43.8</td><td>97.9</td><td></td><td></td></tr><tr><td>105.00</td><td>-75.1</td><td>28.1</td><td>114.2</td><td></td><td></td></tr><tr><td>104.40</td><td>-92.3</td><td>8.9</td><td>125.3</td><td></td><td></td></tr><tr><td>104.10</td><td>-100.9</td><td>-0.6</td><td>126.5</td><td></td><td></td></tr><tr><td>103.94</td><td>-105.5</td><td>-5.7</td><td>126.0</td><td></td><td></td></tr><tr><td>103.40</td><td>-119.6</td><td>-22.9</td><td>118.3</td><td></td><td></td></tr><tr><td>102.84</td><td>-134.3</td><td>-40.8</td><td>100.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-142.9</td><td>-50.0</td><td>87.3</td><td></td><td></td></tr><tr><td>102.45</td><td>-145.4</td><td>-53.9</td><td>82.1</td><td></td><td></td></tr><tr><td>101.85</td><td>-150.6</td><td>-64.1</td><td>45.5</td><td></td><td></td></tr><tr><td>101.45</td><td>-148.7</td><td>-58.0</td><td>20.8</td><td></td><td></td></tr><tr><td>100.45</td><td>-126.9</td><td>-3.4</td><td>-13.1</td><td></td><td></td></tr><tr><td>99.45</td><td>-119.1</td><td>12.3</td><td>-2.4</td><td></td><td></td></tr><tr><td>99.10</td><td>-123.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table> <p>Schnittgrößen (q,k)</p> 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<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><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>107.45</td><td>-9.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.40</td><td>-9.4</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>107.00</td><td>-9.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.95</td><td>-9.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.95</td><td>-9.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.90</td><td>-9.1</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.75</td><td>-9.0</td><td>-</td><td>-</td><td>-</td><td></td></tr><tr><td>106.71</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td></tr></table>						104.10	-100.9	-0.6	126.5		103.94	-105.5	-5.7	126.0		103.40	-119.6	-22.9	118.3		102.84	-134.3	-40.8	100.5		102.55	-142.9	-50.0	87.3		102.45	-145.4	-53.9	82.1		101.85	-150.6	-64.1	45.5		101.45	-148.7	-58.0	20.8		100.45	-126.9	-3.4	-13.1		99.45	-119.1	12.3	-2.4		99.10	-123.0	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			106.95	-15.3	-16.1	-4.0	-108.3		106.95	-15.3	92.2	-4.0			106.71	-22.8	84.3	17.4			106.40	-32.2	74.4	41.8			105.50	-59.8	45.4	95.7			105.45	-61.3	43.8	97.9			105.00	-75.1	28.1	114.2			104.40	-92.3	8.9	125.3			104.10	-100.9	-0.6	126.5			103.94	-105.5	-5.7	126.0			103.40	-119.6	-22.9	118.3			102.84	-134.3	-40.8	100.5			102.55	-142.9	-50.0	87.3			102.45	-145.4	-53.9	82.1			101.85	-150.6	-64.1	45.5			101.45	-148.7	-58.0	20.8			100.45	-126.9	-3.4	-13.1			99.45	-119.1	12.3	-2.4			99.10	-123.0	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			106.95	0.0	0.0	0.0	0.0		106.71	0.0	0.0	0.0			106.40	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			104.10	0.0	0.0	0.0			103.94	0.0	0.0	0.0			103.40	0.0	0.0	0.0			102.84	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			99.10	0.0	0.0	0.0			Tiefe	w	ks	sig.Bh,k	eph,k		[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]		107.45	-9.4	-	-	-		107.40	-9.4	-	-	-		107.00	-9.1	-	-	-		106.95	-9.1	-	-	-		106.95	-9.1	-	-	-		106.90	-9.1	-	-	-		106.75	-9.0	-	-	-		106.71	-8.9	-	-	-	
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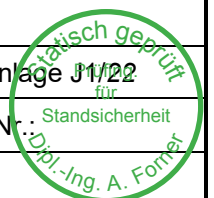


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<p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08114963 Theoretischer Fußpunkt = 99.099 m</p> <p>Einbindetiefe tg = 3.45 m Profillänge = 8.35 m</p>			106.71	-8.9	-	-	-	106.66	-8.9	-	-	-	106.45	-8.8	-	-	-	106.40	-8.7	-	-	-	106.40	-8.7	-	-	-	106.35	-8.7	-	-	-	105.55	-8.2	-	-	-	105.50	-8.1	-	-	-	105.50	-8.1	-	-	-	105.45	-8.1	-	-	-	105.45	-8.1	-	-	-	105.40	-8.0	-	-	-	105.05	-7.8	-	-	-	105.00	-7.7	-	-	-	105.00	-7.7	-	-	-	104.95	-7.7	-	-	-	104.45	-7.2	-	-	-	104.40	-7.2	-	-	-	104.40	-7.2	-	-	-	104.35	-7.1	-	-	-	104.15	-6.9	-	-	-	104.10	-6.9	-	-	-	104.10	-6.9	-	-	-	104.05	-6.8	-	-	-	103.95	-6.7	-	-	-	103.94	-6.7	-	-	-	103.94	-6.7	-	-	-	103.89	-6.7	-	-	-	103.45	-6.2	-	-	-	103.40	-6.1	-	-	-	103.40	-6.1	-	-	-	103.35	-6.0	-	-	-	102.90	-5.5	-	-	-	102.84	-5.4	-	-	-	102.84	-5.4	-	-	-	102.79	-5.3	-	-	-	102.60	-5.1	-	-	-	102.55	-5.0	0.00	0.00	0.00	102.55	-5.0	0.00	0.00	0.00	102.50	-5.0	0.00	0.00	3.45	102.50	-5.0	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	6.81	10.36	101.90	-4.1	10.85	44.91	44.91	101.85	-4.1	10.85	44.15	48.36	101.85	-4.1	11.89	48.37	48.36	101.80	-4.0	11.89	47.53	51.82	101.50	-3.6	20.32	72.55	72.55	101.45	-3.5	20.32	71.09	76.00	101.45	-3.5	21.72	76.00	76.00	101.40	-3.4	21.72	74.44	79.45	100.50	-2.1	50.00	106.58	141.64	100.45	-2.1	50.00	103.00	145.09	100.45	-2.1	50.00	103.00	145.09	100.40	-2.0	50.00	99.42	148.55	99.50	-0.7	50.00	35.37	210.73	99.45	-0.6	50.00	31.83	214.18	99.45	-0.6	50.00	31.83	214.18	99.40	-0.6	50.00	28.29	217.64	99.15	-0.2	50.00	10.57	234.91	99.10	-0.1	50.00	7.03	238.36
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Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 11/24																																																																																																																																																																																																																																																																																																																						
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>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{,k} = 158.01 \text{ kN/m}</math></p> <p><math>G'_{,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 53.72 \text{ kN/m}</math> (<math>E_{ah,k} = 293.49 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 85.85</math></p> <p>Summe <math>V_{,k} = 125.87 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 99.98 bis 96.46 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>99.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.10 m = <math>1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 189.75 / 1.40 = 135.54 \text{ kN/m}</math></p> <p><math>R_{,d} = R_{b,d} + R_{s1,d} = 1000.58 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 189.61 - 0.00 + 61.78 + 0.00 = 251.38 \text{ kN/m}</math></p> <p><math>\implies \mu = V_{,d} / R_{,d} = 251.38 / 1000.58 = 0.25</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	99.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	99.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/22								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 11/22								
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

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Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 1  
Datei: 04\_BS 1\_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

Kraftträger

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

Nr.	Tiefe	M <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>
[-]	[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 = 8.95 m

Bettungsmodule

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

Schnitt:	Anlage J1    Schnitt 1L	Seite Anlage J1/23
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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<p>Ausnutzungsgrad <math>\mu_e = 84.857 / 85.030 = 0.998</math> Bettungslager <math>B_{h,d} = 84.857 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 85.030 \text{ kN/m}</math></p> <p>Anker und Steifen <math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50) <math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</p> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th><math>N_d</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-306.40</td><td>-264.66</td><td>-264.66</td><td>-50.94</td><td>3.900E+7</td><td>2.100E+7</td><td>-337.44</td></tr></table> <p>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</p> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_d</math></th><th><math>Q_d</math></th><th><math>M_d</math></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>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-7.0</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-7.1</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-7.1</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-7.1</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-7.1</td><td>0.0</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-7.1</td><td>0.1</td><td>-306.91</td><td>0.00</td><td>0.00</td></tr></table> <p>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden von "Hand" eingegeben. Anker/Steife Tiefe Vorverformung</p> <table><tr><th>[-]</th><th>[m]</th><th>[m]</th></tr><tr><td>1</td><td>103.72</td><td>-0.0061</td></tr></table> <p>Bodenkennwerte</p> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{am,k}</math></th><th><math>\gamma_{am',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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> <p>Erhöhte aktive Erddruckbeiwerte Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</p> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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> <p>Aktive Erddruckordinaten (<math>[g+q]_k</math>) mit Zusatzdrücke</p> <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	-306.40	-264.66	-264.66	-50.94	3.900E+7	2.100E+7	-337.44	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	-7.0	0.0	-306.91	0.00	0.00	-7.47	103.72	-7.0	0.0	-306.91	0.00	0.00	-7.47	103.72	-7.0	0.0	-306.91	0.00	0.00	-6.64	103.72	-7.0	0.0	-306.91	0.00	0.00	-5.81	103.72	-7.0	0.0	-306.91	0.00	0.00	-4.98	103.72	-7.0	0.0	-306.91	0.00	0.00	-4.15	103.72	-7.0	0.0	-306.91	0.00	0.00	-3.32	103.72	-7.1	0.0	-306.91	0.00	0.00	-2.49	103.72	-7.1	0.0	-306.91	0.00	0.00	-1.66	103.72	-7.1	0.0	-306.91	0.00	0.00	-0.83	103.72	-7.1	0.0	-306.91	0.00	0.00	0.00	103.72	-7.1	0.1	-306.91	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0061	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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
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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-5.81	103.72	-7.0	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-4.98	103.72	-7.0	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-4.15	103.72	-7.0	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-3.32	103.72	-7.1	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-2.49	103.72	-7.1	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-1.66	103.72	-7.1	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
-0.83	103.72	-7.1	0.0	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
0.00	103.72	-7.1	0.1	-306.91	0.00	0.00																																																																																																																																																																																																																																																																																											
[-]	[m]	[m]																																																																																																																																																																																																																																																																																															
1	103.72	-0.0061																																																																																																																																																																																																																																																																																															
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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																										
[-]	[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																																																																																																																																																																																																																																																																																										
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[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 J1 Schnitt 1L		Seite Anlage J1/24																																																																																																																																																																																																																																																																																															
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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>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>39.095</td><td>0.00</td><td>0.00</td></tr><tr><td>101.800</td><td>100.799</td><td>39.095</td><td>43.198</td><td>0.00</td><td>0.00</td></tr><tr><td>100.799</td><td>99.999</td><td>43.198</td><td>46.481</td><td>0.00</td><td>0.00</td></tr><tr><td>99.999</td><td>99.849</td><td>46.481</td><td>47.097</td><td>0.00</td><td>0.00</td></tr><tr><td>99.849</td><td>80.000</td><td>47.097</td><td>128.508</td><td>0.00</td><td>0.00</td></tr></table> <p>Hydrodynamische Wasserdrukspannung (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>-74.41</td></tr><tr><td>100.80</td><td>100.00</td><td>-74.41</td><td>-108.43</td></tr><tr><td>100.00</td><td>99.85</td><td>-108.43</td><td>-114.81</td></tr><tr><td>99.85</td><td>80.00</td><td>-114.81</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>-306.9</td></tr><tr><td>103.72</td><td>-212.0</td><td>159.6</td><td>-287.2</td><td></td></tr><tr><td>102.84</td><td>-243.5</td><td>90.3</td><td>-176.3</td><td></td></tr><tr><td>102.75</td><td>-246.9</td><td>83.7</td><td>-168.5</td><td></td></tr><tr><td>102.55</td><td>-254.5</td><td>68.7</td><td>-153.3</td><td></td></tr><tr><td>101.80</td><td>-263.4</td><td>56.8</td><td>-108.7</td><td></td></tr><tr><td>100.80</td><td>-260.6</td><td>70.8</td><td>-41.0</td><td></td></tr><tr><td>100.00</td><td>-270.8</td><td>17.4</td><td>-1.3</td><td></td></tr><tr><td>99.85</td><td>-270.3</td><td>0.0</td><td>0.0</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></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>-21.7</td><td>-7.6</td><td>-3.2</td><td></td></tr><tr><td>107.45</td><td>-29.9</td><td>-12.0</td><td>-6.6</td><td></td></tr><tr><td>107.45</td><td>-76.4</td><td>-12.0</td><td>-36.4</td><td></td></tr><tr><td>106.80</td><td>-92.6</td><td>-22.6</td><td>-47.4</td><td></td></tr><tr><td>105.75</td><td>-121.1</td><td>-46.3</td><td>-82.9</td><td></td></tr><tr><td>105.50</td><td>-128.3</td><td>-53.2</td><td>-95.3</td><td></td></tr><tr><td>104.75</td><td>-150.6</td><td>-78.3</td><td>-144.1</td><td></td></tr><tr><td>103.94</td><td>-175.6</td><td>-114.3</td><td>-221.5</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	39.095	0.00	0.00	101.800	100.799	39.095	43.198	0.00	0.00	100.799	99.999	43.198	46.481	0.00	0.00	99.999	99.849	46.481	47.097	0.00	0.00	99.849	80.000	47.097	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	-74.41	100.80	100.00	-74.41	-108.43	100.00	99.85	-108.43	-114.81	99.85	80.00	-114.81	-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	-306.9	103.72	-212.0	159.6	-287.2		102.84	-243.5	90.3	-176.3		102.75	-246.9	83.7	-168.5		102.55	-254.5	68.7	-153.3		101.80	-263.4	56.8	-108.7		100.80	-260.6	70.8	-41.0		100.00	-270.8	17.4	-1.3		99.85	-270.3	0.0	0.0		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	-21.7	-7.6	-3.2		107.45	-29.9	-12.0	-6.6		107.45	-76.4	-12.0	-36.4		106.80	-92.6	-22.6	-47.4		105.75	-121.1	-46.3	-82.9		105.50	-128.3	-53.2	-95.3		104.75	-150.6	-78.3	-144.1		103.94	-175.6	-114.3	-221.5	
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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	-306.9																																																																																																																																																																																																																																																																																																				
103.72	-212.0	159.6	-287.2																																																																																																																																																																																																																																																																																																					
102.84	-243.5	90.3	-176.3																																																																																																																																																																																																																																																																																																					
102.75	-246.9	83.7	-168.5																																																																																																																																																																																																																																																																																																					
102.55	-254.5	68.7	-153.3																																																																																																																																																																																																																																																																																																					
101.80	-263.4	56.8	-108.7																																																																																																																																																																																																																																																																																																					
100.80	-260.6	70.8	-41.0																																																																																																																																																																																																																																																																																																					
100.00	-270.8	17.4	-1.3																																																																																																																																																																																																																																																																																																					
99.85	-270.3	0.0	0.0																																																																																																																																																																																																																																																																																																					
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	-21.7	-7.6	-3.2																																																																																																																																																																																																																																																																																																					
107.45	-29.9	-12.0	-6.6																																																																																																																																																																																																																																																																																																					
107.45	-76.4	-12.0	-36.4																																																																																																																																																																																																																																																																																																					
106.80	-92.6	-22.6	-47.4																																																																																																																																																																																																																																																																																																					
105.75	-121.1	-46.3	-82.9																																																																																																																																																																																																																																																																																																					
105.50	-128.3	-53.2	-95.3																																																																																																																																																																																																																																																																																																					
104.75	-150.6	-78.3	-144.1																																																																																																																																																																																																																																																																																																					
103.94	-175.6	-114.3	-221.5																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage J1 Schnitt 1L				Seite Anlage J1/25																																																																																																																																																																																																																																																																																																		
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><div>103.76</div><div>-181.1</div><div>-125.0</div><div>-243.0</div><div></div></div><div><div>103.72</div><div>-182.3</div><div>-127.4</div><div>-248.1</div><div>-264.7</div></div><div><div>103.72</div><div>-182.3</div><div>137.3</div><div>-248.1</div><div></div></div><div><div>102.84</div><div>-209.7</div><div>77.8</div><div>-152.6</div><div></div></div><div><div>102.75</div><div>-212.7</div><div>72.2</div><div>-145.9</div><div></div></div><div><div>102.55</div><div>-219.3</div><div>59.4</div><div>-132.7</div><div></div></div><div><div>101.80</div><div>-227.1</div><div>49.1</div><div>-94.2</div><div></div></div><div><div>100.80</div><div>-224.7</div><div>61.4</div><div>-35.6</div><div></div></div><div><div>100.00</div><div>-233.6</div><div>15.1</div><div>-1.2</div><div></div></div><div><div>99.85</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>108.80</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.79</div><div>-0.1</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.80</div><div>-21.7</div><div>-7.6</div><div>-3.2</div><div></div></div><div><div>107.45</div><div>-29.9</div><div>-12.0</div><div>-6.6</div><div></div></div><div><div>107.45</div><div>-76.4</div><div>-12.0</div><div>-36.4</div><div></div></div><div><div>106.80</div><div>-92.6</div><div>-22.6</div><div>-47.4</div><div></div></div><div><div>105.75</div><div>-121.1</div><div>-46.3</div><div>-82.9</div><div></div></div><div><div>105.50</div><div>-128.3</div><div>-53.2</div><div>-95.3</div><div></div></div><div><div>104.75</div><div>-150.6</div><div>-78.3</div><div>-144.1</div><div></div></div><div><div>103.94</div><div>-175.6</div><div>-114.3</div><div>-221.5</div><div></div></div><div><div>103.76</div><div>-181.1</div><div>-125.0</div><div>-243.0</div><div></div></div><div><div>103.72</div><div>-182.3</div><div>-127.4</div><div>-248.1</div><div>-264.7</div></div><div><div>103.72</div><div>-182.3</div><div>137.3</div><div>-248.1</div><div></div></div><div><div>102.84</div><div>-209.7</div><div>77.8</div><div>-152.6</div><div></div></div><div><div>102.75</div><div>-212.7</div><div>72.2</div><div>-145.9</div><div></div></div><div><div>102.55</div><div>-219.3</div><div>59.4</div><div>-132.7</div><div></div></div><div><div>101.80</div><div>-227.1</div><div>49.1</div><div>-94.2</div><div></div></div><div><div>100.80</div><div>-224.7</div><div>61.4</div><div>-35.6</div><div></div></div><div><div>100.00</div><div>-233.6</div><div>15.1</div><div>-1.2</div><div></div></div><div><div>99.85</div><div>-233.3</div><div>0.0</div><div>0.0</div><div></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>108.80</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>108.79</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>107.80</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>106.80</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.75</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>104.75</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.94</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.76</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>-10.2</div></div><div><div>102.84</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.75</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>101.80</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.80</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></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>108.80</div><div>-20.7</div><div>-</div><div>-</div><div>-</div></div><div><div>108.80</div><div>-20.7</div><div>-</div><div>-</div><div>-</div></div><div><div>108.80</div><div>-20.7</div><div>-</div><div>-</div><div>-</div></div><div><div>108.79</div><div>-20.7</div><div>-</div><div>-</div><div>-</div></div><div><div>108.79</div><div>-20.7</div><div>-</div><div>-</div><div>-</div></div><div><div>108.74</div><div>-20.5</div><div>-</div><div>-</div><div>-</div></div><div><div>107.85</div><div>-17.8</div><div>-</div><div>-</div><div>-</div></div><div><div>107.80</div><div>-17.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.80</div><div>-17.7</div><div>-</div><div>-</div><div>-</div></div><div><div>107.75</div><div>-17.5</div><div>-</div><div>-</div><div>-</div></div></div></div> <tr><td colspan="2">Schnitt: Anlage J1 Schnitt 1L</td><td>Seite Anlage J1/26</td></tr> <tr><td colspan="2">Kapitel: 5 LF 3 (BS-T, mit Lasten)</td><td>Archiv Nr.: 11/26</td></tr> <tr><td colspan="2">Vorgang: Genehmigungstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/26	Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/26	Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/26									
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/26									
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>107.50</div> <div>-16.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.45</div> <div>-16.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.45</div> <div>-16.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>107.40</div> <div>-16.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.85</div> <div>-14.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.80</div> <div>-14.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.80</div> <div>-14.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.75</div> <div>-14.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.80</div> <div>-11.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.75</div> <div>-11.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.75</div> <div>-11.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.70</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.55</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.45</div> <div>-10.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.80</div> <div>-8.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.75</div> <div>-8.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.75</div> <div>-8.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.70</div> <div>-8.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.99</div> <div>-6.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.94</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.94</div> <div>-6.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.89</div> <div>-6.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.80</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.76</div> <div>-6.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.76</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>103.67</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.89</div> <div>-4.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.84</div> <div>-4.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.84</div> <div>-4.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.80</div> <div>-4.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.80</div> <div>-4.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.75</div> <div>-4.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.75</div> <div>-4.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.70</div> <div>-3.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-3.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-3.6</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-3.6</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.50</div> <div>-3.5</div> <div>0.00</div> <div>0.00</div> <div>3.45</div> </div> <div> <div>101.85</div> <div>-2.3</div> <div>21.04</div> <div>48.37</div> <div>48.37</div> </div> <div> <div>101.80</div> <div>-2.2</div> <div>21.04</div> <div>46.43</div> <div>51.82</div> </div> <div> <div>101.80</div> <div>-2.2</div> <div>23.48</div> <div>51.83</div> <div>51.82</div> </div> <div> <div>101.75</div> <div>-2.1</div> <div>23.48</div> <div>49.66</div> <div>55.28</div> </div> <div> <div>100.85</div> <div>-0.5</div> <div>50.00</div> <div>25.71</div> <div>117.47</div> </div> <div> <div>100.80</div> <div>-0.4</div> <div>50.00</div> <div>21.38</div> <div>120.92</div> </div> <div> <div>100.80</div> <div>-0.4</div> <div>50.00</div> <div>21.38</div> <div>120.92</div> </div> <div> <div>100.75</div> <div>-0.3</div> <div>50.00</div> <div>17.05</div> <div>124.38</div> </div> <div> <div>100.05</div> <div>0.9</div> <div>50.00</div> <div>-43.04</div> <div>172.75</div> </div> <div> <div>100.00</div> <div>0.9</div> <div>50.00</div> <div>-47.31</div> <div>176.20</div> </div> <div> <div>100.00</div> <div>0.9</div> <div>50.00</div> <div>-47.31</div> <div>176.20</div> </div> <div> <div>99.95</div> <div>1.0</div> <div>50.00</div> <div>-51.59</div> <div>179.66</div> </div> <div> <div>99.90</div> <div>1.1</div> <div>50.00</div> <div>-55.87</div> <div>183.11</div> </div> <div> <div>99.85</div> <div>1.2</div> <div>50.00</div> <div>-60.14</div> <div>186.56</div> </div> </div> <div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.09797179</div> <div>Theoretischer Fußpunkt = 99.849 m</div> <div>Einbindetiefe tg = 2.70 m</div> <div>Profillänge = 8.95 m</div> </div>		
Schnitt:	Anlage J1    Schnitt 1L	Seite Anlage J1/27
Kapitel:	5                    LF 3 (BS-T, mit Lasten)	Archiv Nr.: 11/27
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: <math>P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_k = 169.36 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 46.50 \text{ kN/m}</math> <math>E_{av,k} = 49.56 \text{ kN/m}</math> (<math>E_{ah,k} = 273.99 \text{ kN/m}</math>) <math>B_{v,k} = 29.41</math> Summe <math>V_{k} = 236.01 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.73 bis 97.21 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 99.85 55.00 s3: Flussskies, -sand Mantelfläche bis 99.85 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 148.50 / 1.40 = 106.07 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 971.12 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 203.23 - 0.00 + 56.99 + 55.80 = 316.03 \text{ kN/m}</math> <math>\implies \mu = V_{d} / R_{d} = 316.03 / 971.12 = 0.33</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage J1 Schnitt 1L		Seite Anlage J1/28
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/28
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

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Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 1  
Datei: 05\_BS 1\_LF4 (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-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 = 9.85 m

Statisch geprüft

11/29

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  $\mu_e = 191.102 / 192.066 = 0.995$   
Bettungslager  $B_{h,d} = 191.102 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 192.066 \text{ kN/m}$

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	-272.11	-211.01	-211.01	-50.22	3.900E+7	2.100E+7	-269.04

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	-7.8	0.0	-272.80	0.00	0.00
-7.47	103.72	-7.8	0.0	-272.80	0.00	0.00
-7.47	103.72	-7.8	0.0	-272.80	0.00	0.00
-6.64	103.72	-7.8	0.0	-272.80	0.00	0.00
-5.81	103.72	-7.8	0.0	-272.80	0.00	0.00
-4.98	103.72	-7.8	0.0	-272.80	0.00	0.00
-4.15	103.72	-7.8	0.0	-272.80	0.00	0.00
-3.32	103.72	-7.8	0.0	-272.80	0.00	0.00
-2.49	103.72	-7.8	0.0	-272.80	0.00	0.00
-1.66	103.72	-7.8	0.1	-272.80	0.00	0.00
-0.83	103.72	-7.8	0.1	-272.80	0.00	0.00
0.00	103.72	-7.8	0.1	-272.80	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0061

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 J1	Schnitt 1L	Seite Anlage J1/30
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr. 11/30
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



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>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>102.100</td><td>34.234</td><td>36.080</td><td>0.00</td><td>0.00</td></tr><tr><td>102.100</td><td>101.800</td><td>36.080</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>98.949</td><td>45.517</td><td>49.005</td><td>0.00</td><td>0.00</td></tr><tr><td>98.949</td><td>80.000</td><td>49.005</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>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>-40.94</td></tr><tr><td>101.80</td><td>100.80</td><td>-40.94</td><td>-80.42</td></tr><tr><td>100.80</td><td>99.80</td><td>-80.42</td><td>-119.90</td></tr><tr><td>99.80</td><td>98.95</td><td>-119.90</td><td>-153.45</td></tr><tr><td>98.95</td><td>80.00</td><td>-153.45</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>-272.8</td></tr><tr><td>103.72</td><td>-231.4</td><td>122.0</td><td>-287.2</td><td></td></tr><tr><td>102.84</td><td>-265.5</td><td>47.5</td><td>-211.6</td><td></td></tr><tr><td>102.75</td><td>-269.2</td><td>40.4</td><td>-207.6</td><td></td></tr><tr><td>102.55</td><td>-277.5</td><td>24.1</td><td>-201.2</td><td></td></tr><tr><td>102.10</td><td>-281.4</td><td>21.7</td><td>-191.7</td><td></td></tr><tr><td>101.80</td><td>-279.7</td><td>30.2</td><td>-184.1</td><td></td></tr><tr><td>100.80</td><td>-261.0</td><td>87.2</td><td>-124.4</td><td></td></tr><tr><td>99.80</td><td>-267.7</td><td>75.2</td><td>-36.1</td><td></td></tr><tr><td>98.95</td><td>-278.6</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	102.100	34.234	36.080	0.00	0.00	102.100	101.800	36.080	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	98.949	45.517	49.005	0.00	0.00	98.949	80.000	49.005	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	102.10	-11.33	-29.09	102.10	101.80	-29.09	-40.94	101.80	100.80	-40.94	-80.42	100.80	99.80	-80.42	-119.90	99.80	98.95	-119.90	-153.45	98.95	80.00	-153.45	-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	-272.8	103.72	-231.4	122.0	-287.2		102.84	-265.5	47.5	-211.6		102.75	-269.2	40.4	-207.6		102.55	-277.5	24.1	-201.2		102.10	-281.4	21.7	-191.7		101.80	-279.7	30.2	-184.1		100.80	-261.0	87.2	-124.4		99.80	-267.7	75.2	-36.1		98.95	-278.6	0.0	0.0	
106.800	105.750	16.756	24.530	0.00	0.00																																																																																																																																																																																																																																																																																				
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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	102.100	34.234	36.080	0.00	0.00																																																																																																																																																																																																																																																																																				
102.100	101.800	36.080	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	98.949	45.517	49.005	0.00	0.00																																																																																																																																																																																																																																																																																				
98.949	80.000	49.005	126.725	0.00	0.00																																																																																																																																																																																																																																																																																				
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0.00	0.00	108.80	102.55																																																																																																																																																																																																																																																																																						
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3	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																			
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102.75	102.55	0.00	0.00																																																																																																																																																																																																																																																																																						
102.55	102.10	-11.33	-29.09																																																																																																																																																																																																																																																																																						
102.10	101.80	-29.09	-40.94																																																																																																																																																																																																																																																																																						
101.80	100.80	-40.94	-80.42																																																																																																																																																																																																																																																																																						
100.80	99.80	-80.42	-119.90																																																																																																																																																																																																																																																																																						
99.80	98.95	-119.90	-153.45																																																																																																																																																																																																																																																																																						
98.95	80.00	-153.45	-901.29																																																																																																																																																																																																																																																																																						
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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	-272.8																																																																																																																																																																																																																																																																																					
103.72	-231.4	122.0	-287.2																																																																																																																																																																																																																																																																																						
102.84	-265.5	47.5	-211.6																																																																																																																																																																																																																																																																																						
102.75	-269.2	40.4	-207.6																																																																																																																																																																																																																																																																																						
102.55	-277.5	24.1	-201.2																																																																																																																																																																																																																																																																																						
102.10	-281.4	21.7	-191.7																																																																																																																																																																																																																																																																																						
101.80	-279.7	30.2	-184.1																																																																																																																																																																																																																																																																																						
100.80	-261.0	87.2	-124.4																																																																																																																																																																																																																																																																																						
99.80	-267.7	75.2	-36.1																																																																																																																																																																																																																																																																																						
98.95	-278.6	0.0	0.0																																																																																																																																																																																																																																																																																						
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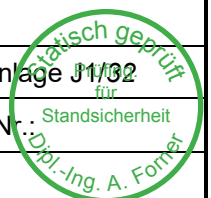
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Standicherheit

Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																													
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<div>Schnittgrößen ([g+q+w],k)</div> 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<div><div>98.950.00.00.0</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>108.80</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.80</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.80</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.79</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.79</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>108.74</td><td>-18.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.85</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.80</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.80</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.75</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.50</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.45</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.85</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.80</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.80</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-11.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-10.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-10.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-10.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-10.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-8.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-8.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.99</td><td>-6.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.94</td><td>-6.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.89</td><td>-6.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-6.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.76</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.76</td><td>-6.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-6.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.67</td><td>-6.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.89</td><td>-4.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.84</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.80</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.80</td><td>-4.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.75</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.75</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.70</td><td>-4.2</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>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>-3.3</td><td>14.49</td><td>47.46</td><td>47.46</td></tr><tr><td>102.10</td><td>-3.2</td><td>14.49</td><td>46.29</td><td>50.91</td></tr><tr><td>102.10</td><td>-3.2</td><td>15.94</td><td>50.91</td><td>50.91</td></tr><tr><td>102.05</td><td>-3.1</td><td>15.94</td><td>49.64</td><td>54.36</td></tr><tr><td>101.85</td><td>-2.8</td><td>24.32</td><td>68.18</td><td>68.18</td></tr><tr><td>101.80</td><td>-2.7</td><td>24.32</td><td>66.32</td><td>71.64</td></tr><tr><td>101.80</td><td>-2.7</td><td>26.27</td><td>71.64</td><td>71.64</td></tr><tr><td>101.75</td><td>-2.7</td><td>26.27</td><td>69.65</td><td>75.09</td></tr><tr><td>100.85</td><td>-1.4</td><td>50.00</td><td>69.13</td><td>137.27</td></tr><tr><td>100.80</td><td>-1.3</td><td>50.00</td><td>65.84</td><td>140.73</td></tr><tr><td>100.80</td><td>-1.3</td><td>50.00</td><td>65.84</td><td>140.73</td></tr><tr><td>100.75</td><td>-1.3</td><td>50.00</td><td>62.58</td><td>144.18</td></tr><tr><td>99.85</td><td>-0.1</td><td>50.00</td><td>6.46</td><td>206.36</td></tr></tbody></table></div>						Tiefe	w	ks	sig.Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	108.80	-19.0	-	-	-	108.80	-19.0	-	-	-	108.80	-19.0	-	-	-	108.79	-19.0	-	-	-	108.79	-19.0	-	-	-	108.74	-18.9	-	-	-	107.85	-16.5	-	-	-	107.80	-16.3	-	-	-	107.80	-16.3	-	-	-	107.75	-16.2	-	-	-	107.50	-15.5	-	-	-	107.45	-15.4	-	-	-	107.45	-15.4	-	-	-	107.40	-15.3	-	-	-	106.85	-13.8	-	-	-	106.80	-13.7	-	-	-	106.80	-13.7	-	-	-	106.75	-13.5	-	-	-	105.80	-11.0	-	-	-	105.75	-10.9	-	-	-	105.75	-10.9	-	-	-	105.70	-10.8	-	-	-	105.55	-10.4	-	-	-	105.50	-10.3	-	-	-	105.50	-10.3	-	-	-	105.45	-10.2	-	-	-	104.80	-8.6	-	-	-	104.75	-8.5	-	-	-	104.75	-8.5	-	-	-	104.70	-8.3	-	-	-	103.99	-6.7	-	-	-	103.94	-6.6	-	-	-	103.94	-6.6	-	-	-	103.89	-6.5	-	-	-	103.80	-6.3	-	-	-	103.76	-6.2	-	-	-	103.76	-6.2	-	-	-	103.72	-6.1	-	-	-	103.72	-6.1	-	-	-	103.67	-6.0	-	-	-	102.89	-4.5	-	-	-	102.84	-4.4	-	-	-	102.84	-4.4	-	-	-	102.80	-4.4	-	-	-	102.80	-4.4	-	-	-	102.75	-4.3	-	-	-	102.75	-4.3	-	-	-	102.70	-4.2	-	-	-	102.60	-4.0	-	-	-	102.55	-3.9	0.00	0.00	0.00	102.55	-3.9	0.00	0.00	19.82	102.50	-3.9	0.00	0.00	23.27	102.15	-3.3	14.49	47.46	47.46	102.10	-3.2	14.49	46.29	50.91	102.10	-3.2	15.94	50.91	50.91	102.05	-3.1	15.94	49.64	54.36	101.85	-2.8	24.32	68.18	68.18	101.80	-2.7	24.32	66.32	71.64	101.80	-2.7	26.27	71.64	71.64	101.75	-2.7	26.27	69.65	75.09	100.85	-1.4	50.00	69.13	137.27	100.80	-1.3	50.00	65.84	140.73	100.80	-1.3	50.00	65.84	140.73	100.75	-1.3	50.00	62.58	144.18	99.85	-0.1	50.00	6.46	206.36
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Auftraggeber: Stadtverwaltung Leipzig										
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024								
<div><div><div>99.80-0.150.003.44209.82</div><div>99.80-0.150.003.44209.82</div><div>99.750.050.000.43213.27</div><div>99.000.950.00-44.35265.09</div><div>98.950.950.00-47.32268.54</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.06820236</div><div>Theoretischer Fußpunkt = 98.949 m</div><div>Einbindetiefe tg = 3.60 m</div><div>Profillänge = 9.85 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k</div><div>G,k = 186.39 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 46.50 kN/m</div><div>Eav,k = 54.84 kN/m (Eah,k = 298.88 kN/m)</div><div>Bv,k = 59.70</div><div>Summe V,k = 228.04 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 99.83 bis 96.31 m) ==&gt; 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>98.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table></div><div>Mantelfläche bis 98.95 m = 1.000 m²/m/m ==&gt; R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 198.00 / 1.40 = 141.43 kN/m</div><div>R,d = Rb,d + R,s1,d = 1006.48 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 251.63 - 0.00 + 69.92 + 62.78 = 384.33 kN/m</div><div>==&gt; µ = V,d / R,d = 384.33 / 1006.48 = 0.38</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	98.95	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung							
102.55	98.95	55.00	s3: Flussskies, -sand							
Schnitt:	Anlage J1 Schnitt 1L	Seite Anlage J1/34								
Kapitel:	6 LF 4 (BS-P, mit Lasten)	Archiv Nr.: 11/34								
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 K1 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: 00_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><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> <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 = 8.45 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 = 352.584 / 880.367 = 0.400 Bettungslager Bh,d = 352.584 kN/m Erdwiderstand Eph,d = 880.367 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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Schnitt:	Anlage K1 Schnitt 2L	Seite Anlage K1/19.																																															
Kapitel:	1 LF 1.1 (BS-T, ohne Lasten)	Archiv Nr.: 119. 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>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 &gt; 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>106.707</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>102.042</td><td>32.124</td><td>33.760</td><td>5.00</td><td>5.00</td></tr><tr><td>102.042</td><td>101.443</td><td>33.760</td><td>36.216</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>36.216</td><td>40.307</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.448</td><td>40.307</td><td>44.399</td><td>5.00</td><td>5.00</td></tr><tr><td>99.448</td><td>98.999</td><td>44.399</td><td>46.241</td><td>5.00</td><td>5.00</td></tr><tr><td>98.999</td><td>80.000</td><td>46.241</td><td>124.166</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>-152.72</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	102.042	32.124	33.760	5.00	5.00	102.042	101.443	33.760	36.216	5.00	5.00	101.443	100.445	36.216	40.307	5.00	5.00	100.445	99.448	40.307	44.399	5.00	5.00	99.448	98.999	44.399	46.241	5.00	5.00	98.999	80.000	46.241	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	-152.72	<div>Schnitt: Anlage K1 Schnitt 2L</div> <div>Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage K1/2</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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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	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	102.042	32.124	33.760	5.00	5.00																																																																																																																																																																																																																																																																																																												
102.042	101.443	33.760	36.216	5.00	5.00																																																																																																																																																																																																																																																																																																												
101.443	100.445	36.216	40.307	5.00	5.00																																																																																																																																																																																																																																																																																																												
100.445	99.448	40.307	44.399	5.00	5.00																																																																																																																																																																																																																																																																																																												
99.448	98.999	44.399	46.241	5.00	5.00																																																																																																																																																																																																																																																																																																												
98.999	80.000	46.241	124.166	5.00	5.00																																																																																																																																																																																																																																																																																																												
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																														
0.00	0.00	107.45	106.00																																																																																																																																																																																																																																																																																																														
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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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106.00	105.50	0.00	-29.26																																																																																																																																																																																																																																																																																																														
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105.45	105.09	-32.26	-53.25																																																																																																																																																																																																																																																																																																														
105.09	105.00	-39.50	-42.35																																																																																																																																																																																																																																																																																																														
105.00	104.45	-42.35	-51.12																																																																																																																																																																																																																																																																																																														
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103.44	102.69	-67.06	-79.01																																																																																																																																																																																																																																																																																																														
102.69	102.44	-142.12	-152.72																																																																																																																																																																																																																																																																																																														



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>102.44102.04-152.72-169.68</div><div>102.04101.44-169.68-195.13</div><div>101.44100.45-195.13-237.53</div><div>100.4599.45-237.53-279.93</div><div>99.4599.00-279.93-299.01</div><div>99.0080.00-299.01-1106.50</div></div><div><div>Schnittgrößen (Bemessungswerte)</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>106.71</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>-45.3</td><td>-8.0</td><td>-29.4</td></tr><tr><td>105.00</td><td>-46.4</td><td>-8.8</td><td>-30.2</td></tr><tr><td>104.45</td><td>-53.9</td><td>-16.3</td><td>-37.0</td></tr><tr><td>103.44</td><td>-69.0</td><td>-39.4</td><td>-63.9</td></tr><tr><td>102.69</td><td>-81.6</td><td>-64.6</td><td>-102.7</td></tr><tr><td>102.44</td><td>-71.4</td><td>-35.8</td><td>-115.1</td></tr><tr><td>102.04</td><td>-58.3</td><td>1.7</td><td>-121.6</td></tr><tr><td>101.44</td><td>-45.4</td><td>39.7</td><td>-108.1</td></tr><tr><td>100.45</td><td>-39.7</td><td>59.0</td><td>-54.6</td></tr><tr><td>99.45</td><td>-51.8</td><td>28.9</td><td>-6.8</td></tr><tr><td>99.00</td><td>-60.3</td><td>0.0</td><td>0.0</td></tr></table><div><div>Schnittgrößen ([g+q+w],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>106.71</td><td>-16.2</td><td>-5.8</td><td>-1.4</td></tr><tr><td>106.40</td><td>-23.8</td><td>-10.9</td><td>-4.0</td></tr><tr><td>106.00</td><td>-34.2</td><td>-18.6</td><td>-9.8</td></tr><tr><td>105.50</td><td>-40.1</td><td>-19.2</td><td>-20.1</td></tr><tr><td>105.45</td><td>-40.2</td><td>-18.1</td><td>-21.1</td></tr><tr><td>105.09</td><td>-39.4</td><td>-7.1</td><td>-25.6</td></tr><tr><td>105.00</td><td>-40.4</td><td>-7.8</td><td>-26.3</td></tr><tr><td>104.45</td><td>-46.9</td><td>-14.2</td><td>-32.2</td></tr><tr><td>103.44</td><td>-60.1</td><td>-34.2</td><td>-55.6</td></tr><tr><td>102.69</td><td>-71.0</td><td>-55.9</td><td>-89.2</td></tr><tr><td>102.44</td><td>-62.1</td><td>-31.0</td><td>-99.9</td></tr><tr><td>102.04</td><td>-50.7</td><td>1.6</td><td>-105.5</td></tr><tr><td>101.44</td><td>-39.5</td><td>34.5</td><td>-93.8</td></tr><tr><td>100.45</td><td>-34.6</td><td>51.2</td><td>-47.3</td></tr><tr><td>99.45</td><td>-45.1</td><td>25.0</td><td>-5.9</td></tr><tr><td>99.00</td><td>-52.5</td><td>0.0</td><td>0.0</td></tr></table><div><div>Schnittgrößen (g+w,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>106.71</td><td>-16.2</td><td>-5.8</td><td>-1.4</td></tr><tr><td>106.40</td><td>-23.8</td><td>-10.9</td><td>-4.0</td></tr><tr><td>106.00</td><td>-34.2</td><td>-18.6</td><td>-9.8</td></tr><tr><td>105.50</td><td>-40.1</td><td>-19.2</td><td>-20.1</td></tr><tr><td>105.45</td><td>-40.2</td><td>-18.1</td><td>-21.1</td></tr><tr><td>105.09</td><td>-39.4</td><td>-7.1</td><td>-25.6</td></tr><tr><td>105.00</td><td>-40.4</td><td>-7.8</td><td>-26.3</td></tr><tr><td>104.45</td><td>-46.9</td><td>-14.2</td><td>-32.2</td></tr><tr><td>103.44</td><td>-60.1</td><td>-34.2</td><td>-55.6</td></tr><tr><td>102.69</td><td>-71.0</td><td>-55.9</td><td>-89.2</td></tr><tr><td>102.44</td><td>-62.1</td><td>-31.0</td><td>-99.9</td></tr><tr><td>102.04</td><td>-50.7</td><td>1.6</td><td>-105.5</td></tr><tr><td>101.44</td><td>-39.5</td><td>34.5</td><td>-93.8</td></tr><tr><td>100.45</td><td>-34.6</td><td>51.2</td><td>-47.3</td></tr><tr><td>99.45</td><td>-45.1</td><td>25.0</td><td>-5.9</td></tr><tr><td>99.00</td><td>-52.5</td><td>0.0</td><td>0.0</td></tr></table></div></div></div></div>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	-18.6	-6.6	-1.6	106.40	-27.4	-12.5	-4.6	106.00	-39.3	-21.3	-11.3	105.50	-46.1	-22.0	-23.2	105.45	-46.2	-20.7	-24.3	105.09	-45.3	-8.0	-29.4	105.00	-46.4	-8.8	-30.2	104.45	-53.9	-16.3	-37.0	103.44	-69.0	-39.4	-63.9	102.69	-81.6	-64.6	-102.7	102.44	-71.4	-35.8	-115.1	102.04	-58.3	1.7	-121.6	101.44	-45.4	39.7	-108.1	100.45	-39.7	59.0	-54.6	99.45	-51.8	28.9	-6.8	99.00	-60.3	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	-16.2	-5.8	-1.4	106.40	-23.8	-10.9	-4.0	106.00	-34.2	-18.6	-9.8	105.50	-40.1	-19.2	-20.1	105.45	-40.2	-18.1	-21.1	105.09	-39.4	-7.1	-25.6	105.00	-40.4	-7.8	-26.3	104.45	-46.9	-14.2	-32.2	103.44	-60.1	-34.2	-55.6	102.69	-71.0	-55.9	-89.2	102.44	-62.1	-31.0	-99.9	102.04	-50.7	1.6	-105.5	101.44	-39.5	34.5	-93.8	100.45	-34.6	51.2	-47.3	99.45	-45.1	25.0	-5.9	99.00	-52.5	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	107.45	0.0	0.0	0.0	106.71	-16.2	-5.8	-1.4	106.40	-23.8	-10.9	-4.0	106.00	-34.2	-18.6	-9.8	105.50	-40.1	-19.2	-20.1	105.45	-40.2	-18.1	-21.1	105.09	-39.4	-7.1	-25.6	105.00	-40.4	-7.8	-26.3	104.45	-46.9	-14.2	-32.2	103.44	-60.1	-34.2	-55.6	102.69	-71.0	-55.9	-89.2	102.44	-62.1	-31.0	-99.9	102.04	-50.7	1.6	-105.5	101.44	-39.5	34.5	-93.8	100.45	-34.6	51.2	-47.3	99.45	-45.1	25.0	-5.9	99.00	-52.5	0.0	0.0
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104.45	-46.9	-14.2	-32.2																																																																																																																																																																																																																																			
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Statisch geprüft

für

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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>105.09</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>102.04</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>100.45</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>99.00</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>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-8.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.76</td><td>-8.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-7.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-7.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-7.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-7.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-7.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-7.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-6.9</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-6.4</td><td>6.68</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-6.3</td><td>6.68</td><td>42.36</td><td>47.55</td></tr><tr><td>105.50</td><td>-6.3</td><td>7.49</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-6.3</td><td>7.49</td><td>47.04</td><td>52.42</td></tr><tr><td>105.45</td><td>-6.3</td><td>8.35</td><td>52.42</td><td>52.42</td></tr><tr><td>105.40</td><td>-6.2</td><td>8.35</td><td>51.86</td><td>57.30</td></tr><tr><td>105.14</td><td>-5.9</td><td>10.00</td><td>58.75</td><td>81.67</td></tr><tr><td>105.09</td><td>-5.8</td><td>10.00</td><td>58.08</td><td>86.54</td></tr><tr><td>105.09</td><td>-5.8</td><td>5.00</td><td>29.04</td><td>64.18</td></tr><tr><td>105.05</td><td>-5.7</td><td>5.00</td><td>28.75</td><td>66.50</td></tr><tr><td>105.05</td><td>-5.7</td><td>5.00</td><td>28.75</td><td>66.50</td></tr><tr><td>105.00</td><td>-5.7</td><td>5.00</td><td>28.46</td><td>68.82</td></tr><tr><td>105.00</td><td>-5.7</td><td>5.00</td><td>28.46</td><td>68.82</td></tr><tr><td>104.95</td><td>-5.6</td><td>5.00</td><td>28.13</td><td>70.12</td></tr><tr><td>104.50</td><td>-5.0</td><td>5.00</td><td>25.23</td><td>81.77</td></tr><tr><td>104.45</td><td>-5.0</td><td>5.00</td><td>24.91</td><td>83.07</td></tr><tr><td>104.45</td><td>-5.0</td><td>5.00</td><td>24.91</td><td>83.07</td></tr><tr><td>104.40</td><td>-4.9</td><td>5.00</td><td>24.59</td><td>84.36</td></tr><tr><td>103.49</td><td>-3.8</td><td>5.00</td><td>19.00</td><td>107.67</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.70</td><td>108.97</td></tr><tr><td>103.44</td><td>-3.7</td><td>5.00</td><td>18.70</td><td>108.97</td></tr><tr><td>103.39</td><td>-3.7</td><td>5.00</td><td>18.40</td><td>110.26</td></tr><tr><td>102.74</td><td>-2.9</td><td>5.00</td><td>14.63</td><td>127.09</td></tr><tr><td>102.69</td><td>-2.9</td><td>5.00</td><td>14.35</td><td>128.39</td></tr><tr><td>102.69</td><td>-2.9</td><td>50.00</td><td>143.46</td><td>230.95</td></tr><tr><td>102.64</td><td>-2.8</td><td>50.00</td><td>140.71</td><td>234.40</td></tr><tr><td>102.49</td><td>-2.7</td><td>50.00</td><td>132.58</td><td>244.73</td></tr><tr><td>102.44</td><td>-2.6</td><td>50.00</td><td>129.91</td><td>248.18</td></tr><tr><td>102.44</td><td>-2.6</td><td>50.00</td><td>129.91</td><td>248.18</td></tr><tr><td>102.39</td><td>-2.5</td><td>50.00</td><td>127.26</td><td>251.62</td></tr><tr><td>102.09</td><td>-2.2</td><td>50.00</td><td>111.82</td><td>272.29</td></tr><tr><td>102.04</td><td>-2.2</td><td>50.00</td><td>109.32</td><td>275.74</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	102.04	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	99.00	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-8.9	-	-	-	107.40	-8.9	-	-	-	106.76	-8.0	-	-	-	106.71	-7.9	-	-	-	106.71	-7.9	-	-	-	106.66	-7.9	-	-	-	106.45	-7.6	-	-	-	106.40	-7.5	-	-	-	106.40	-7.5	-	-	-	106.35	-7.5	-	-	-	106.05	-7.1	-	-	-	106.00	-7.0	0.00	0.00	0.00	106.00	-7.0	0.00	0.00	0.00	105.95	-6.9	0.00	0.00	4.75	105.55	-6.4	6.68	42.80	42.79	105.50	-6.3	6.68	42.36	47.55	105.50	-6.3	7.49	47.55	47.55	105.45	-6.3	7.49	47.04	52.42	105.45	-6.3	8.35	52.42	52.42	105.40	-6.2	8.35	51.86	57.30	105.14	-5.9	10.00	58.75	81.67	105.09	-5.8	10.00	58.08	86.54	105.09	-5.8	5.00	29.04	64.18	105.05	-5.7	5.00	28.75	66.50	105.05	-5.7	5.00	28.75	66.50	105.00	-5.7	5.00	28.46	68.82	105.00	-5.7	5.00	28.46	68.82	104.95	-5.6	5.00	28.13	70.12	104.50	-5.0	5.00	25.23	81.77	104.45	-5.0	5.00	24.91	83.07	104.45	-5.0	5.00	24.91	83.07	104.40	-4.9	5.00	24.59	84.36	103.49	-3.8	5.00	19.00	107.67	103.44	-3.7	5.00	18.70	108.97	103.44	-3.7	5.00	18.70	108.97	103.39	-3.7	5.00	18.40	110.26	102.74	-2.9	5.00	14.63	127.09	102.69	-2.9	5.00	14.35	128.39	102.69	-2.9	50.00	143.46	230.95	102.64	-2.8	50.00	140.71	234.40	102.49	-2.7	50.00	132.58	244.73	102.44	-2.6	50.00	129.91	248.18	102.44	-2.6	50.00	129.91	248.18	102.39	-2.5	50.00	127.26	251.62	102.09	-2.2	50.00	111.82	272.29	102.04	-2.2	50.00	109.32	275.74
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104.95	-5.6	5.00	28.13	70.12																																																																																																																																																																																																																																																																																																																													
104.50	-5.0	5.00	25.23	81.77																																																																																																																																																																																																																																																																																																																													
104.45	-5.0	5.00	24.91	83.07																																																																																																																																																																																																																																																																																																																													
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104.40	-4.9	5.00	24.59	84.36																																																																																																																																																																																																																																																																																																																													
103.49	-3.8	5.00	19.00	107.67																																																																																																																																																																																																																																																																																																																													
103.44	-3.7	5.00	18.70	108.97																																																																																																																																																																																																																																																																																																																													
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102.74	-2.9	5.00	14.63	127.09																																																																																																																																																																																																																																																																																																																													
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102.64	-2.8	50.00	140.71	234.40																																																																																																																																																																																																																																																																																																																													
102.49	-2.7	50.00	132.58	244.73																																																																																																																																																																																																																																																																																																																													
102.44	-2.6	50.00	129.91	248.18																																																																																																																																																																																																																																																																																																																													
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102.09	-2.2	50.00	111.82	272.29																																																																																																																																																																																																																																																																																																																													
102.04	-2.2	50.00	109.32	275.74																																																																																																																																																																																																																																																																																																																													
Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/4																																																																																																																																																																																																																																																																																																																													
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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>102.04-2.250.00109.32275.74</div><div>101.99-2.150.00106.85279.18</div><div>101.49-1.750.0083.32313.63</div><div>101.44-1.650.0081.08317.08</div><div>101.44-1.650.0081.08317.08</div><div>101.39-1.650.0078.86320.52</div><div>100.50-0.850.0041.83382.54</div><div>100.45-0.850.0039.90385.98</div><div>100.45-0.850.0039.90385.98</div><div>100.40-0.850.0037.98389.43</div><div>99.50-0.150.004.58451.44</div><div>99.45-0.150.002.76454.89</div><div>99.45-0.150.002.76454.89</div><div>99.400.050.000.94458.33</div><div>99.050.250.00-11.78482.45</div><div>99.000.350.00-13.59485.89</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.04172703</div><div>Theoretischer Fußpunkt = 98.999 m</div><div>Einbindetiefe tg = 7.00 m</div><div>Profillänge = 8.45 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k</div><div>G,k = 159.90 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 47.55 kN/m (Eah,k = 271.46 kN/m)</div><div>Bv,k = 113.53</div><div>Summe V,k = 93.93 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 99.88 bis 96.36 m) ==&gt; 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>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>99.00</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table></div><div>Mantelfläche bis 99.00 m = 1.000 m²/m/m ==&gt; R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 202.95 / 1.40 = 144.96 kN/m</div><div>R,d = Rb,d + R,s1,d = 1010.01 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 191.88 - 0.00 + 54.69 + 0.00 = 246.57 kN/m</div><div>==&gt; µ = V,d / R,d = 246.57 / 1010.01 = 0.24</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.09	0.00	S1: Auffüllungen	105.09	102.69	0.00	S2: Auelehm	102.69	99.00	55.00	s3: Flusskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung															
106.00	105.09	0.00	S1: Auffüllungen															
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Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/5																
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 115																
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><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: 01_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.45 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 <math>\mu_e = 394.905 / 838.319 = 0.471</math> Bettungslager <math>B_{h,d} = 394.905</math> kN/m Erdwiderstand <math>E_{ph,d} = 838.319</math> 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																																									
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Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/6																																															
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 116																																															
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																															

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<div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th>gam,k</th><th>gam',k</th><th>phi,k</th><th>c(pas),k</th><th>c(akt),k</th><th>d(p)/phi</th><th>d(a)/phi</th><th>qc</th><th>cu,k</th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[kN/m²]</th><th>[kN/m²]</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 - 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 &lt;&gt; 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><thead><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></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 colspan="2">[kN/m²]</th></tr></thead><tbody><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>35.690</td><td>5.00</td><td>5.00</td></tr><tr><td>102.441</td><td>102.091</td><td>35.690</td><td>37.122</td><td>5.00</td><td>5.00</td></tr><tr><td>102.091</td><td>101.443</td><td>37.122</td><td>39.782</td><td>5.00</td><td>5.00</td></tr><tr><td>101.443</td><td>100.445</td><td>39.782</td><td>43.874</td><td>5.00</td><td>5.00</td></tr><tr><td>100.445</td><td>99.448</td><td>43.874</td><td>47.966</td><td>5.00</td><td>5.00</td></tr><tr><td>99.448</td><td>98.999</td><td>47.966</td><td>49.807</td><td>5.00</td><td>5.00</td></tr><tr><td>98.999</td><td>80.000</td><td>49.807</td><td>127.732</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> <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>105.09</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></tbody></table> <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>106.40</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>-152.72</td></tr></tbody></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/m²]	[kN/m²]	[°]	[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	35.690	5.00	5.00	102.441	102.091	35.690	37.122	5.00	5.00	102.091	101.443	37.122	39.782	5.00	5.00	101.443	100.445	39.782	43.874	5.00	5.00	100.445	99.448	43.874	47.966	5.00	5.00	99.448	98.999	47.966	49.807	5.00	5.00	98.999	80.000	49.807	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	-152.72	<div>Schnitt: Anlage K1 Schnitt 2L</div> <div>Kapitel: 2 LF 1.2 (BS-T, mit Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage K1/7</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																																																																																																																																																																																																																																																																																																												
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Standssicherheit

Dipl.-Ing. A. Forner

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																				
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<div><div><div>102.44102.09-152.72-167.56</div><div>102.09101.44-167.56-195.13</div><div>101.44100.45-195.13-237.53</div><div>100.4599.45-237.53-279.93</div><div>99.4599.00-279.93-299.01</div><div>99.0080.00-299.01-1106.50</div></div><div><div>Schnittgrößen 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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>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>100.45</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>99.00</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>-10.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>107.40</td><td>-10.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.75</td><td>-9.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.71</td><td>-9.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.66</td><td>-9.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.45</td><td>-9.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.40</td><td>-9.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.35</td><td>-9.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-8.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.00</td><td>-8.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>106.00</td><td>-8.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.95</td><td>-8.4</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-7.7</td><td>5.55</td><td>42.80</td><td>42.79</td></tr><tr><td>105.50</td><td>-7.6</td><td>5.55</td><td>42.35</td><td>47.55</td></tr><tr><td>105.50</td><td>-7.6</td><td>6.24</td><td>47.55</td><td>47.55</td></tr><tr><td>105.45</td><td>-7.5</td><td>6.24</td><td>47.03</td><td>52.42</td></tr><tr><td>105.45</td><td>-7.5</td><td>6.95</td><td>52.43</td><td>52.42</td></tr><tr><td>105.40</td><td>-7.5</td><td>6.95</td><td>51.85</td><td>57.30</td></tr><tr><td>105.14</td><td>-7.0</td><td>10.00</td><td>70.43</td><td>81.67</td></tr><tr><td>105.09</td><td>-7.0</td><td>10.00</td><td>69.61</td><td>86.54</td></tr><tr><td>105.09</td><td>-7.0</td><td>5.00</td><td>34.81</td><td>64.18</td></tr><tr><td>105.05</td><td>-6.9</td><td>5.00</td><td>34.44</td><td>66.50</td></tr><tr><td>105.05</td><td>-6.9</td><td>5.00</td><td>34.44</td><td>66.50</td></tr><tr><td>105.00</td><td>-6.8</td><td>5.00</td><td>34.08</td><td>68.82</td></tr><tr><td>105.00</td><td>-6.8</td><td>5.00</td><td>34.08</td><td>68.82</td></tr><tr><td>104.95</td><td>-6.7</td><td>5.00</td><td>33.68</td><td>70.12</td></tr><tr><td>104.50</td><td>-6.0</td><td>5.00</td><td>30.11</td><td>81.77</td></tr><tr><td>104.45</td><td>-5.9</td><td>5.00</td><td>29.71</td><td>83.07</td></tr><tr><td>104.45</td><td>-5.9</td><td>5.00</td><td>29.71</td><td>83.07</td></tr><tr><td>104.40</td><td>-5.9</td><td>5.00</td><td>29.32</td><td>84.36</td></tr><tr><td>103.49</td><td>-4.5</td><td>5.00</td><td>22.45</td><td>107.67</td></tr><tr><td>103.44</td><td>-4.4</td><td>5.00</td><td>22.08</td><td>108.97</td></tr><tr><td>103.44</td><td>-4.4</td><td>5.00</td><td>22.08</td><td>108.97</td></tr><tr><td>103.39</td><td>-4.3</td><td>5.00</td><td>21.72</td><td>110.26</td></tr><tr><td>102.74</td><td>-3.4</td><td>5.00</td><td>17.10</td><td>127.09</td></tr><tr><td>102.69</td><td>-3.4</td><td>5.00</td><td>16.76</td><td>128.39</td></tr><tr><td>102.69</td><td>-3.4</td><td>50.00</td><td>167.63</td><td>230.95</td></tr><tr><td>102.64</td><td>-3.3</td><td>50.00</td><td>164.27</td><td>234.40</td></tr><tr><td>102.49</td><td>-3.1</td><td>50.00</td><td>154.35</td><td>244.73</td></tr><tr><td>102.44</td><td>-3.0</td><td>50.00</td><td>151.10</td><td>248.18</td></tr><tr><td>102.44</td><td>-3.0</td><td>50.00</td><td>151.10</td><td>248.18</td></tr><tr><td>102.39</td><td>-3.0</td><td>50.00</td><td>147.87</td><td>251.62</td></tr><tr><td>102.14</td><td>-2.6</td><td>50.00</td><td>132.13</td><td>268.85</td></tr><tr><td>102.09</td><td>-2.6</td><td>50.00</td><td>129.06</td><td>272.29</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	102.09	0.0	0.0	0.0	101.44	0.0	0.0	0.0	100.45	0.0	0.0	0.0	99.45	0.0	0.0	0.0	99.00	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	107.45	-10.8	-	-	-	107.40	-10.7	-	-	-	106.75	-9.7	-	-	-	106.71	-9.6	-	-	-	106.71	-9.6	-	-	-	106.66	-9.5	-	-	-	106.45	-9.2	-	-	-	106.40	-9.1	-	-	-	106.40	-9.1	-	-	-	106.35	-9.0	-	-	-	106.05	-8.5	-	-	-	106.00	-8.4	0.00	0.00	0.00	106.00	-8.4	0.00	0.00	0.00	105.95	-8.4	0.00	0.00	4.75	105.55	-7.7	5.55	42.80	42.79	105.50	-7.6	5.55	42.35	47.55	105.50	-7.6	6.24	47.55	47.55	105.45	-7.5	6.24	47.03	52.42	105.45	-7.5	6.95	52.43	52.42	105.40	-7.5	6.95	51.85	57.30	105.14	-7.0	10.00	70.43	81.67	105.09	-7.0	10.00	69.61	86.54	105.09	-7.0	5.00	34.81	64.18	105.05	-6.9	5.00	34.44	66.50	105.05	-6.9	5.00	34.44	66.50	105.00	-6.8	5.00	34.08	68.82	105.00	-6.8	5.00	34.08	68.82	104.95	-6.7	5.00	33.68	70.12	104.50	-6.0	5.00	30.11	81.77	104.45	-5.9	5.00	29.71	83.07	104.45	-5.9	5.00	29.71	83.07	104.40	-5.9	5.00	29.32	84.36	103.49	-4.5	5.00	22.45	107.67	103.44	-4.4	5.00	22.08	108.97	103.44	-4.4	5.00	22.08	108.97	103.39	-4.3	5.00	21.72	110.26	102.74	-3.4	5.00	17.10	127.09	102.69	-3.4	5.00	16.76	128.39	102.69	-3.4	50.00	167.63	230.95	102.64	-3.3	50.00	164.27	234.40	102.49	-3.1	50.00	154.35	244.73	102.44	-3.0	50.00	151.10	248.18	102.44	-3.0	50.00	151.10	248.18	102.39	-3.0	50.00	147.87	251.62	102.14	-2.6	50.00	132.13	268.85	102.09	-2.6	50.00	129.06	272.29
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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>102.09</td><td>-2.6</td><td>50.00</td><td>129.06</td><td>272.29</td></tr><tr><td>102.04</td><td>-2.5</td><td>50.00</td><td>126.03</td><td>275.74</td></tr><tr><td>101.49</td><td>-1.9</td><td>50.00</td><td>94.38</td><td>313.63</td></tr><tr><td>101.44</td><td>-1.8</td><td>50.00</td><td>91.66</td><td>317.08</td></tr><tr><td>101.44</td><td>-1.8</td><td>50.00</td><td>91.66</td><td>317.08</td></tr><tr><td>101.39</td><td>-1.8</td><td>50.00</td><td>88.96</td><td>320.52</td></tr><tr><td>100.50</td><td>-0.9</td><td>50.00</td><td>43.91</td><td>382.54</td></tr><tr><td>100.45</td><td>-0.8</td><td>50.00</td><td>41.57</td><td>385.98</td></tr><tr><td>100.45</td><td>-0.8</td><td>50.00</td><td>41.57</td><td>385.98</td></tr><tr><td>100.40</td><td>-0.8</td><td>50.00</td><td>39.23</td><td>389.43</td></tr><tr><td>99.50</td><td>0.0</td><td>50.00</td><td>-1.40</td><td>451.44</td></tr><tr><td>99.45</td><td>0.1</td><td>50.00</td><td>-3.61</td><td>454.89</td></tr><tr><td>99.45</td><td>0.1</td><td>50.00</td><td>-3.61</td><td>454.89</td></tr><tr><td>99.40</td><td>0.1</td><td>50.00</td><td>-5.83</td><td>458.33</td></tr><tr><td>99.05</td><td>0.4</td><td>50.00</td><td>-21.30</td><td>482.45</td></tr><tr><td>99.00</td><td>0.5</td><td>50.00</td><td>-23.51</td><td>485.89</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05076503 Theoretischer Fußpunkt = 98.999 m</p> <p>Einbindetiefe tg = 7.00 m Profillänge = 8.45 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k + Eav,k &gt;= Bv,k G,k = 159.90 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 53.23 kN/m (Eah,k = 304.57 kN/m) Bv,k = 126.83 Summe V,k = 86.29 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 99.88 bis 96.36 m) ==&gt; 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>105.09</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>99.00</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 99.00 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 202.95 / 1.40 = 144.96 kN/m R,d = Rb,d + Rs1,d = 1010.01 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 191.88 - 0.00 + 61.21 + 0.00 = 253.09 kN/m ==&gt; µ = V,d / R,d = 253.09 / 1010.01 = 0.25</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.09	-2.6	50.00	129.06	272.29	102.04	-2.5	50.00	126.03	275.74	101.49	-1.9	50.00	94.38	313.63	101.44	-1.8	50.00	91.66	317.08	101.44	-1.8	50.00	91.66	317.08	101.39	-1.8	50.00	88.96	320.52	100.50	-0.9	50.00	43.91	382.54	100.45	-0.8	50.00	41.57	385.98	100.45	-0.8	50.00	41.57	385.98	100.40	-0.8	50.00	39.23	389.43	99.50	0.0	50.00	-1.40	451.44	99.45	0.1	50.00	-3.61	454.89	99.45	0.1	50.00	-3.61	454.89	99.40	0.1	50.00	-5.83	458.33	99.05	0.4	50.00	-21.30	482.45	99.00	0.5	50.00	-23.51	485.89	von	bis	qs,k [kN/m²]	Bezeichnung	106.00	105.09	0.00	S1: Auffüllungen	105.09	102.69	0.00	S2: Auelehm	102.69	99.00	55.00	s3: Flusskies, -sand
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Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/10																																																																																																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1110 für Standsicherheit Dipl.-Ing. A. Forner																																																																																																
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>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 2 Datei: 02_BS 2_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 (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>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.10 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 = 215.039 / 217.728 = 0.988 Bettungslager Bh,d = 215.039 kN/m Erdwiderstand Eph,d = 217.728 kN/m</div>		
Schnitt:	Anlage K1 Schnitt 2L	Seite Anlage K1/11
Kapitel:	3 LF 2.1 (BS-T, ohne Lasten)	Archiv Nr. 1111
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<sub>d'</sub> = 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<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-114.22</td><td>-98.98</td><td>-98.98</td><td>-7.95</td><td>6.900E+4</td><td>2.100E+7</td><td>-126.20</td></tr></table> <div>Zusätzlich für Steifen</div> <div>Steife I</div> <div>Vertikallast [kN/m²/m]: 0.00</div> <div>max M<sub>d</sub> [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<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-9.5</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.8</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-10.0</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-10.2</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-10.3</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-10.5</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.7</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-10.8</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-11.0</td><td>0.0</td><td>-114.22</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-11.2</td><td>0.0</td><td>-114.22</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\00_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>-0.0083</td></tr></table> <div>Bodenkennwerte</div> <table><tr><td>Schicht</td><td>UK</td><td>γ<sub>m,k</sub></td><td>γ<sub>m',k</sub></td><td>φ<sub>i,k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/φ<sub>i</sub></td><td>d(a)/φ<sub>i</sub></td><td>q<sub>c</sub></td><td>c<sub>u,k</sub></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<sub>i</sub> = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &gt; 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<sub>agh</sub></td><td>k<sub>ach</sub></td><td>φ<sub>i,k</sub></td><td>delta</td><td>theta</td><td>k<sub>agh</sub>(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]<sub>k</sub>)</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>104.150</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr><tr><td>104.150</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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	106.95	0.00	1.00	-114.22	-98.98	-98.98	-7.95	6.900E+4	2.100E+7	-126.20	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-1.00	106.95	-9.5	0.0	-114.22	0.00	0.00	-0.90	106.95	-9.7	0.0	-114.22	0.00	0.00	-0.90	106.95	-9.7	0.0	-114.22	0.00	0.00	-0.80	106.95	-9.8	0.0	-114.22	0.00	0.00	-0.70	106.95	-10.0	0.0	-114.22	0.00	0.00	-0.60	106.95	-10.2	0.0	-114.22	0.00	0.00	-0.50	106.95	-10.3	0.0	-114.22	0.00	0.00	-0.40	106.95	-10.5	0.0	-114.22	0.00	0.00	-0.30	106.95	-10.7	0.0	-114.22	0.00	0.00	-0.20	106.95	-10.8	0.0	-114.22	0.00	0.00	-0.10	106.95	-11.0	0.0	-114.22	0.00	0.00	0.00	106.95	-11.2	0.0	-114.22	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0083	Schicht	UK	γ <sub>m,k</sub>	γ <sub>m',k</sub>	φ <sub>i,k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/φ <sub>i</sub>	d(a)/φ <sub>i</sub>	q <sub>c</sub>	c <sub>u,k</sub>	[-]	[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 <sub>agh</sub>	k <sub>ach</sub>	φ <sub>i,k</sub>	delta	theta	k <sub>agh</sub> (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	104.150	24.695	24.695	5.00	5.00	104.150	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 <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>																																																																																																																																																																																																																																																																																																																					
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																															
<table><tr><td>102.690</td><td>102.550</td><td>24.695</td><td>24.695</td><td>5.00</td><td>5.00</td></tr><tr><td>102.550</td><td>102.450</td><td>31.675</td><td>32.085</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>101.850</td><td>32.085</td><td>34.547</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>34.547</td><td>36.188</td><td>5.00</td><td>5.00</td></tr><tr><td>101.450</td><td>100.449</td><td>36.188</td><td>40.292</td><td>5.00</td><td>5.00</td></tr><tr><td>100.449</td><td>99.449</td><td>40.292</td><td>44.395</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>99.349</td><td>44.395</td><td>44.805</td><td>5.00</td><td>5.00</td></tr><tr><td>99.349</td><td>80.000</td><td>44.805</td><td>124.166</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.81</td></tr><tr><td>99.45</td><td>99.35</td><td>-131.81</td><td>-136.06</td></tr><tr><td>99.35</td><td>80.00</td><td>-136.06</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>-17.1</td><td>-17.0</td><td>-4.3</td><td>-114.2</td></tr><tr><td>106.95</td><td>-17.1</td><td>97.2</td><td>-4.3</td><td></td></tr><tr><td>106.71</td><td>-25.4</td><td>88.9</td><td>18.4</td><td></td></tr><tr><td>106.40</td><td>-35.9</td><td>78.4</td><td>44.0</td><td></td></tr><tr><td>105.50</td><td>-66.6</td><td>47.8</td><td>100.8</td><td></td></tr><tr><td>105.45</td><td>-68.3</td><td>46.0</td><td>103.2</td><td></td></tr><tr><td>105.09</td><td>-80.6</td><td>32.8</td><td>117.4</td><td></td></tr><tr><td>105.00</td><td>-83.4</td><td>29.2</td><td>120.2</td><td></td></tr><tr><td>104.40</td><td>-101.1</td><td>8.6</td><td>131.5</td><td></td></tr><tr><td>104.15</td><td>-108.4</td><td>0.0</td><td>132.6</td><td></td></tr><tr><td>103.40</td><td>-130.4</td><td>-25.8</td><td>122.9</td><td></td></tr><tr><td>102.69</td><td>-151.3</td><td>-50.2</td><td>95.9</td><td></td></tr><tr><td>102.55</td><td>-155.9</td><td>-55.1</td><td>88.6</td><td></td></tr><tr><td>102.45</td><td>-158.7</td><td>-59.1</td><td>82.8</td><td></td></tr><tr><td>101.85</td><td>-164.7</td><td>-67.9</td><td>43.4</td><td></td></tr><tr><td>101.45</td><td>-162.5</td><td>-59.0</td><td>17.6</td><td></td></tr><tr><td>100.45</td><td>-139.8</td><td>3.2</td><td>-12.0</td><td></td></tr><tr><td>99.45</td><td>-139.3</td><td>4.9</td><td>-0.3</td><td></td></tr><tr><td>99.35</td><td>-141.2</td><td>0.0</td><td>0.0</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></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>-14.9</td><td>-14.8</td><td>-3.7</td><td>-99.0</td></tr><tr><td>106.95</td><td>-14.9</td><td>84.2</td><td>-3.7</td><td></td></tr><tr><td>106.71</td><td>-22.1</td><td>77.0</td><td>15.9</td><td></td></tr><tr><td>106.40</td><td>-31.2</td><td>67.9</td><td>38.1</td><td></td></tr><tr><td>105.50</td><td>-57.9</td><td>41.2</td><td>87.2</td><td></td></tr><tr><td>105.45</td><td>-59.4</td><td>39.7</td><td>89.2</td><td></td></tr><tr><td>105.09</td><td>-70.1</td><td>28.2</td><td>101.5</td><td></td></tr><tr><td>105.00</td><td>-72.5</td><td>25.1</td><td>103.9</td><td></td></tr></table>								102.690	102.550	24.695	24.695	5.00	5.00	102.550	102.450	31.675	32.085	5.00	5.00	102.450	101.850	32.085	34.547	5.00	5.00	101.850	101.450	34.547	36.188	5.00	5.00	101.450	100.449	36.188	40.292	5.00	5.00	100.449	99.449	40.292	44.395	5.00	5.00	99.449	99.349	44.395	44.805	5.00	5.00	99.349	80.000	44.805	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	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	-89.29	100.45	99.45	-89.29	-131.81	99.45	99.35	-131.81	-136.06	99.35	80.00	-136.06	-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	-17.1	-17.0	-4.3	-114.2	106.95	-17.1	97.2	-4.3		106.71	-25.4	88.9	18.4		106.40	-35.9	78.4	44.0		105.50	-66.6	47.8	100.8		105.45	-68.3	46.0	103.2		105.09	-80.6	32.8	117.4		105.00	-83.4	29.2	120.2		104.40	-101.1	8.6	131.5		104.15	-108.4	0.0	132.6		103.40	-130.4	-25.8	122.9		102.69	-151.3	-50.2	95.9		102.55	-155.9	-55.1	88.6		102.45	-158.7	-59.1	82.8		101.85	-164.7	-67.9	43.4		101.45	-162.5	-59.0	17.6		100.45	-139.8	3.2	-12.0		99.45	-139.3	4.9	-0.3		99.35	-141.2	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		106.95	-14.9	-14.8	-3.7	-99.0	106.95	-14.9	84.2	-3.7		106.71	-22.1	77.0	15.9		106.40	-31.2	67.9	38.1		105.50	-57.9	41.2	87.2		105.45	-59.4	39.7	89.2		105.09	-70.1	28.2	101.5		105.00	-72.5	25.1	103.9	
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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><div>104.40</div><div>-87.9</div><div>7.3</div><div>113.6</div></div><div><div>104.15</div><div>-94.3</div><div>-0.1</div><div>114.5</div></div><div><div>103.40</div><div>-113.4</div><div>-22.4</div><div>106.0</div></div><div><div>102.69</div><div>-131.6</div><div>-43.5</div><div>82.7</div></div><div><div>102.55</div><div>-135.6</div><div>-47.6</div><div>76.3</div></div><div><div>102.45</div><div>-138.0</div><div>-51.1</div><div>71.3</div></div><div><div>101.85</div><div>-143.2</div><div>-58.7</div><div>37.2</div></div><div><div>101.45</div><div>-141.3</div><div>-51.0</div><div>14.9</div></div><div><div>100.45</div><div>-121.6</div><div>2.9</div><div>-10.6</div></div><div><div>99.45</div><div>-121.2</div><div>4.3</div><div>-0.2</div></div><div><div>99.35</div><div>-122.8</div><div>0.0</div><div>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>107.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.95</div><div>-14.9</div><div>-14.8</div><div>-3.7</div><div>-99.0</div></div><div><div>106.95</div><div>-14.9</div><div>84.2</div><div>-3.7</div><div></div></div><div><div>106.71</div><div>-22.1</div><div>77.0</div><div>15.9</div><div></div></div><div><div>106.40</div><div>-31.2</div><div>67.9</div><div>38.1</div><div></div></div><div><div>105.50</div><div>-57.9</div><div>41.2</div><div>87.2</div><div></div></div><div><div>105.45</div><div>-59.4</div><div>39.7</div><div>89.2</div><div></div></div><div><div>105.09</div><div>-70.1</div><div>28.2</div><div>101.5</div><div></div></div><div><div>105.00</div><div>-72.5</div><div>25.1</div><div>103.9</div><div></div></div><div><div>104.40</div><div>-87.9</div><div>7.3</div><div>113.6</div><div></div></div><div><div>104.15</div><div>-94.3</div><div>-0.1</div><div>114.5</div><div></div></div><div><div>103.40</div><div>-113.4</div><div>-22.4</div><div>106.0</div><div></div></div><div><div>102.69</div><div>-131.6</div><div>-43.5</div><div>82.7</div><div></div></div><div><div>102.55</div><div>-135.6</div><div>-47.6</div><div>76.3</div><div></div></div><div><div>102.45</div><div>-138.0</div><div>-51.1</div><div>71.3</div><div></div></div><div><div>101.85</div><div>-143.2</div><div>-58.7</div><div>37.2</div><div></div></div><div><div>101.45</div><div>-141.3</div><div>-51.0</div><div>14.9</div><div></div></div><div><div>100.45</div><div>-121.6</div><div>2.9</div><div>-10.6</div><div></div></div><div><div>99.45</div><div>-121.2</div><div>4.3</div><div>-0.2</div><div></div></div><div><div>99.35</div><div>-122.8</div><div>0.0</div><div>0.0</div><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>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>106.71</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.40</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>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.09</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.69</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>101.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.35</div><div>0.0</div><div>0.0</div><div>0.0</div><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>107.45</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-10.1</div><div>-</div><div>-</div><div>-</div></div><div><div>107.00</div><div>-9.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-9.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-9.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.90</div><div>-9.7</div><div>-</div><div>-</div><div>-</div></div><div><div>106.76</div><div>-9.5</div><div>-</div><div>-</div><div>-</div></div><div><div>106.71</div><div>-9.5</div><div>-</div><div>-</div><div>-</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage K1 Schnitt 2L</td><td colspan="2">Seite Anlage K1/14</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">3 LF 2.1 (BS-T, ohne Lasten)</td><td colspan="2">Archiv Nr.: 1114</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/14		Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1114		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/14																			
Kapitel:		3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1114																			
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>106.71</div> <div>-9.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.66</div> <div>-9.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.45</div> <div>-9.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.40</div> <div>-9.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.40</div> <div>-9.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>106.35</div> <div>-9.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.55</div> <div>-8.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-8.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-8.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.45</div> <div>-8.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.45</div> <div>-8.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.40</div> <div>-8.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.14</div> <div>-8.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.09</div> <div>-8.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.09</div> <div>-8.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.05</div> <div>-8.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.05</div> <div>-8.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-8.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-8.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.95</div> <div>-7.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.45</div> <div>-7.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.40</div> <div>-7.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.40</div> <div>-7.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.35</div> <div>-7.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.20</div> <div>-7.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.15</div> <div>-7.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.15</div> <div>-7.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.10</div> <div>-7.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.45</div> <div>-6.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-6.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-6.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.35</div> <div>-6.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.74</div> <div>-5.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.69</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.69</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.64</div> <div>-5.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-5.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-4.9</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-4.9</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.50</div> <div>-4.9</div> <div>0.00</div> <div>0.00</div> <div>3.45</div> </div> <div> <div>102.50</div> <div>-4.9</div> <div>0.71</div> <div>3.45</div> <div>3.45</div> </div> <div> <div>102.45</div> <div>-4.8</div> <div>0.71</div> <div>3.40</div> <div>6.91</div> </div> <div> <div>102.45</div> <div>-4.8</div> <div>1.44</div> <div>6.91</div> <div>6.91</div> </div> <div> <div>102.40</div> <div>-4.7</div> <div>1.44</div> <div>6.80</div> <div>10.36</div> </div> <div> <div>101.90</div> <div>-4.0</div> <div>11.32</div> <div>44.91</div> <div>44.91</div> </div> <div> <div>101.85</div> <div>-3.9</div> <div>11.32</div> <div>44.05</div> <div>48.37</div> </div> <div> <div>101.85</div> <div>-3.9</div> <div>12.43</div> <div>48.37</div> <div>48.37</div> </div> <div> <div>101.80</div> <div>-3.8</div> <div>12.43</div> <div>47.42</div> <div>51.82</div> </div> <div> <div>101.50</div> <div>-3.4</div> <div>21.63</div> <div>72.55</div> <div>72.55</div> </div> <div> <div>101.45</div> <div>-3.3</div> <div>21.63</div> <div>70.89</div> <div>76.00</div> </div> <div> <div>101.45</div> <div>-3.3</div> <div>23.19</div> <div>76.01</div> <div>76.00</div> </div> <div> <div>101.40</div> <div>-3.2</div> <div>23.19</div> <div>74.22</div> <div>79.46</div> </div> <div> <div>100.50</div> <div>-1.8</div> <div>50.00</div> <div>90.75</div> <div>141.64</div> </div> <div> <div>100.45</div> <div>-1.7</div> <div>50.00</div> <div>86.91</div> <div>145.10</div> </div> <div> <div>100.45</div> <div>-1.7</div> <div>50.00</div> <div>86.91</div> <div>145.10</div> </div> <div> <div>100.40</div> <div>-1.7</div> 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Schnitt:	Anlage K1    Schnitt 2L	Seite Anlage K1/15
Kapitel:	3                    LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.: 1115
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: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 153.28 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 44.39 \text{ kN/m}</math> (<math>E_{ah,k} = 255.52 \text{ kN/m}</math>) <math>B_{v,k} = 73.95</math> Summe <math>V_{,k} = 123.71 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.23 bis 96.71 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 99.35 55.00 s3: Flussskies, -sand Mantelfläche bis 99.35 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 176.00 / 1.40 = 125.71 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 990.76 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 183.93 - 0.00 + 51.05 + 0.00 = 234.98 \text{ kN/m}</math> <math>\implies \mu = V_{,d} / R_{,d} = 234.98 / 990.76 = 0.24</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/16
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1116
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>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 2 Datei: 03_BS 2_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 <math>\mu_e = \tan(\beta) / \tan(\phi) * 1.25</math> (BS-P)</p> <p>Erddruckumlagerung: EAB 2012 Bild EB 70-1.b</p> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.35 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 <math>\mu_e = 249.820 / 253.072 = 0.987</math> Bettungslager <math>B_{h,d} = 249.820</math> kN/m Erdwiderstand <math>E_{ph,d} = 253.072</math> 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)																																						
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Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/17																																							
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 1117																																							
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>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>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>106.95</td><td>0.00</td><td>1.00</td><td>-131.63</td><td>-114.11</td><td>-114.11</td><td>-8.14</td><td>6.900E+4</td><td>2.100E+7</td><td>-145.49</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>-1.00</td><td>106.95</td><td>-9.5</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>106.95</td><td>-9.7</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>106.95</td><td>-9.9</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>106.95</td><td>-10.1</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>106.95</td><td>-10.3</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>106.95</td><td>-10.5</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>106.95</td><td>-10.7</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>106.95</td><td>-10.9</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>106.95</td><td>-11.0</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>106.95</td><td>-11.2</td><td>0.0</td><td>-131.63</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>106.95</td><td>-11.4</td><td>0.1</td><td>-131.63</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\00_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>-0.0083</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(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 &gt; 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>106.950</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>104.150</td><td>28.488</td><td>28.488</td><td>5.00</td><td>5.00</td></tr><tr><td>104.150</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	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	-131.63	-114.11	-114.11	-8.14	6.900E+4	2.100E+7	-145.49	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	-9.5	0.0	-131.63	0.00	0.00	-0.90	106.95	-9.7	0.0	-131.63	0.00	0.00	-0.90	106.95	-9.7	0.0	-131.63	0.00	0.00	-0.80	106.95	-9.9	0.0	-131.63	0.00	0.00	-0.70	106.95	-10.1	0.0	-131.63	0.00	0.00	-0.60	106.95	-10.3	0.0	-131.63	0.00	0.00	-0.50	106.95	-10.5	0.0	-131.63	0.00	0.00	-0.40	106.95	-10.7	0.0	-131.63	0.00	0.00	-0.30	106.95	-10.9	0.0	-131.63	0.00	0.00	-0.20	106.95	-11.0	0.0	-131.63	0.00	0.00	-0.10	106.95	-11.2	0.0	-131.63	0.00	0.00	0.00	106.95	-11.4	0.1	-131.63	0.00	0.00	[-]	[m]	[m]	1	106.95	-0.0083	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	106.950	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	104.150	28.488	28.488	5.00	5.00	104.150	103.400	28.488	28.488	5.00	5.00	103.400	102.690	28.488	28.488	5.00	5.00	Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/18	
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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[-]	[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	106.950	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	104.150	28.488	28.488	5.00	5.00																																																																																																																																																																																																																																																																																																																												
104.150	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>38.114</td><td>5.00</td><td>5.00</td></tr><tr><td>101.850</td><td>101.450</td><td>38.114</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>47.961</td><td>5.00</td><td>5.00</td></tr><tr><td>99.449</td><td>99.099</td><td>47.961</td><td>49.397</td><td>5.00</td><td>5.00</td></tr><tr><td>99.099</td><td>80.000</td><td>49.397</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>-89.29</td></tr><tr><td>100.45</td><td>99.45</td><td>-89.29</td><td>-131.80</td></tr><tr><td>99.45</td><td>99.10</td><td>-131.80</td><td>-146.69</td></tr><tr><td>99.10</td><td>80.00</td><td>-146.69</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>-131.6</td></tr><tr><td>106.95</td><td>-18.0</td><td>112.0</td><td>-4.9</td><td></td></tr><tr><td>106.71</td><td>-26.8</td><td>102.4</td><td>21.2</td><td></td></tr><tr><td>106.40</td><td>-37.9</td><td>90.4</td><td>50.7</td><td></td></tr><tr><td>105.50</td><td>-70.4</td><td>55.0</td><td>116.1</td><td></td></tr><tr><td>105.45</td><td>-72.2</td><td>53.0</td><td>118.8</td><td></td></tr><tr><td>105.09</td><td>-85.1</td><td>37.8</td><td>135.2</td><td></td></tr><tr><td>105.00</td><td>-88.1</td><td>33.8</td><td>138.4</td><td></td></tr><tr><td>104.40</td><td>-106.4</td><td>10.6</td><td>151.8</td><td></td></tr><tr><td>104.15</td><td>-114.0</td><td>0.9</td><td>153.2</td><td></td></tr><tr><td>103.40</td><td>-136.9</td><td>-28.2</td><td>142.9</td><td></td></tr><tr><td>102.69</td><td>-158.6</td><td>-55.7</td><td>113.1</td><td></td></tr><tr><td>102.55</td><td>-163.5</td><td>-61.2</td><td>105.0</td><td></td></tr><tr><td>102.45</td><td>-166.3</td><td>-65.6</td><td>98.6</td><td></td></tr><tr><td>101.85</td><td>-172.3</td><td>-76.9</td><td>54.5</td><td></td></tr><tr><td>101.45</td><td>-170.1</td><td>-69.6</td><td>24.8</td><td></td></tr><tr><td>100.45</td><td>-144.6</td><td>-4.4</td><td>-16.3</td><td></td></tr><tr><td>99.45</td><td>-135.4</td><td>15.3</td><td>-3.0</td><td></td></tr><tr><td>99.10</td><td>-140.5</td><td>0.0</td><td>0.0</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></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>-15.7</td><td>-17.1</td><td>-4.3</td><td>-114.1</td></tr><tr><td>106.95</td><td>-15.7</td><td>97.0</td><td>-4.3</td><td></td></tr><tr><td>106.71</td><td>-23.3</td><td>88.7</td><td>18.3</td><td></td></tr><tr><td>106.40</td><td>-32.9</td><td>78.2</td><td>43.9</td><td></td></tr><tr><td>105.50</td><td>-61.2</td><td>47.4</td><td>100.5</td><td></td></tr><tr><td>105.45</td><td>-62.7</td><td>45.7</td><td>102.8</td><td></td></tr><tr><td>105.09</td><td>-74.0</td><td>32.6</td><td>116.9</td><td></td></tr><tr><td>105.00</td><td>-76.6</td><td>29.1</td><td>119.7</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	38.114	5.00	5.00	101.850	101.450	38.114	39.755	5.00	5.00	101.450	100.449	39.755	43.858	5.00	5.00	100.449	99.449	43.858	47.961	5.00	5.00	99.449	99.099	47.961	49.397	5.00	5.00	99.099	80.000	49.397	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	-89.29	100.45	99.45	-89.29	-131.80	99.45	99.10	-131.80	-146.69	99.10	80.00	-146.69	-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	-131.6	106.95	-18.0	112.0	-4.9		106.71	-26.8	102.4	21.2		106.40	-37.9	90.4	50.7		105.50	-70.4	55.0	116.1		105.45	-72.2	53.0	118.8		105.09	-85.1	37.8	135.2		105.00	-88.1	33.8	138.4		104.40	-106.4	10.6	151.8		104.15	-114.0	0.9	153.2		103.40	-136.9	-28.2	142.9		102.69	-158.6	-55.7	113.1		102.55	-163.5	-61.2	105.0		102.45	-166.3	-65.6	98.6		101.85	-172.3	-76.9	54.5		101.45	-170.1	-69.6	24.8		100.45	-144.6	-4.4	-16.3		99.45	-135.4	15.3	-3.0		99.10	-140.5	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		106.95	-15.7	-17.1	-4.3	-114.1	106.95	-15.7	97.0	-4.3		106.71	-23.3	88.7	18.3		106.40	-32.9	78.2	43.9		105.50	-61.2	47.4	100.5		105.45	-62.7	45.7	102.8		105.09	-74.0	32.6	116.9		105.00	-76.6	29.1	119.7	
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104.15	-114.0	0.9	153.2																																																																																																																																																																																																																																																																																																		
103.40	-136.9	-28.2	142.9																																																																																																																																																																																																																																																																																																		
102.69	-158.6	-55.7	113.1																																																																																																																																																																																																																																																																																																		
102.55	-163.5	-61.2	105.0																																																																																																																																																																																																																																																																																																		
102.45	-166.3	-65.6	98.6																																																																																																																																																																																																																																																																																																		
101.85	-172.3	-76.9	54.5																																																																																																																																																																																																																																																																																																		
101.45	-170.1	-69.6	24.8																																																																																																																																																																																																																																																																																																		
100.45	-144.6	-4.4	-16.3																																																																																																																																																																																																																																																																																																		
99.45	-135.4	15.3	-3.0																																																																																																																																																																																																																																																																																																		
99.10	-140.5	0.0	0.0																																																																																																																																																																																																																																																																																																		
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[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																	
107.45	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																		
106.95	-15.7	-17.1	-4.3	-114.1																																																																																																																																																																																																																																																																																																	
106.95	-15.7	97.0	-4.3																																																																																																																																																																																																																																																																																																		
106.71	-23.3	88.7	18.3																																																																																																																																																																																																																																																																																																		
106.40	-32.9	78.2	43.9																																																																																																																																																																																																																																																																																																		
105.50	-61.2	47.4	100.5																																																																																																																																																																																																																																																																																																		
105.45	-62.7	45.7	102.8																																																																																																																																																																																																																																																																																																		
105.09	-74.0	32.6	116.9																																																																																																																																																																																																																																																																																																		
105.00	-76.6	29.1	119.7																																																																																																																																																																																																																																																																																																		
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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><div><div><div>104.40</div><div>-92.5</div><div>9.0</div><div>131.1</div></div><div><div>104.15</div><div>-99.1</div><div>0.6</div><div>132.3</div></div><div><div>103.40</div><div>-119.1</div><div>-24.5</div><div>123.4</div></div><div><div>102.69</div><div>-137.9</div><div>-48.3</div><div>97.6</div></div><div><div>102.55</div><div>-142.2</div><div>-52.9</div><div>90.5</div></div><div><div>102.45</div><div>-144.7</div><div>-56.8</div><div>85.0</div></div><div><div>101.85</div><div>-149.9</div><div>-66.5</div><div>46.8</div></div><div><div>101.45</div><div>-147.9</div><div>-60.2</div><div>21.2</div></div><div><div>100.45</div><div>-125.8</div><div>-3.6</div><div>-14.3</div></div><div><div>99.45</div><div>-117.7</div><div>13.3</div><div>-2.6</div></div><div><div>99.10</div><div>-122.2</div><div>0.0</div><div>0.0</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>106.95</div><div>-15.7</div><div>-17.1</div><div>-4.3</div><div>-114.1</div></div><div><div>106.95</div><div>-15.7</div><div>97.0</div><div>-4.3</div><div></div></div><div><div>106.71</div><div>-23.3</div><div>88.7</div><div>18.3</div><div></div></div><div><div>106.40</div><div>-32.9</div><div>78.2</div><div>43.9</div><div></div></div><div><div>105.50</div><div>-61.2</div><div>47.4</div><div>100.5</div><div></div></div><div><div>105.45</div><div>-62.7</div><div>45.7</div><div>102.8</div><div></div></div><div><div>105.09</div><div>-74.0</div><div>32.6</div><div>116.9</div><div></div></div><div><div>105.00</div><div>-76.6</div><div>29.1</div><div>119.7</div><div></div></div><div><div>104.40</div><div>-92.5</div><div>9.0</div><div>131.1</div><div></div></div><div><div>104.15</div><div>-99.1</div><div>0.6</div><div>132.3</div><div></div></div><div><div>103.40</div><div>-119.1</div><div>-24.5</div><div>123.4</div><div></div></div><div><div>102.69</div><div>-137.9</div><div>-48.3</div><div>97.6</div><div></div></div><div><div>102.55</div><div>-142.2</div><div>-52.9</div><div>90.5</div><div></div></div><div><div>102.45</div><div>-144.7</div><div>-56.8</div><div>85.0</div><div></div></div><div><div>101.85</div><div>-149.9</div><div>-66.5</div><div>46.8</div><div></div></div><div><div>101.45</div><div>-147.9</div><div>-60.2</div><div>21.2</div><div></div></div><div><div>100.45</div><div>-125.8</div><div>-3.6</div><div>-14.3</div><div></div></div><div><div>99.45</div><div>-117.7</div><div>13.3</div><div>-2.6</div><div></div></div><div><div>99.10</div><div>-122.2</div><div>0.0</div><div>0.0</div><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>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>106.71</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>106.40</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>105.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.09</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>104.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>103.40</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.69</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>101.85</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>101.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.45</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.10</div><div>0.0</div><div>0.0</div><div>0.0</div><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>107.45</div><div>-10.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.40</div><div>-10.3</div><div>-</div><div>-</div><div>-</div></div><div><div>107.00</div><div>-10.0</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-9.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.95</div><div>-9.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.90</div><div>-9.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.75</div><div>-9.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.71</div><div>-9.8</div><div>-</div><div>-</div><div>-</div></div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage K1 Schnitt 2L</td><td colspan="2">Seite Anlage K1/20</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.: 2004-0025</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/20		Kapitel:		4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 2004-0025		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/20																			
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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																																																																																			
<table><tr><td>106.71</td><td>-9.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.66</td><td>-9.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.45</td><td>-9.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.40</td><td>-9.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.40</td><td>-9.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>106.35</td><td>-9.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.55</td><td>-8.9</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.50</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.50</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.45</td><td>-8.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.40</td><td>-8.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.14</td><td>-8.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.09</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.09</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.05</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.05</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.00</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>105.00</td><td>-8.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.95</td><td>-8.3</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.45</td><td>-7.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.40</td><td>-7.8</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.35</td><td>-7.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.20</td><td>-7.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.15</td><td>-7.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.15</td><td>-7.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>104.10</td><td>-7.4</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.45</td><td>-6.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.40</td><td>-6.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.40</td><td>-6.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>103.35</td><td>-6.5</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.74</td><td>-5.7</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.69</td><td>-5.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.69</td><td>-5.6</td><td>-</td><td>-</td><td>-</td><td></td><td></td></tr><tr><td>102.64</td><td>-5.5</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>-5.4</td><td>0.00</td><td>0.00</td><td>0.00</td><td></td><td></td></tr><tr><td>102.55</td><td>-5.4</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>0.65</td><td>3.45</td><td>3.45</td><td></td><td></td></tr><tr><td>102.45</td><td>-5.2</td><td>0.65</td><td>3.41</td><td>6.91</td><td></td><td></td></tr><tr><td>102.45</td><td>-5.2</td><td>1.32</td><td>6.91</td><td>6.91</td><td></td><td></td></tr><tr><td>102.40</td><td>-5.2</td><td>1.32</td><td>6.81</td><td>10.36</td><td></td><td></td></tr><tr><td>101.90</td><td>-4.4</td><td>10.20</td><td>44.91</td><td>44.91</td><td></td><td></td></tr><tr><td>101.85</td><td>-4.3</td><td>10.20</td><td>44.13</td><td>48.36</td><td></td><td></td></tr><tr><td>101.85</td><td>-4.3</td><td>11.18</td><td>48.37</td><td>48.36</td><td></td><td></td></tr><tr><td>101.80</td><td>-4.2</td><td>11.18</td><td>47.50</td><td>51.82</td><td></td><td></td></tr><tr><td>101.50</td><td>-3.8</td><td>19.18</td><td>72.55</td><td>72.55</td><td></td><td></td></tr><tr><td>101.45</td><td>-3.7</td><td>19.18</td><td>71.05</td><td>76.00</td><td></td><td></td></tr><tr><td>101.45</td><td>-3.7</td><td>20.52</td><td>76.00</td><td>76.00</td><td></td><td></td></tr><tr><td>101.40</td><td>-3.6</td><td>20.52</td><td>74.40</td><td>79.45</td><td></td><td></td></tr><tr><td>100.50</td><td>-2.2</td><td>50.00</td><td>110.66</td><td>141.64</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.75</td><td>145.09</td><td></td><td></td></tr><tr><td>100.45</td><td>-2.1</td><td>50.00</td><td>106.75</td><td>145.09</td><td></td><td></td></tr><tr><td>100.40</td><td>-2.1</td><td>50.00</td><td>102.85</td><td>148.55</td><td></td><td></td></tr><tr><td>99.50</td><td>-0.7</td><td>50.00</td><td>32.98</td><td>210.73</td><td></td><td></td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.12</td><td>214.18</td><td></td><td></td></tr><tr><td>99.45</td><td>-0.6</td><td>50.00</td><td>29.12</td><td>214.18</td><td></td><td></td></tr><tr><td>99.40</td><td>-0.5</td><td>50.00</td><td>25.25</td><td>217.64</td><td></td><td></td></tr><tr><td>99.15</td><td>-0.1</td><td>50.00</td><td>5.93</td><td>234.91</td><td></td><td></td></tr><tr><td>99.10</td><td>0.0</td><td>50.00</td><td>2.06</td><td>238.36</td><td></td><td></td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08852893 Theoretischer Fußpunkt = 99.099 m</p> <p>Einbindetiefe tg = 3.45 m Profillänge = 8.35 m</p>							106.71	-9.8	-	-	-			106.66	-9.7	-	-	-			106.45	-9.6	-	-	-			106.40	-9.5	-	-	-			106.40	-9.5	-	-	-			106.35	-9.5	-	-	-			105.55	-8.9	-	-	-			105.50	-8.8	-	-	-			105.50	-8.8	-	-	-			105.45	-8.8	-	-	-			105.45	-8.8	-	-	-			105.40	-8.7	-	-	-			105.14	-8.5	-	-	-			105.09	-8.4	-	-	-			105.09	-8.4	-	-	-			105.05	-8.4	-	-	-			105.05	-8.4	-	-	-			105.00	-8.4	-	-	-			105.00	-8.4	-	-	-			104.95	-8.3	-	-	-			104.45	-7.8	-	-	-			104.40	-7.8	-	-	-			104.40	-7.8	-	-	-			104.35	-7.7	-	-	-			104.20	-7.5	-	-	-			104.15	-7.5	-	-	-			104.15	-7.5	-	-	-			104.10	-7.4	-	-	-			103.45	-6.6	-	-	-			103.40	-6.6	-	-	-			103.40	-6.6	-	-	-			103.35	-6.5	-	-	-			102.74	-5.7	-	-	-			102.69	-5.6	-	-	-			102.69	-5.6	-	-	-			102.64	-5.5	-	-	-			102.60	-5.4	-	-	-			102.55	-5.4	0.00	0.00	0.00			102.55	-5.4	0.00	0.00	0.00			102.50	-5.3	0.00	0.00	3.45			102.50	-5.3	0.65	3.45	3.45			102.45	-5.2	0.65	3.41	6.91			102.45	-5.2	1.32	6.91	6.91			102.40	-5.2	1.32	6.81	10.36			101.90	-4.4	10.20	44.91	44.91			101.85	-4.3	10.20	44.13	48.36			101.85	-4.3	11.18	48.37	48.36			101.80	-4.2	11.18	47.50	51.82			101.50	-3.8	19.18	72.55	72.55			101.45	-3.7	19.18	71.05	76.00			101.45	-3.7	20.52	76.00	76.00			101.40	-3.6	20.52	74.40	79.45			100.50	-2.2	50.00	110.66	141.64			100.45	-2.1	50.00	106.75	145.09			100.45	-2.1	50.00	106.75	145.09			100.40	-2.1	50.00	102.85	148.55			99.50	-0.7	50.00	32.98	210.73			99.45	-0.6	50.00	29.12	214.18			99.45	-0.6	50.00	29.12	214.18			99.40	-0.5	50.00	25.25	217.64			99.15	-0.1	50.00	5.93	234.91			99.10	0.0	50.00	2.06	238.36		
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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: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{,k} = 158.01 \text{ kN/m}</math></p> <p><math>G'_{,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 52.24 \text{ kN/m}</math> (<math>E_{ah,k} = 299.61 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 85.96</math></p> <p>Summe <math>V_{,k} = 124.29 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 99.98 bis 96.46 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></td><td>Bezeichnung</td></tr><tr><td>102.55</td><td>99.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.10 m = <math>1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 189.75 / 1.40 = 135.54 \text{ kN/m}</math></p> <p><math>R_{,d} = R_{b,d} + R_{s1,d} = 1000.58 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 189.61 - 0.00 + 60.08 + 0.00 = 249.68 \text{ kN/m}</math></p> <p><math>\implies \mu = V_{,d} / R_{,d} = 249.68 / 1000.58 = 0.25</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	102.55	99.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung							
102.55	99.10	55.00	s3: Flussskies, -sand							
Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/22								
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr.: 22								
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 2 Datei: 04_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 = 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 = 9.05 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 K1 Schnitt 2L		Seite Anlage K1/23
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 11/23
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 <math>\mu_{ue} = 93.384 / 93.748 = 0.996</math> Bettungslager <math>B_{h,d} = 93.384 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 93.748 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50) <math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</div> <table><tr><th>Nr.</th><th>y</th><th>Neigung</th><th>Länge</th><th><math>N_{d'}</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-314.19</td><td>-271.43</td><td>-271.43</td><td>-50.77</td><td>3.900E+7</td><td>2.100E+7</td><td>-346.08</td></tr></table> <div>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_{d'}</math></th><th><math>Q_{d'}</math></th><th><math>M_{d'}</math></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>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-7.6</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-7.7</td><td>0.0</td><td>-314.69</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-7.7</td><td>0.1</td><td>-314.69</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>-0.0066</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{am,k}</math></th><th><math>\gamma_{am',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>) 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>105.090</td><td>28.330</td><td>29.927</td><td>0.00</td></tr><tr><td>105.090</td><td>104.750</td><td>36.782</td><td>38.228</td><td>4.10</td></tr><tr><td>104.750</td><td>103.760</td><td>38.228</td><td>42.441</td><td>7.50</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	-314.19	-271.43	-271.43	-50.77	3.900E+7	2.100E+7	-346.08	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]	-8.30	103.72	-7.6	0.0	-314.69	0.00	0.00	-7.47	103.72	-7.6	0.0	-314.69	0.00	0.00	-7.47	103.72	-7.6	0.0	-314.69	0.00	0.00	-6.64	103.72	-7.6	0.0	-314.69	0.00	0.00	-5.81	103.72	-7.6	0.0	-314.69	0.00	0.00	-4.98	103.72	-7.6	0.0	-314.69	0.00	0.00	-4.15	103.72	-7.6	0.0	-314.69	0.00	0.00	-3.32	103.72	-7.6	0.0	-314.69	0.00	0.00	-2.49	103.72	-7.6	0.0	-314.69	0.00	0.00	-1.66	103.72	-7.6	0.0	-314.69	0.00	0.00	-0.83	103.72	-7.7	0.0	-314.69	0.00	0.00	0.00	103.72	-7.7	0.1	-314.69	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0066	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	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]	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	<div>statisch geprüft für Standssicherheit Dipl.-Ing. A. Forner</div>	Schnitt: Anlage K1 Schnitt 2L	Seite Anlage K1/24
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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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																																																																																																																																																																																																																																																																																																
Kapitel: 5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:																																																																																																																																																																																																																																																																																																		
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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>103.760</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>101.800</td><td>35.241</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>99.949</td><td>42.422</td><td>45.910</td><td>0.00</td><td>0.00</td></tr><tr><td>99.949</td><td>99.799</td><td>45.910</td><td>46.526</td><td>0.00</td><td>0.00</td></tr><tr><td>99.799</td><td>99.749</td><td>46.526</td><td>46.731</td><td>0.00</td><td>0.00</td></tr><tr><td>99.749</td><td>80.000</td><td>46.731</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>101.80</td><td>0.00</td><td>-31.89</td></tr><tr><td>101.80</td><td>100.80</td><td>-31.89</td><td>-74.41</td></tr><tr><td>100.80</td><td>99.95</td><td>-74.41</td><td>-110.56</td></tr><tr><td>99.95</td><td>99.80</td><td>-110.56</td><td>-116.93</td></tr><tr><td>99.80</td><td>99.75</td><td>-116.93</td><td>-119.06</td></tr><tr><td>99.75</td><td>80.00</td><td>-119.06</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>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>-314.7</td></tr><tr><td>103.72</td><td>-210.4</td><td>158.3</td><td>-294.6</td><td></td></tr><tr><td>102.75</td><td>-245.0</td><td>81.6</td><td>-176.3</td><td></td></tr><tr><td>102.69</td><td>-247.0</td><td>76.8</td><td>-172.0</td><td></td></tr><tr><td>102.55</td><td>-252.3</td><td>66.4</td><td>-161.9</td><td></td></tr><tr><td>101.80</td><td>-261.2</td><td>55.1</td><td>-118.9</td><td></td></tr><tr><td>100.80</td><td>-256.0</td><td>76.2</td><td>-50.5</td><td></td></tr><tr><td>99.95</td><td>-266.5</td><td>23.7</td><td>-2.4</td><td></td></tr><tr><td>99.80</td><td>-266.0</td><td>6.3</td><td>-0.2</td><td></td></tr><tr><td>99.75</td><td>-265.6</td><td>0.0</td><td>0.0</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></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>-21.7</td><td>-7.6</td><td>-3.2</td><td></td></tr><tr><td>107.45</td><td>-29.9</td><td>-12.0</td><td>-6.6</td><td></td></tr><tr><td>107.45</td><td>-76.4</td><td>-12.0</td><td>-36.4</td><td></td></tr><tr><td>106.80</td><td>-92.6</td><td>-22.6</td><td>-47.4</td><td></td></tr><tr><td>105.75</td><td>-121.1</td><td>-46.3</td><td>-82.9</td><td></td></tr></table>								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	101.800	35.241	38.319	0.00	0.00	101.800	100.799	38.319	42.422	0.00	0.00	100.799	99.949	42.422	45.910	0.00	0.00	99.949	99.799	45.910	46.526	0.00	0.00	99.799	99.749	46.526	46.731	0.00	0.00	99.749	80.000	46.731	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	101.80	0.00	-31.89	101.80	100.80	-31.89	-74.41	100.80	99.95	-74.41	-110.56	99.95	99.80	-110.56	-116.93	99.80	99.75	-116.93	-119.06	99.75	80.00	-119.06	-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		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	-314.7	103.72	-210.4	158.3	-294.6		102.75	-245.0	81.6	-176.3		102.69	-247.0	76.8	-172.0		102.55	-252.3	66.4	-161.9		101.80	-261.2	55.1	-118.9		100.80	-256.0	76.2	-50.5		99.95	-266.5	23.7	-2.4		99.80	-266.0	6.3	-0.2		99.75	-265.6	0.0	0.0		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	-21.7	-7.6	-3.2		107.45	-29.9	-12.0	-6.6		107.45	-76.4	-12.0	-36.4		106.80	-92.6	-22.6	-47.4		105.75	-121.1	-46.3	-82.9	
103.760	103.720	42.441	42.611	17.40	17.80																																																																																																																																																																																																																																																																																																			
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102.745	102.690	46.760	46.994	27.55	28.10																																																																																																																																																																																																																																																																																																			
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103.72	-210.4	-156.4	-294.6	-314.7																																																																																																																																																																																																																																																																																																				
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Schnitt:		Anlage K1 Schnitt 2L				Seite Anlage K1/25																																																																																																																																																																																																																																																																																																		
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> <div> 105.50 -128.3 -53.2 -95.3  105.09 -140.4 -65.9 -119.6  104.75 -150.3 -80.7 -144.5  103.76 -179.7 -132.9 -249.1  103.72 -180.9 -135.3 -254.5 -271.4  103.72 -180.9 136.1 -254.5  102.75 -211.0 70.4 -152.7  102.69 -212.8 66.3 -148.9  102.55 -217.4 57.4 -140.2  101.80 -225.2 47.6 -103.1  100.80 -220.7 66.1 -43.8  99.95 -229.9 20.6 -2.1  99.80 -229.5 5.5 -0.1  99.75 -229.1 0.0 0.0 </div> </div> <div> Schnittgrößen (g+w,k)  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 -21.7 -7.6 -3.2  107.45 -29.9 -12.0 -6.6  107.45 -76.4 -12.0 -36.4  106.80 -92.6 -22.6 -47.4  105.75 -121.1 -46.3 -82.9  105.50 -128.3 -53.2 -95.3  105.09 -140.4 -65.9 -119.6  104.75 -150.3 -80.7 -144.5  103.76 -179.7 -132.9 -249.1  103.72 -180.9 -135.3 -254.5 -271.4  103.72 -180.9 136.1 -254.5  102.75 -211.0 70.4 -152.7  102.69 -212.8 66.3 -148.9  102.55 -217.4 57.4 -140.2  101.80 -225.2 47.6 -103.1  100.80 -220.7 66.1 -43.8  99.95 -229.9 20.6 -2.1  99.80 -229.5 5.5 -0.1  99.75 -229.1 0.0 0.0 </div> <div> Schnittgrößen (q,k)  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 0.0 0.0 0.0  107.80 0.0 0.0 0.0  107.45 0.0 0.0 0.0  106.80 0.0 0.0 0.0  105.75 0.0 0.0 0.0  105.50 0.0 0.0 0.0  105.09 0.0 0.0 0.0  104.75 0.0 0.0 0.0  103.76 0.0 0.0 0.0  103.72 0.0 0.0 0.0 -10.0  102.75 0.0 0.0 0.0  102.69 0.0 0.0 0.0  102.55 0.0 0.0 0.0  101.80 0.0 0.0 0.0  100.80 0.0 0.0 0.0  99.95 0.0 0.0 0.0  99.80 0.0 0.0 0.0  99.75 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 -21.9 - - -  108.80 -21.9 - - -  108.80 -21.9 - - -  108.79 -21.9 - - - </div>		
Schnitt:	Anlage K1 Schnitt 2L	Seite Anlage K1/26
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 26
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> 108.79 -21.9 - - -  108.74 -21.7 - - -  107.85 -18.9 - - -  107.80 -18.7 - - -  107.80 -18.7 - - -  107.75 -18.6 - - -  107.50 -17.8 - - -  107.45 -17.6 - - -  107.45 -17.6 - - -  107.40 -17.5 - - -  106.85 -15.7 - - -  106.80 -15.6 - - -  106.80 -15.6 - - -  106.75 -15.4 - - -  105.80 -12.5 - - -  105.75 -12.3 - - -  105.75 -12.3 - - -  105.70 -12.2 - - -  105.55 -11.7 - - -  105.50 -11.6 - - -  105.50 -11.6 - - -  105.45 -11.4 - - -  105.14 -10.5 - - -  105.09 -10.4 - - -  105.09 -10.4 - - -  105.04 -10.2 - - -  104.80 -9.6 - - -  104.75 -9.4 - - -  104.75 -9.4 - - -  104.70 -9.3 - - -  103.80 -6.9 - - -  103.76 -6.8 - - -  103.76 -6.8 - - -  103.72 -6.7 - - -  103.72 -6.7 - - -  103.67 -6.5 - - -  102.80 -4.5 - - -  102.75 -4.4 - - -  102.75 -4.4 - - -  102.69 -4.3 - - -  102.69 -4.3 - - -  102.64 -4.2 - - -  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 -3.9 0.00 0.00 3.45  101.85 -2.6 18.85 48.37 48.37  101.80 -2.5 18.85 46.52 51.82  101.80 -2.5 21.00 51.82 51.82  101.75 -2.4 21.00 49.77 55.28  100.85 -0.7 50.00 33.77 117.46  100.80 -0.6 50.00 29.19 120.92  100.80 -0.6 50.00 29.19 120.92  100.75 -0.5 50.00 24.62 124.37  100.00 0.9 50.00 -43.20 176.20  99.95 1.0 50.00 -47.70 179.65  99.95 1.0 50.00 -47.70 179.65  99.90 1.0 50.00 -52.20 183.11  99.85 1.1 50.00 -56.70 186.56  99.80 1.2 50.00 -61.20 190.02  99.80 1.2 50.00 -61.20 190.02  99.75 1.3 50.00 -65.70 193.47 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  phi,[g+q],k: -0.10307604  Theoretischer Fußpunkt = 99.749 m</p> <p>Einbindetiefe tg = 2.80 m  Profillänge = 9.05 m</p> </div> </div>		
Schnitt:	Anlage K1 Schnitt 2L	Seite Anlage K1/27
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr.: 1127
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: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 171.25 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 46.50 \text{ kN/m}</math> <math>E_{av,k} = 49.12 \text{ kN/m}</math> (<math>E_{ah,k} = 285.34 \text{ kN/m}</math>) <math>B_{v,k} = 32.35</math> Summe <math>V_{,k} = 234.52 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.63 bis 97.11 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 99.75 55.00 s3: Flussskies, -sand Mantelfläche bis 99.75 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 154.00 / 1.40 = 110.00 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 975.05 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 205.50 - 0.00 + 56.49 + 55.80 = 317.79 \text{ kN/m}</math> <math>\implies \mu = V_{,d} / R_{,d} = 317.79 / 975.05 = 0.33</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/28
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

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Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 2  
Datei: 05\_BS 2\_LF4 (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-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/m <sup>2</sup> ]	[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/m <sup>2</sup> ]	[m]	[mNHN]	[mNHN]
1	3.30	0.00	102.55	102.55

Zusatzdrücke

Nr.	e(oben)	e(unten)	z(oben)	z(unten)	Typ
[-]	[kN/m <sup>2</sup> ]	[kN/m <sup>2</sup> ]	[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	46.80	0.00

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

Schnitt:	Anlage K1	Schnitt 2L	Seite Anlage K1/29
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr.: 11/29
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  $\mu_e = 228.827 / 230.994 = 0.991$   
Bettungslager  $B_{h,d} = 228.827 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 230.994 \text{ kN/m}$

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	-267.85	-207.66	-207.66	-49.96	3.900E+7	2.100E+7	-264.77 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	-8.4	0.0	-268.52	0.00	0.00
-7.47	103.72	-8.4	0.0	-268.52	0.00	0.00
-7.47	103.72	-8.4	0.0	-268.52	0.00	0.00
-6.64	103.72	-8.4	0.0	-268.52	0.00	0.00
-5.81	103.72	-8.4	0.0	-268.52	0.00	0.00
-4.98	103.72	-8.4	0.0	-268.52	0.00	0.00
-4.15	103.72	-8.4	0.0	-268.52	0.00	0.00
-3.32	103.72	-8.4	0.0	-268.52	0.00	0.00
-2.49	103.72	-8.5	0.1	-268.52	0.00	0.00
-1.66	103.72	-8.5	0.1	-268.52	0.00	0.00
-0.83	103.72	-8.5	0.1	-268.52	0.00	0.00
0.00	103.72	-8.5	0.1	-268.52	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0066

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{a,k}$	$\phi_{i,k}$	$c(pas),k$	$c(akt),k$	$d(p)/\phi$	$d(a)/\phi$	$q_c$	$c_{u,k}$
[-]	[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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 K1	Schnitt 2L	Seite Anlage K1/30
Kapitel:	6	LF 4 (BS-P, mit Lasten)	Archiv Nr. 11/30
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>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>-100.1</td><td>-11.9</td><td>-46.4</td><td></td></tr><tr><td>106.80</td><td>-120.1</td><td>-23.8</td><td>-57.8</td><td></td></tr><tr><td>105.75</td><td>-155.5</td><td>-51.5</td><td>-96.4</td><td></td></tr><tr><td>105.50</td><td>-164.5</td><td>-59.6</td><td>-110.3</td><td></td></tr><tr><td>105.09</td><td>-179.6</td><td>-74.9</td><td>-137.7</td><td></td></tr><tr><td>104.75</td><td>-191.8</td><td>-92.8</td><td>-166.2</td><td></td></tr><tr><td>103.76</td><td>-228.5</td><td>-157.2</td><td>-288.4</td><td></td></tr><tr><td>103.72</td><td>-230.0</td><td>-160.2</td><td>-294.7</td><td>-268.5</td></tr><tr><td>103.72</td><td>-230.0</td><td>108.4</td><td>-294.7</td><td></td></tr><tr><td>102.75</td><td>-267.6</td><td>26.1</td><td>-227.7</td><td></td></tr><tr><td>102.69</td><td>-269.8</td><td>20.9</td><td>-226.4</td><td></td></tr><tr><td>102.55</td><td>-275.5</td><td>9.5</td><td>-224.3</td><td></td></tr><tr><td>102.10</td><td>-279.4</td><td>7.6</td><td>-221.3</td><td></td></tr><tr><td>101.80</td><td>-277.7</td><td>16.4</td><td>-217.8</td><td></td></tr><tr><td>100.80</td><td>-255.1</td><td>84.4</td><td>-169.1</td><td></td></tr><tr><td>99.80</td><td>-253.0</td><td>95.7</td><td>-72.2</td><td></td></tr><tr><td>98.80</td><td>-269.7</td><td>28.6</td><td>-3.7</td><td></td></tr><tr><td>98.55</td><td>-270.6</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	-100.1	-11.9	-46.4		106.80	-120.1	-23.8	-57.8		105.75	-155.5	-51.5	-96.4		105.50	-164.5	-59.6	-110.3		105.09	-179.6	-74.9	-137.7		104.75	-191.8	-92.8	-166.2		103.76	-228.5	-157.2	-288.4		103.72	-230.0	-160.2	-294.7	-268.5	103.72	-230.0	108.4	-294.7		102.75	-267.6	26.1	-227.7		102.69	-269.8	20.9	-226.4		102.55	-275.5	9.5	-224.3		102.10	-279.4	7.6	-221.3		101.80	-277.7	16.4	-217.8		100.80	-255.1	84.4	-169.1		99.80	-253.0	95.7	-72.2		98.80	-269.7	28.6	-3.7		98.55	-270.6	0.0	0.0	
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Dipl.-Ing. A. Forner



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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>100.800.00.00.0</div><div>99.800.000.00.0</div><div>98.800.000.00.0</div><div>98.550.000.00.0</div></div><div><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>108.80-20.0--</div><div>108.80-20.0--</div><div>108.80-20.0--</div><div>108.79-20.0--</div><div>108.79-20.0--</div><div>108.74-19.9--</div><div>107.85-17.4--</div><div>107.80-17.2--</div><div>107.80-17.2--</div><div>107.75-17.1--</div><div>107.50-16.4--</div><div>107.45-16.3--</div><div>107.45-16.3--</div><div>107.40-16.1--</div><div>106.85-14.6--</div><div>106.80-14.5--</div><div>106.80-14.5--</div><div>106.75-14.3--</div><div>105.80-11.8--</div><div>105.75-11.6--</div><div>105.75-11.6--</div><div>105.70-11.5--</div><div>105.55-11.1--</div><div>105.50-11.0--</div><div>105.50-11.0--</div><div>105.45-10.8--</div><div>105.14-10.0--</div><div>105.09-9.9--</div><div>105.09-9.9--</div><div>105.04-9.8--</div><div>104.80-9.2--</div><div>104.75-9.1--</div><div>104.75-9.1--</div><div>104.70-8.9--</div><div>103.80-6.8--</div><div>103.76-6.7--</div><div>103.76-6.7--</div><div>103.72-6.6--</div><div>103.72-6.6--</div><div>103.67-6.5--</div><div>102.80-4.8--</div><div>102.75-4.7--</div><div>102.75-4.7--</div><div>102.69-4.6--</div><div>102.69-4.6--</div><div>102.64-4.5--</div><div>102.60-4.4--</div><div>102.55-4.30.000.000.00</div><div>102.55-4.30.000.0019.82</div><div>102.50-4.20.000.0023.27</div><div>102.15-3.613.0147.4547.45</div><div>102.10-3.613.0146.3750.91</div><div>102.10-3.614.2850.9150.91</div><div>102.05-3.514.2849.7354.36</div><div>101.85-3.221.5868.1868.18</div><div>101.80-3.121.5866.4871.63</div><div>101.80-3.123.2571.6471.63</div><div>101.75-3.023.2569.8275.09</div><div>100.85-1.750.0085.90137.27</div><div>100.80-1.750.0082.63140.72</div><div>100.80-1.750.0082.63140.72</div><div>100.75-1.650.0079.39144.18</div></div></div></div>					
Schnitt:		Anlage K1 Schnitt 2L		Seite Anlage K1/33	
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11/33	
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>99.85 -0.5 50.00 25.02 206.36</div> <div>99.80 -0.4 50.00 22.17 209.81</div> <div>99.80 -0.4 50.00 22.17 209.81</div> <div>99.75 -0.4 50.00 19.32 213.26</div> <div>98.85 0.6 50.00 -30.60 275.44</div> <div>98.80 0.7 50.00 -33.34 278.90</div> <div>98.80 0.7 50.00 -33.34 278.90</div> <div>98.75 0.7 50.00 -36.08 282.35</div> <div>98.60 0.9 50.00 -44.30 292.72</div> <div>98.55 0.9 50.00 -47.04 296.17</div> <div>Verdrehung (Theoretischer Fußpunkt) [°]</div> <div>phi,[g+q],k: -0.06277078</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 &gt;= Bv,k</div> <div>G,k = 193.96 kN/m</div> <div>G',k = 0.00 kN/m</div> <div>Pv,k = 46.80 kN/m</div> <div>Eav,k = 57.26 kN/m (Eah,k = 323.76 kN/m)</div> <div>Bv,k = 71.46</div> <div>Summe V,k = 226.57 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) ==&gt; 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 98.55 55.00 s3: Flusskies, -sand</div> <div>Mantelfläche bis 98.55 m = 1.000 m²/m/m ==&gt; 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>R,d = Rb,d + Rs1,d = 1022.19 kN/m</div> <div>Einwirkungen</div> <div>V,d = G,d - G',k + Eav,d + Pv,d = 261.85 - 0.00 + 73.01 + 63.18 = 398.04 kN/m</div> <div>==&gt; µ = V,d / R,d = 398.04 / 1022.19 = 0.39</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage K1 Schnitt 2L		Seite Anlage K1/34
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 11034
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

11/04

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 L1 Schnitt 3L</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 3 Datei: 01_BS 3_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 = 106.24 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 2.13 103.74 102.86 100.67 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</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 14.50 106.23 104.74 Ständig</div>		
Schnitt:	Anlage L1 Schnitt 3L	Seite Anlage L1/1
Kapitel:	1 LF 1 (BS-T)	Archiv Nr.: 1119
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

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

Art des Fußlagers:  
Profillänge automatisch und Fuß gebettet  
Profillänge = 6.40 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
105.75	105.24	5.000	5.000
105.24	103.74	5.000	5.000
103.74	102.64	5.000	5.000
102.64	80.00	50.000	50.000

Ausnutzungsgrad  $\mu_e = 494.776 / 495.590 = 0.998$   
Bettungslager  $B_{h,d} = 494.776 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 495.590 \text{ kN/m}$

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  $< 0.0$ .  
Ersatzerddruck-Beiwert  $k_{ah}$  wird nur auf ständige Lasten angewendet.  
bestimmt nach:  
Wandreibung angepasst.

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

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

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
106.240	106.230	0.000	0.000	0.00
106.230	105.750	0.000	4.671	0.00
105.750	105.500	4.671	7.104	0.00
105.500	105.240	7.104	9.634	0.00
105.240	105.000	9.634	11.970	2.60
105.000	104.740	11.970	14.500	5.00
104.740	104.410	0.000	0.000	5.00
104.410	104.204	0.000	0.000	5.00
104.204	103.740	0.000	0.000	5.00
103.740	103.740	0.000	0.000	5.00
103.740	103.603	0.000	22.696	5.00
103.603	103.479	22.696	49.526	5.00
103.479	103.467	49.526	53.506	5.00
103.467	103.355	53.506	70.666	5.00
103.355	103.325	70.666	77.203	5.00
103.325	103.231	77.203	93.810	5.00
103.231	103.216	93.810	97.019	5.00
103.216	103.106	97.019	96.992	5.00
103.106	102.982	96.992	100.884	5.00

Schnitt: Anlage L1	Schnitt 3L	Seite Anlage L1/2
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																																																																																																																																																																																																																																																																																																																					
<table><tr><td>102.982</td><td>102.957</td><td>100.884</td><td>102.292</td><td>5.00</td><td>5.00</td></tr><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>101.966</td><td>77.873</td><td>75.348</td><td>5.00</td><td>5.00</td></tr><tr><td>101.966</td><td>101.768</td><td>75.348</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>100.829</td><td>48.212</td><td>45.136</td><td>5.00</td><td>5.00</td></tr><tr><td>100.829</td><td>100.672</td><td>45.136</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>99.839</td><td>47.825</td><td>48.029</td><td>5.00</td><td>5.00</td></tr><tr><td>99.839</td><td>80.000</td><td>48.029</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><tr><td>102.55</td><td>102.36</td><td>-128.71</td><td>-136.84</td></tr></table>								102.982	102.957	100.884	102.292	5.00	5.00	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	101.966	77.873	75.348	5.00	5.00	101.966	101.768	75.348	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	100.829	48.212	45.136	5.00	5.00	100.829	100.672	45.136	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	99.839	47.825	48.029	5.00	5.00	99.839	80.000	48.029	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	102.55	102.36	-128.71	-136.84
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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	101.966	77.873	75.348	5.00	5.00																																																																																																																																																																																																																																																																																																																						
101.966	101.768	75.348	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	100.829	48.212	45.136	5.00	5.00																																																																																																																																																																																																																																																																																																																						
100.829	100.672	45.136	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	99.839	47.825	48.029	5.00	5.00																																																																																																																																																																																																																																																																																																																						
99.839	80.000	48.029	129.400	5.00	5.00																																																																																																																																																																																																																																																																																																																						
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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																																																																																																																																																																																																																																																																																																																					
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106.23	105.75	0.00	0.00																																																																																																																																																																																																																																																																																																																								
105.75	105.50	0.00	-14.63																																																																																																																																																																																																																																																																																																																								
105.50	105.24	-14.63	-29.85																																																																																																																																																																																																																																																																																																																								
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105.00	104.74	-25.71	-29.83																																																																																																																																																																																																																																																																																																																								
104.74	104.41	-29.83	-35.07																																																																																																																																																																																																																																																																																																																								
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103.47	103.35	-57.26	-59.03																																																																																																																																																																																																																																																																																																																								
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103.11	102.98	-62.98	-64.95																																																																																																																																																																																																																																																																																																																								
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Standsticherheit

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>102.36 102.22 -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>102.06 101.97 -149.48 -153.69</div><div>101.97 101.77 -153.69 -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>101.14 100.83 -188.67 -202.00</div><div>100.83 100.67 -202.00 -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 99.84 -241.97 -244.09</div><div>99.84 80.00 -244.09 -1087.28</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>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 7.2 0.3</div><div>105.00 -19.6 12.8 2.6</div><div>104.74 -21.6 20.8 7.0</div><div>104.41 -23.4 39.0 16.7</div><div>104.41 -23.4 -83.1 16.7</div><div>104.20 -24.2 -70.3 0.9</div><div>103.74 -26.5 -44.1 -25.4</div><div>103.74 -26.5 -44.1 -25.4</div><div>103.60 -27.4 -40.6 -31.2</div><div>103.48 -28.3 -39.8 -36.2</div><div>103.47 -28.4 -40.0 -36.7</div><div>103.35 -29.3 -42.8 -41.3</div><div>103.33 -29.5 -44.0 -42.6</div><div>103.23 -30.3 -49.2 -47.0</div><div>103.22 -30.5 -50.2 -47.7</div><div>103.11 -31.5 -57.9 -53.6</div><div>102.98 -32.7 -67.2 -61.4</div><div>102.96 -32.9 -69.2 -63.1</div><div>102.95 -33.0 -70.0 -63.7</div><div>102.86 -34.0 -77.3 -70.4</div><div>102.66 -36.2 -95.6 -87.5</div><div>102.65 -36.3 -96.5 -88.3</div><div>102.64 -36.4 -97.6 -89.3</div><div>102.60 -36.7 -100.3 -93.6</div><div>102.55 -33.6 -94.1 -97.8</div><div>102.36 -18.9 -65.8 -113.2</div><div>102.22 -7.5 -43.5 -120.8</div><div>102.08 4.5 -19.1 -125.2</div><div>102.06 6.1 -15.9 -125.5</div><div>101.97 14.1 0.4 -126.3</div><div>101.77 28.0 28.6 -123.3</div><div>101.61 37.0 47.0 -117.4</div><div>101.19 52.8 80.7 -89.9</div><div>101.14 54.0 83.2 -85.6</div><div>100.83 57.0 89.1 -58.2</div><div>100.67 56.1 86.3 -44.4</div><div>100.23 50.4 55.7 -11.8</div><div>99.89 53.5 8.6 -0.2</div><div>99.84 54.6 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>106.24 0.0 0.0 0.0</div><div>106.23 -0.2 0.0 0.0</div><div>105.75 -9.3 -1.1 -0.2</div><div>105.50 -13.1 -0.2 -0.5</div><div>105.24 -14.9 6.0 0.2</div><div>105.00 -17.2 10.7 2.1</div></div></div></div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/4g.
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 14g. für Standsicherheit
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



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</table>				104.74	-19.0	17.4	5.8	104.41	-20.7	32.9	14.0	104.41	-20.7	-68.8	14.0	104.20	-21.4	-58.0	0.9	103.74	-23.6	-35.7	-20.7	103.74	-23.6	-35.7	-20.7	103.60	-24.4	-32.9	-25.4	103.48	-25.2	-32.2	-29.4	103.47	-25.3	-32.4	-29.8	103.35	-26.1	-35.0	-33.5	103.33	-26.3	-36.0	-34.6	103.23	-27.1	-40.6	-38.2	103.22	-27.2	-41.5	-38.8	103.11	-28.1	-48.3	-43.7	102.98	-29.2	-56.5	-50.2	102.96	-29.4	-58.2	-51.7	102.95	-29.5	-58.9	-52.2	102.86	-30.3	-65.3	-57.8	102.66	-32.3	-81.3	-72.3	102.65	-32.4	-82.1	-73.0	102.64	-32.5	-83.0	-73.9	102.60	-32.8	-85.4	-77.5	102.55	-30.1	-80.3	-81.1	102.36	-17.6	-56.5	-94.2	102.22	-7.9	-37.6	-100.8	102.08	2.3	-17.1	-104.6	102.06	3.6	-14.4	-104.9	101.97	10.4	-0.6	-105.6	101.77	22.3	23.3	-103.3	101.61	29.9	38.8	-98.5	101.19	43.5	67.5	-75.5	101.14	44.5	69.6	-71.9	100.83	47.1	74.9	-49.0	100.67	46.3	72.5	-37.4	100.23	40.9	47.0	-10.0	99.89	43.1	7.2	-0.2	99.84	44.0	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.24	0.0	0.0	0.0	106.23	-0.2	0.0	0.0	105.75	-9.3	-1.1	-0.2	105.50	-13.1	-0.2	-0.5	105.24	-14.9	6.0	0.2	105.00	-17.2	10.7	2.1	104.74	-19.0	17.4	5.8	104.41	-20.7	32.9	14.0	104.41	-20.7	-68.8	14.0	104.20	-21.4	-58.0	0.9	103.74	-23.6	-35.7	-20.7	103.74	-23.6	-35.7	-20.7	103.60	-24.4	-32.9	-25.4	103.48	-25.2	-32.2	-29.4	103.47	-25.3	-32.4	-29.8	103.35	-26.1	-35.0	-33.5	103.33	-26.3	-36.0	-34.6	103.23	-27.1	-40.6	-38.2	103.22	-27.2	-41.5	-38.8	103.11	-28.1	-48.3	-43.7	102.98	-29.2	-56.5	-50.2	102.96	-29.4	-58.2	-51.7	102.95	-29.5	-58.9	-52.2	102.86	-30.3	-65.3	-57.8	102.66	-32.3	-81.3	-72.3	102.65	-32.4	-82.1	-73.0	102.64	-32.5	-83.0	-73.9	102.60	-32.8	-85.4	-77.5	102.55	-30.1	-80.3	-81.1	102.36	-17.6	-56.5	-94.2
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104.41	-20.7	-68.8	14.0																																																																																																																																																																																																																																																																																				
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103.48	-25.2	-32.2	-29.4																																																																																																																																																																																																																																																																																				
103.47	-25.3	-32.4	-29.8																																																																																																																																																																																																																																																																																				
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<table><tr><td>102.22</td><td>-7.9</td><td>-37.6</td><td>-100.8</td></tr><tr><td>102.08</td><td>2.3</td><td>-17.1</td><td>-104.6</td></tr><tr><td>102.06</td><td>3.6</td><td>-14.4</td><td>-104.9</td></tr><tr><td>101.97</td><td>10.4</td><td>-0.6</td><td>-105.6</td></tr><tr><td>101.77</td><td>22.3</td><td>23.3</td><td>-103.3</td></tr><tr><td>101.61</td><td>29.9</td><td>38.8</td><td>-98.5</td></tr><tr><td>101.19</td><td>43.5</td><td>67.5</td><td>-75.5</td></tr><tr><td>101.14</td><td>44.5</td><td>69.6</td><td>-71.9</td></tr><tr><td>100.83</td><td>47.1</td><td>74.9</td><td>-49.0</td></tr><tr><td>100.67</td><td>46.3</td><td>72.5</td><td>-37.4</td></tr><tr><td>100.23</td><td>40.9</td><td>47.0</td><td>-10.0</td></tr><tr><td>99.89</td><td>43.1</td><td>7.2</td><td>-0.2</td></tr><tr><td>99.84</td><td>44.0</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>106.24</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.23</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>105.24</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>104.20</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>102.98</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>102.95</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>102.66</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>102.64</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>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.36</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>102.22</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>102.06</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.97</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>100.83</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>99.89</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></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>106.24</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></table>						102.22	-7.9	-37.6	-100.8	102.08	2.3	-17.1	-104.6	102.06	3.6	-14.4	-104.9	101.97	10.4	-0.6	-105.6	101.77	22.3	23.3	-103.3	101.61	29.9	38.8	-98.5	101.19	43.5	67.5	-75.5	101.14	44.5	69.6	-71.9	100.83	47.1	74.9	-49.0	100.67	46.3	72.5	-37.4	100.23	40.9	47.0	-10.0	99.89	43.1	7.2	-0.2	99.84	44.0	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.24	0.0	0.0	0.0	106.23	0.0	0.0	0.0	105.75	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	104.74	0.0	0.0	0.0	104.41	0.0	0.0	0.0	104.20	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	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	102.60	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	102.08	0.0	0.0	0.0	102.06	0.0	0.0	0.0	101.97	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	100.83	0.0	0.0	0.0	100.67	0.0	0.0	0.0	100.23	0.0	0.0	0.0	99.89	0.0	0.0	0.0	99.84	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-17.9	-	-	-	106.23	-17.9	-	-	-	106.23	-17.9	-	-	-	106.18	-17.7	-	-	-	105.80	-16.5	-	-	-	105.75	-16.4	0.00	0.00	0.00	105.75	-16.4	0.00	0.00	0.00
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99.89	0.0	0.0	0.0																																																																																																																																																																																																																																																																																			
99.84	0.0	0.0	0.0																																																																																																																																																																																																																																																																																			
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106.18	-17.7	-	-	-																																																																																																																																																																																																																																																																																		
105.80	-16.5	-	-	-																																																																																																																																																																																																																																																																																		
105.75	-16.4	0.00	0.00	0.00																																																																																																																																																																																																																																																																																		
105.75	-16.4	0.00	0.00	0.00																																																																																																																																																																																																																																																																																		
Schnitt: Anlage L1 Schnitt 3L				Seite Anlage L1/6																																																																																																																																																																																																																																																																																		
Kapitel: 1 LF 1 (BS-T)				Archiv Nr.:																																																																																																																																																																																																																																																																																		
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																				

Statisch geprüft  
für  
Standicherheit  
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
105.70	-16.2	0.00	0.00	4.75
105.55	-15.7	1.21	19.02	19.02
105.50	-15.5	1.21	18.83	23.77
105.50	-15.5	1.53	23.78	23.77
105.45	-15.4	1.53	23.52	28.72
105.29	-14.9	2.93	43.56	43.55
105.24	-14.7	2.93	43.07	48.50
105.24	-14.7	2.00	29.40	29.40
105.19	-14.6	2.00	29.09	31.87
105.05	-14.1	2.79	39.30	39.30
105.00	-13.9	2.79	38.87	41.77
105.00	-13.9	3.00	41.78	41.77
104.95	-13.8	3.00	41.27	43.11
104.79	-13.3	3.55	47.14	47.14
104.74	-13.1	3.55	46.54	48.48
104.74	-13.1	3.70	48.48	48.48
104.69	-12.9	3.70	47.92	49.69
104.46	-12.2	4.58	55.77	55.77
104.41	-12.0	4.58	55.08	56.99
104.41	-12.0	4.74	56.99	56.99
104.36	-11.9	4.74	56.20	58.31
104.26	-11.5	5.00	57.66	60.97
104.20	-11.4	5.00	56.82	62.30
104.20	-11.4	5.00	56.82	62.30
104.15	-11.2	5.00	55.99	63.63
103.79	-10.0	5.00	50.16	72.93
103.74	-9.9	5.00	49.33	74.26
103.74	-9.9	5.00	49.33	85.99
103.74	-9.9	5.00	49.29	86.06
103.74	-9.9	5.00	49.29	86.06
103.69	-9.7	5.00	48.57	87.21
103.65	-9.6	5.00	47.85	88.37
103.60	-9.4	5.00	47.12	89.52
103.60	-9.4	5.00	47.12	89.52
103.54	-9.2	5.00	46.12	91.12
103.54	-9.2	5.00	46.12	91.12
103.48	-9.0	5.00	45.13	92.72
103.48	-9.0	5.00	45.13	92.72
103.47	-9.0	5.00	44.93	93.04
103.47	-9.0	5.00	44.93	93.04
103.41	-8.8	5.00	44.03	94.49
103.41	-8.8	5.00	44.03	94.49
103.35	-8.6	5.00	43.13	95.93
103.35	-8.6	5.00	43.13	95.93
103.33	-8.5	5.00	42.65	96.70
103.33	-8.5	5.00	42.65	96.70
103.28	-8.4	5.00	41.90	97.91
103.28	-8.4	5.00	41.90	97.91
103.23	-8.2	5.00	41.14	99.13
103.23	-8.2	5.00	41.14	99.13
103.22	-8.2	5.00	40.90	99.51
103.22	-8.2	5.00	40.90	99.51
103.16	-8.0	5.00	40.03	100.92
103.16	-8.0	5.00	40.03	100.92
103.11	-7.8	5.00	39.15	102.34
103.11	-7.8	5.00	39.15	102.34
103.04	-7.6	5.00	38.16	103.94
103.04	-7.6	5.00	38.16	103.94
102.98	-7.4	5.00	37.17	105.54
102.98	-7.4	5.00	37.17	105.54
102.96	-7.4	5.00	36.77	106.20
102.96	-7.4	5.00	36.77	106.20
102.95	-7.3	5.00	36.63	106.42
102.95	-7.3	5.00	36.63	106.42
102.90	-7.2	5.00	35.91	107.58
102.90	-7.2	5.00	35.91	107.58
102.86	-7.0	5.00	35.20	108.74
102.86	-7.0	5.00	35.20	108.74
102.81	-6.9	5.00	34.41	110.02
102.71	-6.6	5.00	32.85	112.58
102.66	-6.4	5.00	32.06	113.86
Schnitt: Anlage L1 Schnitt 3L				Seite Anlage L1/7
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> 102.66 -6.4 5.00 32.06 113.86  102.65 -6.4 5.00 31.93 114.08  102.65 -6.4 5.00 31.93 114.08  102.64 -6.4 5.00 31.76 114.36  102.64 -6.4 5.00 31.76 203.17  102.60 -6.2 5.00 31.08 206.17  102.60 -6.2 33.17 206.18 206.17  102.55 -6.1 33.17 201.67 209.16  102.55 -6.1 34.41 209.17 209.16  102.51 -5.9 34.41 204.02 212.46  102.41 -5.6 38.90 219.08 219.07  102.36 -5.5 38.90 213.30 222.37  102.36 -5.5 40.56 222.39 222.37  102.32 -5.3 40.56 216.54 225.58  102.27 -5.2 44.05 228.81 228.79  102.22 -5.1 44.05 222.49 232.01  102.22 -5.1 45.94 232.02 232.01  102.18 -4.9 45.94 225.44 235.22  102.13 -4.8 50.00 238.25 238.43  102.08 -4.6 50.00 231.13 241.64  102.08 -4.6 50.00 231.13 241.64  102.06 -4.6 50.00 228.33 242.90  102.06 -4.6 50.00 228.33 242.90  102.02 -4.4 50.00 220.77 246.32  102.02 -4.4 50.00 220.77 246.32  101.97 -4.3 50.00 213.24 249.75  101.97 -4.3 50.00 213.24 249.75  101.92 -4.1 50.00 205.72 253.17  101.82 -3.8 50.00 190.76 260.01  101.77 -3.7 50.00 183.31 263.43  101.77 -3.7 50.00 183.31 263.43  101.72 -3.5 50.00 175.58 266.99  101.66 -3.4 50.00 167.87 270.56  101.61 -3.2 50.00 160.19 274.12  101.61 -3.2 50.00 160.19 274.12  101.56 -3.0 50.00 152.42 277.73  101.25 -2.1 50.00 106.29 299.38  101.19 -2.0 50.00 98.67 302.99  101.19 -2.0 50.00 98.67 302.99  101.14 -1.8 50.00 91.06 306.60  101.14 -1.8 50.00 91.06 306.60  101.09 -1.7 50.00 83.48 310.20  100.88 -1.1 50.00 53.28 324.64  100.83 -0.9 50.00 45.76 328.25  100.83 -0.9 50.00 45.76 328.25  100.78 -0.8 50.00 38.26 331.86  100.72 -0.6 50.00 30.76 335.47  100.67 -0.5 50.00 23.28 339.07  100.67 -0.5 50.00 23.28 339.07  100.62 -0.3 50.00 16.27 342.46  100.28 0.7 50.00 -32.64 366.14  100.23 0.8 50.00 -39.61 369.52  100.23 0.8 50.00 -39.61 369.52  100.18 0.9 50.00 -46.58 372.91  99.94 1.6 50.00 -81.42 389.82  99.89 1.8 50.00 -88.39 393.21  99.89 1.8 50.00 -88.39 393.21  99.84 1.9 50.00 -95.47 396.65 </div> </div>		
<p>Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.16295324  Theoretischer Fußpunkt = 99.839 m</p> <p>Einbindetiefe <math>t_g</math> = 5.91 m  Profillänge = 6.40 m</p>		
Schnitt:	Anlage L1    Schnitt 3L	Seite Anlage L1/8
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</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_{,k} = 121.11 \text{ kN/m}</math></p> <p><math>G'_{,k} = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 44.29 \text{ kN/m}</math> (<math>E_{ah,k} = 261.77 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 152.35</math></p> <p>Summe <math>V_{,k} = 13.05 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle)</p> <p>Verfahren 2: EAU Bild E 4-3 (rechts)</p> <p>Bohrpfahlwand <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.72 bis 97.20 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>105.75</td> <td>105.24</td> <td>0.00</td> <td>S1: Auffüllungen</td> </tr> <tr> <td>105.24</td> <td>103.74</td> <td>0.00</td> <td>S2: Auelehm (über GS)</td> </tr> <tr> <td>103.74</td> <td>102.64</td> <td>0.00</td> <td>S2: Auelehm (unter GS)</td> </tr> <tr> <td>102.64</td> <td>99.84</td> <td>55.00</td> <td>s3: Flusssandes, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.84 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 154.00 / 1.40 = 110.00 \text{ kN/m}</math></p> <p><math>R_{,d} = R_{b,d} + R_{s1,d} = 975.05 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 145.33 - 0.00 + 50.94 + 0.00 = 196.26 \text{ kN/m}</math></p> <p><math>\Rightarrow \mu = V_{,d} / R_{,d} = 196.26 / 975.05 = 0.20</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.84	55.00	s3: Flusssandes, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.84	55.00	s3: Flusssandes, -sand																			
Schnitt:	Anlage L1    Schnitt 3L	Seite Anlage L1/9																				
Kapitel:	1                    LF 1 (BS-T)	Archiv Nr.: 11/9																				
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: 02_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 L1 Schnitt 3L		Seite Anlage L1/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 1110
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025

Statisch geprüft

gemäß EN 1997-1

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 automatisch und Fuß gebettet

Profillänge = 9.30 m

Bettungsmodule

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

Ausnutzungsgrad mue = 489.204 / 491.887 = 0.995

Bettungslager Bh,d = 489.204 kN/m

Erdwiderstand Eph,d = 491.887 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	-189.54	-164.25	-164.25	-96.42	6.900E+4	2.100E+7	-209.42

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	105.00	-16.0	0.0	-193.71	0.00	0.00
-0.90	105.00	-16.3	0.0	-193.71	0.00	0.00
-0.90	105.00	-16.3	0.0	-193.71	0.00	0.00
-0.80	105.00	-16.6	0.0	-193.71	0.00	0.00
-0.70	105.00	-16.9	0.0	-193.71	0.00	0.00
-0.60	105.00	-17.1	0.0	-193.71	0.00	0.00
-0.50	105.00	-17.4	0.0	-193.71	0.00	0.00
-0.40	105.00	-17.7	0.0	-193.71	0.00	0.00
-0.30	105.00	-18.0	0.0	-193.71	0.00	0.00
-0.20	105.00	-18.3	0.0	-193.71	0.00	0.00
-0.10	105.00	-18.6	0.0	-193.71	0.00	0.00
0.00	105.00	-18.8	0.0	-193.71	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\01\_BS 3\_LF1.vrb eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	105.00	-0.0139

Bodenkennwerte

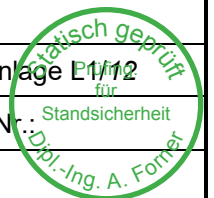
Schicht	UK	gam,k	gam',k	phi,k	c,k	d(p)/phi	d(a)/phi
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.24	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.64	17.00/17.00	8.50/8.50	22.50/22.50	3.00/3.00	-0.667	0.667
4	80.00	21.00/21.00	11.50/11.50	32.50/32.50	0.00/0.00	-0.667	0.667

Schnitt: Anlage L1	Schnitt 3L	Seite Anlage L1/11
Kapitel: 2	LF 2 (BS-T)	Archiv Nr. 11/11
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>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 &lt;&gt; 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>99.987</td><td>45.976</td><td>47.297</td><td>5.00</td><td>5.00</td></tr><tr><td>99.987</td><td>99.889</td><td>47.297</td><td>47.825</td><td>5.00</td><td>5.00</td></tr><tr><td>99.889</td><td>99.239</td><td>47.825</td><td>50.491</td><td>5.00</td><td>5.00</td></tr><tr><td>99.239</td><td>98.239</td><td>50.491</td><td>54.592</td><td>5.00</td><td>5.00</td></tr><tr><td>98.239</td><td>97.239</td><td>54.592</td><td>58.693</td><td>5.00</td><td>5.00</td></tr><tr><td>97.239</td><td>96.939</td><td>58.693</td><td>59.924</td><td>5.00</td><td>5.00</td></tr><tr><td>96.939</td><td>80.000</td><td>59.924</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	99.987	45.976	47.297	5.00	5.00	99.987	99.889	47.297	47.825	5.00	5.00	99.889	99.239	47.825	50.491	5.00	5.00	99.239	98.239	50.491	54.592	5.00	5.00	98.239	97.239	54.592	58.693	5.00	5.00	97.239	96.939	58.693	59.924	5.00	5.00	96.939	80.000	59.924	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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101.817	101.768	71.559	70.296	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
101.768	101.613	70.296	61.903	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
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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	99.987	45.976	47.297	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
99.987	99.889	47.297	47.825	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
99.889	99.239	47.825	50.491	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
99.239	98.239	50.491	54.592	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
98.239	97.239	54.592	58.693	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
97.239	96.939	58.693	59.924	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
96.939	80.000	59.924	129.400	5.00	5.00																																																																																																																																																																																																																																																																																																																																																
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																																		
0.00	0.00	106.24	102.55																																																																																																																																																																																																																																																																																																																																																		
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Vorgang: Genehmigungsstatik				Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																	

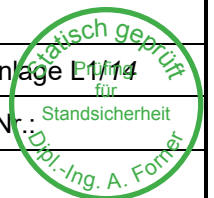


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 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 99.99 -98.54 -108.95 99.99 99.89 -108.95 -113.12 99.89 99.24 -113.12 -140.74 99.24 98.24 -140.74 -183.24 98.24 97.24 -183.24 -225.74 97.24 96.94 -225.74 -238.49 96.94 80.00 -238.49 -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 -193.7 105.00 -27.0 143.8 -30.3 104.74 -32.6 132.0 5.6 104.41 -39.8 117.2 46.7 104.41 -39.8 -4.9 46.7 104.40 -40.0 -5.2 46.6 104.24 -43.5 -10.3 45.4 103.74 -54.4 -26.3 36.2 103.60 -58.3 -30.7 32.3 103.48 -61.9 -34.7 28.3 103.47 -62.3 -35.1 27.8 103.35 -65.5 -38.7 23.7 103.33 -66.3 -39.6 22.5 103.23 -69.0 -42.7 18.6 103.22 -69.5 -43.1 18.0 103.11 -72.6 -46.7 13.1 102.98 -76.2 -50.6 7.1 102.96 -76.9 -51.5 5.8 102.95 -77.2 -51.7 5.3 102.86 -79.8 -54.6 0.5 102.66 -85.5 -61.0 -11.0 102.65 -85.7 -61.3 -11.5 102.64 -86.0 -61.6 -12.1 102.55 -88.8 -64.4 -17.6 102.55 -88.9 -64.5 -17.8 102.36 -94.3 -82.3 -31.6 102.22 -96.3 -93.8 -43.9 102.08 -97.7 -103.2 -57.7 102.06 -97.8 -104.3 -59.6 101.82 -98.6 -115.6 -86.9 101.77 -98.6 -117.0 -92.7 101.61 -97.9 -119.5 -111.0 101.19 -92.3 -111.8 -160.1</div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 11/13
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>101.14</div><div>-91.2</div><div>-109.5</div><div>-165.8</div></div><div><div>100.67</div><div>-77.6</div><div>-77.1</div><div>-210.5</div></div><div><div>100.23</div><div>-58.5</div><div>-30.2</div><div>-234.6</div></div><div><div>99.99</div><div>-45.4</div><div>1.8</div><div>-238.2</div></div><div><div>99.89</div><div>-39.6</div><div>15.9</div><div>-237.3</div></div><div><div>99.24</div><div>-8.5</div><div>89.2</div><div>-200.5</div></div><div><div>98.24</div><div>5.6</div><div>113.3</div><div>-90.8</div></div><div><div>97.24</div><div>-7.2</div><div>40.2</div><div>-6.2</div></div><div><div>96.94</div><div>-6.6</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>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>-0.3</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-14.0</div><div>-25.1</div><div>-9.3</div><div></div></div><div><div>105.24</div><div>-18.9</div><div>-34.3</div><div>-17.0</div><div></div></div><div><div>105.00</div><div>-23.5</div><div>-43.4</div><div>-26.3</div><div>-164.3</div></div><div><div>105.00</div><div>-23.5</div><div>120.9</div><div>-26.3</div><div></div></div><div><div>104.74</div><div>-28.4</div><div>110.7</div><div>3.8</div><div></div></div><div><div>104.41</div><div>-34.6</div><div>97.9</div><div>38.2</div><div></div></div><div><div>104.41</div><div>-34.6</div><div>-3.8</div><div>38.2</div><div></div></div><div><div>104.40</div><div>-34.8</div><div>-4.1</div><div>38.2</div><div></div></div><div><div>104.24</div><div>-37.8</div><div>-8.5</div><div>37.2</div><div></div></div><div><div>103.74</div><div>-47.3</div><div>-22.3</div><div>29.4</div><div></div></div><div><div>103.60</div><div>-50.7</div><div>-26.1</div><div>26.1</div><div></div></div><div><div>103.48</div><div>-53.8</div><div>-29.6</div><div>22.7</div><div></div></div><div><div>103.47</div><div>-54.1</div><div>-29.9</div><div>22.3</div><div></div></div><div><div>103.35</div><div>-56.9</div><div>-33.0</div><div>18.8</div><div></div></div><div><div>103.33</div><div>-57.7</div><div>-33.8</div><div>17.8</div><div></div></div><div><div>103.23</div><div>-60.0</div><div>-36.4</div><div>14.5</div><div></div></div><div><div>103.22</div><div>-60.4</div><div>-36.8</div><div>13.9</div><div></div></div><div><div>103.11</div><div>-63.1</div><div>-39.9</div><div>9.7</div><div></div></div><div><div>102.98</div><div>-66.3</div><div>-43.3</div><div>4.6</div><div></div></div><div><div>102.96</div><div>-66.9</div><div>-44.0</div><div>3.4</div><div></div></div><div><div>102.95</div><div>-67.1</div><div>-44.3</div><div>3.1</div><div></div></div><div><div>102.86</div><div>-69.4</div><div>-46.7</div><div>-1.0</div><div></div></div><div><div>102.66</div><div>-74.3</div><div>-52.2</div><div>-10.9</div><div></div></div><div><div>102.65</div><div>-74.5</div><div>-52.5</div><div>-11.3</div><div></div></div><div><div>102.64</div><div>-74.8</div><div>-52.8</div><div>-11.9</div><div></div></div><div><div>102.55</div><div>-77.2</div><div>-55.2</div><div>-16.6</div><div></div></div><div><div>102.55</div><div>-77.3</div><div>-55.3</div><div>-16.7</div><div></div></div><div><div>102.36</div><div>-82.0</div><div>-70.7</div><div>-28.6</div><div></div></div><div><div>102.22</div><div>-83.7</div><div>-80.7</div><div>-39.2</div><div></div></div><div><div>102.08</div><div>-85.0</div><div>-88.8</div><div>-51.0</div><div></div></div><div><div>102.06</div><div>-85.1</div><div>-89.8</div><div>-52.6</div><div></div></div><div><div>101.82</div><div>-85.8</div><div>-99.6</div><div>-76.2</div><div></div></div><div><div>101.77</div><div>-85.8</div><div>-100.9</div><div>-81.2</div><div></div></div><div><div>101.61</div><div>-85.2</div><div>-103.0</div><div>-97.0</div><div></div></div><div><div>101.19</div><div>-80.3</div><div>-96.4</div><div>-139.3</div><div></div></div><div><div>101.14</div><div>-79.4</div><div>-94.4</div><div>-144.2</div><div></div></div><div><div>100.67</div><div>-67.7</div><div>-66.4</div><div>-182.7</div><div></div></div><div><div>100.23</div><div>-51.2</div><div>-25.9</div><div>-203.5</div><div></div></div><div><div>99.99</div><div>-39.8</div><div>1.9</div><div>-206.5</div><div></div></div><div><div>99.89</div><div>-34.7</div><div>14.0</div><div>-205.7</div><div></div></div><div><div>99.24</div><div>-7.8</div><div>77.4</div><div>-173.7</div><div></div></div><div><div>98.24</div><div>4.4</div><div>98.2</div><div>-78.6</div><div></div></div><div><div>97.24</div><div>-6.9</div><div>34.8</div><div>-5.4</div><div></div></div><div><div>96.94</div><div>-6.4</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>-0.3</div><div>0.0</div><div></div></div><div><div>105.50</div><div>-14.0</div><div>-25.1</div><div>-9.3</div><div></div></div><div><div>105.24</div><div>-18.9</div><div>-34.3</div><div>-17.0</div><div></div></div><div><div>105.00</div><div>-23.5</div><div>-43.4</div><div>-26.3</div><div>-164.3</div></div><div><div>105.00</div><div>-23.5</div><div>120.9</div><div>-26.3</div><div></div></div><div><div>104.74</div><div>-28.4</div><div>110.7</div><div>3.8</div><div></div></div><div><div>104.41</div><div>-34.6</div><div>97.9</div><div>38.2</div><div></div></div></div></div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 11/14
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																															
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<table><tr><td>104.41</td><td>-34.6</td><td>-3.8</td><td>38.2</td><td></td></tr><tr><td>104.40</td><td>-34.8</td><td>-4.1</td><td>38.2</td><td></td></tr><tr><td>104.24</td><td>-37.8</td><td>-8.5</td><td>37.2</td><td></td></tr><tr><td>103.74</td><td>-47.3</td><td>-22.3</td><td>29.4</td><td></td></tr><tr><td>103.60</td><td>-50.7</td><td>-26.1</td><td>26.1</td><td></td></tr><tr><td>103.48</td><td>-53.8</td><td>-29.6</td><td>22.7</td><td></td></tr><tr><td>103.47</td><td>-54.1</td><td>-29.9</td><td>22.3</td><td></td></tr><tr><td>103.35</td><td>-56.9</td><td>-33.0</td><td>18.8</td><td></td></tr><tr><td>103.33</td><td>-57.7</td><td>-33.8</td><td>17.8</td><td></td></tr><tr><td>103.23</td><td>-60.0</td><td>-36.4</td><td>14.5</td><td></td></tr><tr><td>103.22</td><td>-60.4</td><td>-36.8</td><td>13.9</td><td></td></tr><tr><td>103.11</td><td>-63.1</td><td>-39.9</td><td>9.7</td><td></td></tr><tr><td>102.98</td><td>-66.3</td><td>-43.3</td><td>4.6</td><td></td></tr><tr><td>102.96</td><td>-66.9</td><td>-44.0</td><td>3.4</td><td></td></tr><tr><td>102.95</td><td>-67.1</td><td>-44.3</td><td>3.1</td><td></td></tr><tr><td>102.86</td><td>-69.4</td><td>-46.7</td><td>-1.0</td><td></td></tr><tr><td>102.66</td><td>-74.3</td><td>-52.2</td><td>-10.9</td><td></td></tr><tr><td>102.65</td><td>-74.5</td><td>-52.5</td><td>-11.3</td><td></td></tr><tr><td>102.64</td><td>-74.8</td><td>-52.8</td><td>-11.9</td><td></td></tr><tr><td>102.55</td><td>-77.2</td><td>-55.2</td><td>-16.6</td><td></td></tr><tr><td>102.55</td><td>-77.3</td><td>-55.3</td><td>-16.7</td><td></td></tr><tr><td>102.36</td><td>-82.0</td><td>-70.7</td><td>-28.6</td><td></td></tr><tr><td>102.22</td><td>-83.7</td><td>-80.7</td><td>-39.2</td><td></td></tr><tr><td>102.08</td><td>-85.0</td><td>-88.8</td><td>-51.0</td><td></td></tr><tr><td>102.06</td><td>-85.1</td><td>-89.8</td><td>-52.6</td><td></td></tr><tr><td>101.82</td><td>-85.8</td><td>-99.6</td><td>-76.2</td><td></td></tr><tr><td>101.77</td><td>-85.8</td><td>-100.9</td><td>-81.2</td><td></td></tr><tr><td>101.61</td><td>-85.2</td><td>-103.0</td><td>-97.0</td><td></td></tr><tr><td>101.19</td><td>-80.3</td><td>-96.4</td><td>-139.3</td><td></td></tr><tr><td>101.14</td><td>-79.4</td><td>-94.4</td><td>-144.2</td><td></td></tr><tr><td>100.67</td><td>-67.7</td><td>-66.4</td><td>-182.7</td><td></td></tr><tr><td>100.23</td><td>-51.2</td><td>-25.9</td><td>-203.5</td><td></td></tr><tr><td>99.99</td><td>-39.8</td><td>1.9</td><td>-206.5</td><td></td></tr><tr><td>99.89</td><td>-34.7</td><td>14.0</td><td>-205.7</td><td></td></tr><tr><td>99.24</td><td>-7.8</td><td>77.4</td><td>-173.7</td><td></td></tr><tr><td>98.24</td><td>4.4</td><td>98.2</td><td>-78.6</td><td></td></tr><tr><td>97.24</td><td>-6.9</td><td>34.8</td><td>-5.4</td><td></td></tr><tr><td>96.94</td><td>-6.4</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>105.50</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>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-83.4</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>104.40</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>103.60</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><tr><td>102.55</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.36</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.22</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>						104.41	-34.6	-3.8	38.2		104.40	-34.8	-4.1	38.2		104.24	-37.8	-8.5	37.2		103.74	-47.3	-22.3	29.4		103.60	-50.7	-26.1	26.1		103.48	-53.8	-29.6	22.7		103.47	-54.1	-29.9	22.3		103.35	-56.9	-33.0	18.8		103.33	-57.7	-33.8	17.8		103.23	-60.0	-36.4	14.5		103.22	-60.4	-36.8	13.9		103.11	-63.1	-39.9	9.7		102.98	-66.3	-43.3	4.6		102.96	-66.9	-44.0	3.4		102.95	-67.1	-44.3	3.1		102.86	-69.4	-46.7	-1.0		102.66	-74.3	-52.2	-10.9		102.65	-74.5	-52.5	-11.3		102.64	-74.8	-52.8	-11.9		102.55	-77.2	-55.2	-16.6		102.55	-77.3	-55.3	-16.7		102.36	-82.0	-70.7	-28.6		102.22	-83.7	-80.7	-39.2		102.08	-85.0	-88.8	-51.0		102.06	-85.1	-89.8	-52.6		101.82	-85.8	-99.6	-76.2		101.77	-85.8	-100.9	-81.2		101.61	-85.2	-103.0	-97.0		101.19	-80.3	-96.4	-139.3		101.14	-79.4	-94.4	-144.2		100.67	-67.7	-66.4	-182.7		100.23	-51.2	-25.9	-203.5		99.99	-39.8	1.9	-206.5		99.89	-34.7	14.0	-205.7		99.24	-7.8	77.4	-173.7		98.24	4.4	98.2	-78.6		97.24	-6.9	34.8	-5.4		96.94	-6.4	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		105.50	0.0	0.0	0.0		105.24	0.0	0.0	0.0		105.00	0.0	0.0	0.0	-83.4	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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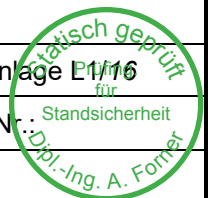
Statisch geprüft für Standsicherheit

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>106.24</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-16.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-15.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.29</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.19</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.24</td><td>-11.8</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	99.99	0.0	0.0	0.0	99.89	0.0	0.0	0.0	99.24	0.0	0.0	0.0	98.24	0.0	0.0	0.0	97.24	0.0	0.0	0.0	96.94	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-19.5	-	-	-	106.23	-19.4	-	-	-	106.23	-19.4	-	-	-	106.18	-19.3	-	-	-	105.55	-17.7	-	-	-	105.50	-17.6	-	-	-	105.50	-17.6	-	-	-	105.45	-17.5	-	-	-	105.29	-17.1	-	-	-	105.24	-16.9	-	-	-	105.24	-16.9	-	-	-	105.19	-16.8	-	-	-	105.05	-16.4	-	-	-	105.00	-16.3	-	-	-	105.00	-16.3	-	-	-	104.95	-16.2	-	-	-	104.79	-15.8	-	-	-	104.74	-15.7	-	-	-	104.74	-15.7	-	-	-	104.69	-15.5	-	-	-	104.46	-14.9	-	-	-	104.41	-14.8	-	-	-	104.41	-14.8	-	-	-	104.40	-14.8	-	-	-	104.40	-14.8	-	-	-	104.35	-14.7	-	-	-	104.29	-14.5	-	-	-	104.24	-14.4	-	-	-	104.24	-14.4	-	-	-	104.19	-14.3	-	-	-	103.79	-13.2	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.65	-12.9	-	-	-	103.60	-12.8	-	-	-	103.60	-12.8	-	-	-	103.54	-12.6	-	-	-	103.54	-12.6	-	-	-	103.48	-12.4	-	-	-	103.48	-12.4	-	-	-	103.47	-12.4	-	-	-	103.47	-12.4	-	-	-	103.41	-12.3	-	-	-	103.41	-12.3	-	-	-	103.35	-12.1	-	-	-	103.35	-12.1	-	-	-	103.33	-12.0	-	-	-	103.33	-12.0	-	-	-	103.28	-11.9	-	-	-	103.24	-11.8	-	-	-
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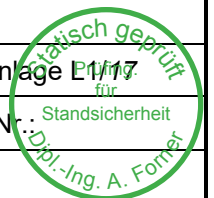
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102.55	-10.0	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.55	-10.0	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.55	-10.0	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.55	-10.0	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.50	-9.9	0.00	0.00	3.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.41	-9.7	1.01	9.74	9.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.36	-9.5	1.01	9.61	12.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.36	-9.5	1.36	12.98	12.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.32	-9.4	1.36	12.82	16.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.27	-9.3	2.09	19.40	19.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-9.2	2.09	19.15	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-9.2	2.46	22.62	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-9.1	2.46	22.32	25.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-8.9	3.25	29.04	29.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-8.8	3.25	28.65	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-8.8	3.66	32.25	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.8	3.66	32.08	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.8	3.82	33.51	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.02	-8.6	3.82	33.03	36.93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.87	-8.3	5.71	47.20	47.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-8.1	5.71	46.48	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-8.1	6.22	50.62	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-8.0	6.22	49.84	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-8.0	6.75	54.04	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.72	-7.9	6.75	53.16	57.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.66	-7.7	7.89	61.17	61.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-7.6	7.89	60.14	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-7.6	8.49	64.73	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.56	-7.5	8.49	63.62	68.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-6.7	13.40	89.99	89.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-6.6	13.40	88.29	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-6.6	14.21	93.60	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-6.5	14.21	91.80	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-6.5	15.05	97.21	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-6.3	15.05	95.31	100.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.72	-5.5	23.03	126.08	126.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-5.4	23.03	123.32	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-5.4	24.22	129.69	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.62	-5.2	24.22	126.99	133.07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.28	-4.5	34.96	156.76	156.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.23	-4.4	34.96	153.08	160.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage L1    Schnitt 3L			Seite Anlage L1/17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Kapitel:		2                    LF 2 (BS-T)			Archiv Nr.: 1117																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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

100.23	-4.4	36.57	160.14	160.13
100.18	-4.3	36.57	156.32	163.52
100.04	-4.0	43.79	173.67	173.67
99.99	-3.9	43.79	169.25	177.05
99.99	-3.9	45.81	177.06	177.05
99.94	-3.8	45.81	172.47	180.43
99.94	-3.8	47.92	180.44	180.43
99.89	-3.7	47.92	175.68	183.81
99.89	-3.7	50.00	183.30	183.81
99.84	-3.6	50.00	178.28	187.27
99.29	-2.5	50.00	125.81	225.25
99.24	-2.4	50.00	121.28	228.71
99.24	-2.4	50.00	121.28	228.71
99.19	-2.3	50.00	116.78	232.16
98.29	-0.8	50.00	41.13	294.31
98.24	-0.7	50.00	37.15	297.77
98.24	-0.7	50.00	37.15	297.77
98.19	-0.7	50.00	33.19	301.22
97.29	0.7	50.00	-36.33	363.38
97.24	0.8	50.00	-40.14	366.83
97.24	0.8	50.00	-40.14	366.83
97.19	0.9	50.00	-43.96	370.28
96.99	1.2	50.00	-59.20	384.09
96.94	1.3	50.00	-63.01	387.55

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k}$ : -0.08734185  
Theoretischer Fußpunkt = 96.939 m

Einbindetiefe  $t_g$  = 5.61 m  
Profillänge = 9.30 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{i,k} - G'_{i,k} + E_{av,k} \geq B_{v,k}$   
 $G_{i,k}$  = 175.98 kN/m  
 $G'_{i,k}$  = 0.00 kN/m  
 $P_{v,k}$  = 0.00 kN/m  
 $E_{av,k}$  = 75.40 kN/m ( $E_{ah,k}$  = 418.30 kN/m)  
 $B_{v,k}$  = 168.23  
Summe  $V_{i,k}$  = 83.16 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 97.82 bis 94.30 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	96.94	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.94 m = 1.000 m²/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d}$  =  $\eta(s) \cdot R_{s1,k} / \gamma_{(q_{s,k})}$  =  $1.000 \cdot 308.55 / 1.40$  = 220.39 kN/m  
 $R_{i,d}$  =  $R_{b,d} + R_{s1,d}$  = 1085.44 kN/m

Einwirkungen  
 $V_{i,d}$  =  $G_{i,d} - G'_{i,k} + E_{av,d} + P_{v,d}$  =  $211.18 - 0.00 + 86.71 + 0.00$  = 297.89 kN/m  
 $\Rightarrow \mu = V_{i,d} / R_{i,d}$  =  $297.89 / 1085.44$  = 0.27

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage L1	Schnitt 3L	Seite Anlage L1/18
Kapitel: 2	LF 2 (BS-T)	Archiv Nr.: 11/18
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 3 Datei: 03_BS3_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 = 106.24 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-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 2 0.00 29.50 105.50 102.55 Ständig</div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/19
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/19
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	105.70	-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 automatisch und Fuß gebettet  
Profillänge = 9.20 m

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

Ausnutzungsgrad mue = 442.625 / 451.840 = 0.980  
Bettungslager Bh,d = 442.625 kN/m  
Erdwiderstand Eph,d = 451.840 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	-236.76	-205.88	-205.88	-122.65	3.900E+7	2.100E+7	-262.50 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	-15.0	0.0	-242.89	0.00	0.00
-7.47	103.72	-15.0	0.0	-242.89	0.00	0.00
-7.47	103.72	-15.0	0.0	-242.89	0.00	0.00
-6.64	103.72	-15.0	0.0	-242.89	0.00	0.00
-5.81	103.72	-15.0	0.0	-242.89	0.00	0.00
-4.98	103.72	-15.0	0.0	-242.89	0.00	0.00
-4.15	103.72	-15.0	0.0	-242.89	0.00	0.00
-3.32	103.72	-15.0	0.0	-242.89	0.00	0.00
-2.49	103.72	-15.1	0.0	-242.89	0.00	0.00
-1.66	103.72	-15.1	0.0	-242.89	0.00	0.00
-0.83	103.72	-15.1	0.0	-242.89	0.00	0.00
0.00	103.72	-15.1	0.0	-242.89	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 3\Linkes Ufer\02\_BS 3\_LF2.vrb  
eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0131

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 L1	Schnitt 3L	Seite Anlage L1/20
Kapitel: 3	LF 3 (BS-T)	Archiv Nr. 11/20
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 &lt;&gt; 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>100.231</td><td>43.598</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>99.239</td><td>47.825</td><td>50.491</td><td>0.00</td><td>0.00</td></tr><tr><td>99.239</td><td>98.239</td><td>50.491</td><td>54.592</td><td>0.00</td><td>0.00</td></tr><tr><td>98.239</td><td>97.239</td><td>54.592</td><td>58.693</td><td>0.00</td><td>0.00</td></tr><tr><td>97.239</td><td>97.039</td><td>58.693</td><td>59.514</td><td>0.00</td><td>0.00</td></tr><tr><td>97.039</td><td>80.000</td><td>59.514</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	100.231	43.598	45.976	0.00	0.00	100.231	99.889	45.976	47.825	0.00	0.00	99.889	99.239	47.825	50.491	0.00	0.00	99.239	98.239	50.491	54.592	0.00	0.00	98.239	97.239	54.592	58.693	0.00	0.00	97.239	97.039	58.693	59.514	0.00	0.00	97.039	80.000	59.514	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]	[-]	[-]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																									
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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																																																																																																																																																																																																																																																																																																																																										
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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	100.231	43.598	45.976	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
100.231	99.889	45.976	47.825	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
99.889	99.239	47.825	50.491	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
99.239	98.239	50.491	54.592	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
98.239	97.239	54.592	58.693	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
97.239	97.039	58.693	59.514	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
97.039	80.000	59.514	129.400	0.00	0.00																																																																																																																																																																																																																																																																																																																																										
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[kN/m²]	[kN/m²]	[mNHN]	[mNHN]																																																																																																																																																																																																																																																																																																																																												
0.00	0.00	106.24	102.55																																																																																																																																																																																																																																																																																																																																												
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Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																											



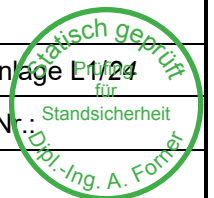
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpgh kpch phi,k delta theta [-] [mNHN] [-] [-] [°] [°] [°] 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 99.89 -98.54 -113.12 99.89 99.24 -113.12 -140.74 99.24 98.24 -140.74 -183.24 98.24 97.24 -183.24 -225.74 97.24 97.04 -225.74 -234.24 97.04 80.00 -234.24 -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 -242.9 103.72 -80.0 89.7 -129.8 103.60 -84.0 84.3 -119.7 103.48 -88.9 76.3 -109.7 103.47 -89.4 75.3 -108.7 103.35 -94.7 64.6 -100.9 103.33 -96.2 61.3 -99.0 103.23 -101.4 49.6 -93.7 103.22 -102.3 47.6 -93.0 103.11 -108.7 32.5 -88.6 102.98 -116.2 14.8 -85.7 102.96 -117.7 11.1 -85.4 102.95 -118.3 9.8 -85.3 102.86 -123.8 -3.5 -85.0 102.66 -136.5 -34.7 -88.7 102.65 -137.1 -36.2 -89.0 102.64 -137.8 -37.9 -89.4 102.55 -144.0 -48.8 -93.2 102.55 -144.2 -49.3 -93.4 102.36 -149.6 -65.9 -104.2 102.22 -151.6 -76.6 -114.2 102.08 -153.0 -85.2 -125.5 102.06 -153.1 -86.2 -127.1 101.82 -154.0 -96.1 -149.8 101.77 -153.9 -97.3 -154.5 101.61 -153.2 -98.9 -169.8 101.19 -147.7 -88.9 -209.7</div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/22
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/22
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>101.14 -146.6 -86.3 -214.3</div><div>100.67 -133.1 -51.5 -247.4</div><div>100.23 -114.1 -2.7 -259.9</div><div>99.89 -95.5 44.1 -252.9</div><div>99.24 -70.1 106.4 -201.4</div><div>98.24 -64.2 115.1 -82.4</div><div>97.24 -75.0 28.4 -2.9</div><div>97.04 -73.5 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>106.24 0.0 0.0 0.0</div><div>106.23 -0.2 0.0 0.0</div><div>105.70 -10.2 -1.4 -0.2</div><div>105.70 -31.0 -1.4 -13.5</div><div>105.50 -34.8 -2.6 -13.9</div><div>105.24 -39.7 -5.1 -14.9</div><div>104.74 -49.2 -13.7 -19.4</div><div>104.41 -55.4 -16.7 -24.4</div><div>104.41 -55.4 -118.4 -24.4</div><div>104.24 -58.6 -120.4 -44.7</div><div>103.74 -68.1 -128.0 -106.7</div><div>103.72 -68.7 -128.8 -109.3 -205.9</div><div>103.72 -68.7 77.1 -109.3</div><div>103.60 -72.2 72.4 -100.5</div><div>103.48 -76.4 65.4 -91.9</div><div>103.47 -76.9 64.5 -91.1</div><div>103.35 -81.5 55.3 -84.4</div><div>103.33 -82.8 52.4 -82.8</div><div>103.23 -87.3 42.2 -78.3</div><div>103.22 -88.0 40.5 -77.7</div><div>103.11 -93.7 27.3 -74.0</div><div>102.98 -100.1 12.0 -71.6</div><div>102.96 -101.5 8.7 -71.3</div><div>102.95 -101.9 7.6 -71.2</div><div>102.86 -106.8 -4.0 -71.1</div><div>102.66 -117.8 -31.1 -74.5</div><div>102.65 -118.3 -32.4 -74.8</div><div>102.64 -118.9 -33.9 -75.1</div><div>102.55 -124.3 -43.4 -78.5</div><div>102.55 -124.5 -43.8 -78.6</div><div>102.36 -129.2 -58.2 -88.2</div><div>102.22 -130.9 -67.5 -97.0</div><div>102.08 -132.2 -75.0 -107.0</div><div>102.06 -132.3 -75.8 -108.4</div><div>101.82 -133.0 -84.4 -128.3</div><div>101.77 -133.0 -85.5 -132.5</div><div>101.61 -132.4 -86.9 -145.9</div><div>101.19 -127.6 -78.2 -181.0</div><div>101.14 -126.6 -75.9 -185.0</div><div>100.67 -114.9 -45.6 -214.2</div><div>100.23 -98.4 -2.9 -225.3</div><div>99.89 -82.3 37.9 -219.5</div><div>99.24 -60.3 92.2 -174.9</div><div>98.24 -55.2 100.0 -71.6</div><div>97.24 -64.7 24.7 -2.5</div><div>97.04 -63.4 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>106.24 0.0 0.0 0.0</div><div>106.23 -0.2 0.0 0.0</div><div>105.70 -10.2 -1.4 -0.2</div><div>105.70 -31.0 -1.4 -13.5</div><div>105.50 -34.8 -2.6 -13.9</div><div>105.24 -39.7 -5.1 -14.9</div><div>104.74 -49.2 -13.7 -19.4</div><div>104.41 -55.4 -16.7 -24.4</div><div>104.41 -55.4 -118.4 -24.4</div></div></div></div> <tr><td colspan="2">Schnitt: Anlage L1 Schnitt 3L</td><td>Seite Anlage L1/23</td></tr> <tr><td colspan="2">Kapitel: 3 LF 3 (BS-T)</td><td>Archiv Nr.: 11/23</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/23	Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/23	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/23									
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/23									
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025									

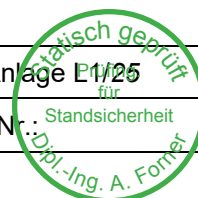


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>104.24 -58.6 -120.4 -44.7</div><div>103.74 -68.1 -128.0 -106.7</div><div>103.72 -68.7 -128.8 -109.3 -205.9</div><div>103.72 -68.7 77.1 -109.3</div><div>103.60 -72.2 72.4 -100.5</div><div>103.48 -76.4 65.4 -91.9</div><div>103.47 -76.9 64.5 -91.1</div><div>103.35 -81.5 55.3 -84.4</div><div>103.33 -82.8 52.4 -82.8</div><div>103.23 -87.3 42.2 -78.3</div><div>103.22 -88.0 40.5 -77.7</div><div>103.11 -93.7 27.3 -74.0</div><div>102.98 -100.1 12.0 -71.6</div><div>102.96 -101.5 8.7 -71.3</div><div>102.95 -101.9 7.6 -71.2</div><div>102.86 -106.8 -4.0 -71.1</div><div>102.66 -117.8 -31.1 -74.5</div><div>102.65 -118.3 -32.4 -74.8</div><div>102.64 -118.9 -33.9 -75.1</div><div>102.55 -124.3 -43.4 -78.5</div><div>102.55 -124.5 -43.8 -78.6</div><div>102.36 -129.2 -58.2 -88.2</div><div>102.22 -130.9 -67.5 -97.0</div><div>102.08 -132.2 -75.0 -107.0</div><div>102.06 -132.3 -75.8 -108.4</div><div>101.82 -133.0 -84.4 -128.3</div><div>101.77 -133.0 -85.5 -132.5</div><div>101.61 -132.4 -86.9 -145.9</div><div>101.19 -127.6 -78.2 -181.0</div><div>101.14 -126.6 -75.9 -185.0</div><div>100.67 -114.9 -45.6 -214.2</div><div>100.23 -98.4 -2.9 -225.3</div><div>99.89 -82.3 37.9 -219.5</div><div>99.24 -60.3 92.2 -174.9</div><div>98.24 -55.2 100.0 -71.6</div><div>97.24 -64.7 24.7 -2.5</div><div>97.04 -63.4 0.0 0.0</div></div></div> <div><div>Schnittgrößen (q,k)</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>106.24</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>-122.6</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>102.55</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.36</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>102.22</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><div><div>Schnitt:</div><div>Anlage L1</div><div>Schnitt 3L</div></div><div><div>Seite Anlage L1/24</div><div>11/24</div></div></div> <div><div><div>Kapitel:</div><div>3</div><div>LF 3 (BS-T)</div></div><div><div>Archiv Nr.:</div><div>11/24</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><div>Statisch geprüft</div><div>für</div><div>Standicherheit</div><div>Dipl.-Ing. A. Forner</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>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>99.89</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.24</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>98.24</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.24</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.04</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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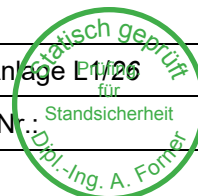
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td>61.17</td><td>61.17</td><td></td><td></td></tr><tr><td>101.61</td><td>-7.3</td><td>8.26</td><td>60.06</td><td>64.73</td><td></td><td></td></tr><tr><td>101.61</td><td>-7.3</td><td>8.91</td><td>64.73</td><td>64.73</td><td></td><td></td></tr><tr><td>101.56</td><td>-7.1</td><td>8.91</td><td>63.53</td><td>68.34</td><td></td><td></td></tr><tr><td>101.25</td><td>-6.3</td><td>14.20</td><td>89.99</td><td>89.99</td><td></td><td></td></tr><tr><td>101.19</td><td>-6.2</td><td>14.20</td><td>88.15</td><td>93.60</td><td></td><td></td></tr><tr><td>101.19</td><td>-6.2</td><td>15.07</td><td>93.60</td><td>93.60</td><td></td><td></td></tr><tr><td>101.14</td><td>-6.1</td><td>15.07</td><td>91.66</td><td>97.21</td><td></td><td></td></tr><tr><td>101.14</td><td>-6.1</td><td>15.99</td><td>97.21</td><td>97.21</td><td></td><td></td></tr><tr><td>101.09</td><td>-6.0</td><td>15.99</td><td>95.16</td><td>100.81</td><td></td><td></td></tr><tr><td>100.72</td><td>-5.1</td><td>24.80</td><td>126.08</td><td>126.08</td><td></td><td></td></tr><tr><td>100.67</td><td>-5.0</td><td>24.80</td><td>123.09</td><td>129.68</td><td></td><td></td></tr><tr><td>100.67</td><td>-5.0</td><td>26.13</td><td>129.69</td><td>129.68</td><td></td><td></td></tr><tr><td>100.62</td><td>-4.9</td><td>26.13</td><td>126.76</td><td>133.07</td><td></td><td></td></tr><tr><td>100.28</td><td>-4.1</td><td>38.31</td><td>156.76</td><td>156.75</td><td></td><td></td></tr><tr><td>100.23</td><td>-4.0</td><td>38.31</td><td>152.74</td><td>160.13</td><td></td><td></td></tr></table>							103.23	-11.7	-	-	-			103.23	-11.7	-	-	-			103.22	-11.7	-	-	-			103.22	-11.7	-	-	-			103.16	-11.5	-	-	-			103.16	-11.5	-	-	-			103.11	-11.3	-	-	-			103.11	-11.3	-	-	-			103.04	-11.2	-	-	-			103.04	-11.2	-	-	-			102.98	-11.0	-	-	-			102.98	-11.0	-	-	-			102.96	-10.9	-	-	-			102.96	-10.9	-	-	-			102.95	-10.9	-	-	-			102.95	-10.9	-	-	-			102.90	-10.8	-	-	-			102.90	-10.8	-	-	-			102.86	-10.6	-	-	-			102.86	-10.6	-	-	-			102.80	-10.5	-	-	-			102.70	-10.2	-	-	-			102.66	-10.1	-	-	-			102.66	-10.1	-	-	-			102.65	-10.1	-	-	-			102.65	-10.1	-	-	-			102.64	-10.0	-	-	-			102.64	-10.0	-	-	-			102.60	-9.9	-	-	-			102.60	-9.9	-	-	-			102.55	-9.8	-	-	-			102.55	-9.8	-	-	-			102.55	-9.8	0.00	0.00	0.00			102.55	-9.8	0.00	0.00	0.00			102.50	-9.7	0.00	0.00	3.25			102.41	-9.4	1.04	9.74	9.74			102.36	-9.3	1.04	9.60	12.98			102.36	-9.3	1.40	12.98	12.98			102.32	-9.1	1.40	12.80	16.19			102.27	-9.0	2.15	19.40	19.40			102.22	-8.9	2.15	19.13	22.62			102.22	-8.9	2.54	22.62	22.62			102.18	-8.8	2.54	22.29	25.83			102.13	-8.6	3.36	29.04	29.04			102.08	-8.5	3.36	28.62	32.25			102.08	-8.5	3.79	32.25	32.25			102.06	-8.5	3.79	32.06	33.51			102.06	-8.5	3.96	33.51	33.51			102.02	-8.3	3.96	32.99	36.93			101.87	-7.9	5.95	47.20	47.20			101.82	-7.8	5.95	46.42	50.62			101.82	-7.8	6.49	50.62	50.62			101.77	-7.7	6.49	49.78	54.04			101.77	-7.7	7.04	54.04	54.04			101.72	-7.5	7.04	53.09	57.60			101.66	-7.4	8.26	61.17	61.17			101.61	-7.3	8.26	60.06	64.73			101.61	-7.3	8.91	64.73	64.73			101.56	-7.1	8.91	63.53	68.34			101.25	-6.3	14.20	89.99	89.99			101.19	-6.2	14.20	88.15	93.60			101.19	-6.2	15.07	93.60	93.60			101.14	-6.1	15.07	91.66	97.21			101.14	-6.1	15.99	97.21	97.21			101.09	-6.0	15.99	95.16	100.81			100.72	-5.1	24.80	126.08	126.08			100.67	-5.0	24.80	123.09	129.68			100.67	-5.0	26.13	129.69	129.68			100.62	-4.9	26.13	126.76	133.07			100.28	-4.1	38.31	156.76	156.75			100.23	-4.0	38.31	152.74	160.13		
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102.32	-9.1	1.40	12.80	16.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.27	-9.0	2.15	19.40	19.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-8.9	2.15	19.13	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.22	-8.9	2.54	22.62	22.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.18	-8.8	2.54	22.29	25.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.13	-8.6	3.36	29.04	29.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-8.5	3.36	28.62	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.08	-8.5	3.79	32.25	32.25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.5	3.79	32.06	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.5	3.96	33.51	33.51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.02	-8.3	3.96	32.99	36.93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.87	-7.9	5.95	47.20	47.20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-7.8	5.95	46.42	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.82	-7.8	6.49	50.62	50.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-7.7	6.49	49.78	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.77	-7.7	7.04	54.04	54.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.72	-7.5	7.04	53.09	57.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.66	-7.4	8.26	61.17	61.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-7.3	8.26	60.06	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.61	-7.3	8.91	64.73	64.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.56	-7.1	8.91	63.53	68.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.25	-6.3	14.20	89.99	89.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-6.2	14.20	88.15	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.19	-6.2	15.07	93.60	93.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-6.1	15.07	91.66	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.14	-6.1	15.99	97.21	97.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-6.0	15.99	95.16	100.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.72	-5.1	24.80	126.08	126.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-5.0	24.80	123.09	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.67	-5.0	26.13	129.69	129.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.62	-4.9	26.13	126.76	133.07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.28	-4.1	38.31	156.76	156.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.23	-4.0	38.31	152.74	160.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage L1 Schnitt 3L			Seite Anlage L1/26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>100.23-4.040.16160.14160.13</div><div>100.18-3.940.16155.97163.52</div><div>99.94-3.450.00168.89180.43</div><div>99.89-3.350.00163.97183.81</div><div>99.89-3.350.00163.97183.81</div><div>99.84-3.250.00159.00187.27</div><div>99.29-2.150.00107.18225.25</div><div>99.24-2.150.00102.72228.70</div><div>99.24-2.150.00102.72228.70</div><div>99.19-2.050.0098.29232.16</div><div>98.29-0.550.0023.73294.31</div><div>98.24-0.450.0019.80297.77</div><div>98.24-0.450.0019.80297.77</div><div>98.19-0.350.0015.89301.22</div><div>97.291.150.00-53.00363.38</div><div>97.241.150.00-56.79366.83</div><div>97.241.150.00-56.79366.83</div><div>97.191.250.00-60.58370.28</div><div>97.091.450.00-68.15377.19</div><div>97.041.450.00-71.94380.64</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.08683076</div><div>Theoretischer Fußpunkt = 97.039 m</div></div><div><div>Einbindetiefe tg = 5.51 m</div><div>Profillänge = 9.20 m</div></div><div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G<sub>k</sub> - G<sub>k</sub>' + Eav,k &gt;= Bv,k</div><div>G<sub>k</sub> = 174.09 kN/m</div><div>G<sub>k</sub>' = 0.00 kN/m</div><div>Pv,k = 20.80 kN/m</div><div>Eav,k = 78.14 kN/m (Eah,k = 455.84 kN/m)</div><div>Bv,k = 153.34</div><div>Summe V<sub>k</sub> = 119.70 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 97.92 bis 94.40 m) ==&gt; 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>97.04</div><div>55.00</div><div>s3: Flussskies, -sand</div></div><div>Mantelfläche bis 97.04 m = 1.000 m²/m/m ==&gt; R<sub>s1,d</sub></div><div>R<sub>s1,d</sub> = eta(s) · R<sub>s1,k</sub> / gamma(qs,k) = 1.000 · 303.05 / 1.40 = 216.46 kN/m</div><div>R<sub>d</sub> = Rb,d + R<sub>s1,d</sub> = 1081.51 kN/m</div></div><div><div>Einwirkungen</div><div>V<sub>d</sub> = G<sub>d</sub> - G<sub>k</sub>' + Eav,d + Pv,d = 208.91 - 0.00 + 89.86 + 24.96 = 323.73 kN/m</div><div>==&gt; µ = V<sub>d</sub> / R<sub>d</sub> = 323.73 / 1081.51 = 0.30</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/27
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/27
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 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: 04_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 L1 Schnitt 3L		Seite Anlage L1/28
Kapitel: 4 LF 4 (BS-P)		Archiv Nr. 11/28
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]	[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 automatisch und Fuß gebettet  
Profillänge = 9.80 m

Bettungsmodule  
von bis ks(oben) ks(unten)  
[mNHN] [mNHN] [MN/m³] [MN/m³]  
102.55 80.00 45.000 45.000

Ausnutzungsgrad  $\mu_e = 559.988 / 572.848 = 0.978$   
Bettungslager  $B_{h,d} = 559.988 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 572.848 \text{ kN/m}$

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	-217.60	-170.66	-170.66	-123.37	3.900E+7	2.100E+7	-217.60 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	-16.7	0.0	-226.85	0.00	0.00
-7.47	103.72	-16.7	0.0	-226.85	0.00	0.00
-7.47	103.72	-16.7	0.0	-226.85	0.00	0.00
-6.64	103.72	-16.7	0.0	-226.85	0.00	0.00
-5.81	103.72	-16.7	0.0	-226.85	0.00	0.00
-4.98	103.72	-16.7	0.0	-226.85	0.00	0.00
-4.15	103.72	-16.7	0.0	-226.85	0.00	0.00
-3.32	103.72	-16.7	0.0	-226.85	0.00	0.00
-2.49	103.72	-16.7	0.0	-226.85	0.00	0.00
-1.66	103.72	-16.7	0.0	-226.85	0.00	0.00
-0.83	103.72	-16.7	0.0	-226.85	0.00	0.00
0.00	103.72	-16.7	0.0	-226.85	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\02\_BS 3\_LF2.vrb  
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0131

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 L1 Schnitt 3L	Seite Anlage L1/29
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 &gt; 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</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>105.24</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 Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</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>106.240</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>100.280</td><td>42.321</td><td>44.181</td><td>0.00</td><td>0.00</td></tr><tr><td>100.280</td><td>100.231</td><td>44.181</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>99.239</td><td>46.042</td><td>48.708</td><td>0.00</td><td>0.00</td></tr><tr><td>99.239</td><td>98.239</td><td>48.708</td><td>52.809</td><td>0.00</td><td>0.00</td></tr><tr><td>98.239</td><td>97.239</td><td>52.809</td><td>56.910</td><td>0.00</td><td>0.00</td></tr><tr><td>97.239</td><td>96.439</td><td>56.910</td><td>60.191</td><td>0.00</td><td>0.00</td></tr><tr><td>96.439</td><td>80.000</td><td>60.191</td><td>127.616</td><td>0.00</td><td>0.00</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>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	100.280	42.321	44.181	0.00	0.00	100.280	100.231	44.181	44.414	0.00	0.00	100.231	99.889	44.414	46.042	0.00	0.00	99.889	99.239	46.042	48.708	0.00	0.00	99.239	98.239	48.708	52.809	0.00	0.00	98.239	97.239	52.809	56.910	0.00	0.00	97.239	96.439	56.910	60.191	0.00	0.00	96.439	80.000	60.191	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°)																																																																																																																																																																																																																																																																																																																																														
[-]	[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																																																																																																																																																																																																																																																																																																																																														
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[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	142.042	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	100.280	42.321	44.181	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.280	100.231	44.181	44.414	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
100.231	99.889	44.414	46.042	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.889	99.239	46.042	48.708	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
99.239	98.239	48.708	52.809	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
98.239	97.239	52.809	56.910	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
97.239	96.439	56.910	60.191	0.00	0.00																																																																																																																																																																																																																																																																																																																																																
96.439	80.000	60.191	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 L1	Schnitt 3L	Seite Anlage L1/30																																																																																																																																																																																																																																																																																																																																																	
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>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>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)</div> <div>Teilsicherheit Erdwiderstand = 1.40</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>102.55</td><td>102.55</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>102.36</td><td>-11.33</td><td>-18.74</td></tr><tr><td>102.36</td><td>102.22</td><td>-18.74</td><td>-24.25</td></tr><tr><td>102.22</td><td>102.13</td><td>-24.25</td><td>-27.92</td></tr><tr><td>102.13</td><td>102.08</td><td>-27.92</td><td>-29.75</td></tr><tr><td>102.08</td><td>102.06</td><td>-29.75</td><td>-30.47</td></tr><tr><td>102.06</td><td>101.77</td><td>-30.47</td><td>-42.21</td></tr><tr><td>101.77</td><td>101.61</td><td>-42.21</td><td>-48.31</td></tr><tr><td>101.61</td><td>101.19</td><td>-48.31</td><td>-64.81</td></tr><tr><td>101.19</td><td>101.14</td><td>-64.81</td><td>-66.87</td></tr><tr><td>101.14</td><td>100.67</td><td>-66.87</td><td>-85.43</td></tr><tr><td>100.67</td><td>100.28</td><td>-85.43</td><td>-100.90</td></tr><tr><td>100.28</td><td>100.23</td><td>-100.90</td><td>-102.83</td></tr><tr><td>100.23</td><td>99.89</td><td>-102.83</td><td>-116.36</td></tr><tr><td>99.89</td><td>99.24</td><td>-116.36</td><td>-142.01</td></tr><tr><td>99.24</td><td>98.24</td><td>-142.01</td><td>-181.48</td></tr><tr><td>98.24</td><td>97.24</td><td>-181.48</td><td>-220.94</td></tr><tr><td>97.24</td><td>96.44</td><td>-220.94</td><td>-252.51</td></tr><tr><td>96.44</td><td>80.00</td><td>-252.51</td><td>-901.29</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>106.24</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.23</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.70</td><td>-13.0</td><td>-1.7</td><td>-0.3</td><td></td></tr><tr><td>105.70</td><td>-41.1</td><td>-1.7</td><td>-18.3</td><td></td></tr><tr><td>105.50</td><td>-45.9</td><td>-3.3</td><td>-18.8</td><td></td></tr><tr><td>105.24</td><td>-52.2</td><td>-6.5</td><td>-20.0</td><td></td></tr><tr><td>104.74</td><td>-64.3</td><td>-17.5</td><td>-25.7</td><td></td></tr><tr><td>104.41</td><td>-72.2</td><td>-21.3</td><td>-32.1</td><td></td></tr><tr><td>104.41</td><td>-72.2</td><td>-158.6</td><td>-32.1</td><td></td></tr><tr><td>104.24</td><td>-76.3</td><td>-161.2</td><td>-59.3</td><td></td></tr><tr><td>103.74</td><td>-88.4</td><td>-170.8</td><td>-142.1</td><td></td></tr><tr><td>103.72</td><td>-89.1</td><td>-171.8</td><td>-145.6</td><td>-226.8</td></tr><tr><td>103.72</td><td>-89.1</td><td>55.1</td><td>-145.6</td><td></td></tr><tr><td>103.60</td><td>-93.6</td><td>49.0</td><td>-139.5</td><td></td></tr><tr><td>103.48</td><td>-99.0</td><td>40.2</td><td>-133.9</td><td></td></tr><tr><td>103.47</td><td>-99.6</td><td>39.0</td><td>-133.4</td><td></td></tr><tr><td>103.35</td><td>-105.4</td><td>27.2</td><td>-129.7</td><td></td></tr><tr><td>103.33</td><td>-107.1</td><td>23.6</td><td>-128.9</td><td></td></tr><tr><td>103.23</td><td>-112.9</td><td>10.6</td><td>-127.3</td><td></td></tr><tr><td>103.22</td><td>-113.8</td><td>8.4</td><td>-127.2</td><td></td></tr><tr><td>103.11</td><td>-121.0</td><td>-8.5</td><td>-127.2</td><td></td></tr><tr><td>102.98</td><td>-129.2</td><td>-28.0</td><td>-129.4</td><td></td></tr><tr><td>102.96</td><td>-130.9</td><td>-32.1</td><td>-130.2</td><td></td></tr><tr><td>102.95</td><td>-131.5</td><td>-33.6</td><td>-130.5</td><td></td></tr><tr><td>102.86</td><td>-137.7</td><td>-48.4</td><td>-134.2</td><td></td></tr><tr><td>102.66</td><td>-151.7</td><td>-83.0</td><td>-147.1</td><td></td></tr><tr><td>102.65</td><td>-152.4</td><td>-84.5</td><td>-147.9</td><td></td></tr><tr><td>102.64</td><td>-153.1</td><td>-86.5</td><td>-148.8</td><td></td></tr><tr><td>102.55</td><td>-160.1</td><td>-98.6</td><td>-156.8</td><td></td></tr><tr><td>102.55</td><td>-160.3</td><td>-99.1</td><td>-157.1</td><td></td></tr><tr><td>102.36</td><td>-164.3</td><td>-114.0</td><td>-177.3</td><td></td></tr><tr><td>102.22</td><td>-165.1</td><td>-122.3</td><td>-193.8</td><td></td></tr><tr><td>102.13</td><td>-165.3</td><td>-126.5</td><td>-205.3</td><td></td></tr><tr><td>102.08</td><td>-165.2</td><td>-128.3</td><td>-211.3</td><td></td></tr><tr><td>102.06</td><td>-165.2</td><td>-128.9</td><td>-213.6</td><td></td></tr><tr><td>101.77</td><td>-163.1</td><td>-133.5</td><td>-252.9</td><td></td></tr><tr><td>101.61</td><td>-160.8</td><td>-131.4</td><td>-273.4</td><td></td></tr></table>						Schicht	UK	kpgh	kpch	phi,k	delta	theta	[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	4	80.00	6.006	6.054	32.500	-21.68	16.35	von	bis	oben	unten	[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	102.55	102.55	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	100.28	-85.43	-100.90	100.28	100.23	-100.90	-102.83	100.23	99.89	-102.83	-116.36	99.89	99.24	-116.36	-142.01	99.24	98.24	-142.01	-181.48	98.24	97.24	-181.48	-220.94	97.24	96.44	-220.94	-252.51	96.44	80.00	-252.51	-901.29	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	-226.8	103.72	-89.1	55.1	-145.6		103.60	-93.6	49.0	-139.5		103.48	-99.0	40.2	-133.9		103.47	-99.6	39.0	-133.4		103.35	-105.4	27.2	-129.7		103.33	-107.1	23.6	-128.9		103.23	-112.9	10.6	-127.3		103.22	-113.8	8.4	-127.2		103.11	-121.0	-8.5	-127.2		102.98	-129.2	-28.0	-129.4		102.96	-130.9	-32.1	-130.2		102.95	-131.5	-33.6	-130.5		102.86	-137.7	-48.4	-134.2		102.66	-151.7	-83.0	-147.1		102.65	-152.4	-84.5	-147.9		102.64	-153.1	-86.5	-148.8		102.55	-160.1	-98.6	-156.8		102.55	-160.3	-99.1	-157.1		102.36	-164.3	-114.0	-177.3		102.22	-165.1	-122.3	-193.8		102.13	-165.3	-126.5	-205.3		102.08	-165.2	-128.3	-211.3		102.06	-165.2	-128.9	-213.6		101.77	-163.1	-133.5	-252.9		101.61	-160.8	-131.4	-273.4	
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																											
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]																																																																																																																																																																																																																																																																																																											
4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																											
von	bis	oben	unten																																																																																																																																																																																																																																																																																																														
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]																																																																																																																																																																																																																																																																																																														
102.55	102.55	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	100.28	-85.43	-100.90																																																																																																																																																																																																																																																																																																														
100.28	100.23	-100.90	-102.83																																																																																																																																																																																																																																																																																																														
100.23	99.89	-102.83	-116.36																																																																																																																																																																																																																																																																																																														
99.89	99.24	-116.36	-142.01																																																																																																																																																																																																																																																																																																														
99.24	98.24	-142.01	-181.48																																																																																																																																																																																																																																																																																																														
98.24	97.24	-181.48	-220.94																																																																																																																																																																																																																																																																																																														
97.24	96.44	-220.94	-252.51																																																																																																																																																																																																																																																																																																														
96.44	80.00	-252.51	-901.29																																																																																																																																																																																																																																																																																																														
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	-226.8																																																																																																																																																																																																																																																																																																													
103.72	-89.1	55.1	-145.6																																																																																																																																																																																																																																																																																																														
103.60	-93.6	49.0	-139.5																																																																																																																																																																																																																																																																																																														
103.48	-99.0	40.2	-133.9																																																																																																																																																																																																																																																																																																														
103.47	-99.6	39.0	-133.4																																																																																																																																																																																																																																																																																																														
103.35	-105.4	27.2	-129.7																																																																																																																																																																																																																																																																																																														
103.33	-107.1	23.6	-128.9																																																																																																																																																																																																																																																																																																														
103.23	-112.9	10.6	-127.3																																																																																																																																																																																																																																																																																																														
103.22	-113.8	8.4	-127.2																																																																																																																																																																																																																																																																																																														
103.11	-121.0	-8.5	-127.2																																																																																																																																																																																																																																																																																																														
102.98	-129.2	-28.0	-129.4																																																																																																																																																																																																																																																																																																														
102.96	-130.9	-32.1	-130.2																																																																																																																																																																																																																																																																																																														
102.95	-131.5	-33.6	-130.5																																																																																																																																																																																																																																																																																																														
102.86	-137.7	-48.4	-134.2																																																																																																																																																																																																																																																																																																														
102.66	-151.7	-83.0	-147.1																																																																																																																																																																																																																																																																																																														
102.65	-152.4	-84.5	-147.9																																																																																																																																																																																																																																																																																																														
102.64	-153.1	-86.5	-148.8																																																																																																																																																																																																																																																																																																														
102.55	-160.1	-98.6	-156.8																																																																																																																																																																																																																																																																																																														
102.55	-160.3	-99.1	-157.1																																																																																																																																																																																																																																																																																																														
102.36	-164.3	-114.0	-177.3																																																																																																																																																																																																																																																																																																														
102.22	-165.1	-122.3	-193.8																																																																																																																																																																																																																																																																																																														
102.13	-165.3	-126.5	-205.3																																																																																																																																																																																																																																																																																																														
102.08	-165.2	-128.3	-211.3																																																																																																																																																																																																																																																																																																														
102.06	-165.2	-128.9	-213.6																																																																																																																																																																																																																																																																																																														
101.77	-163.1	-133.5	-252.9																																																																																																																																																																																																																																																																																																														
101.61	-160.8	-131.4	-273.4																																																																																																																																																																																																																																																																																																														
Schnitt:		Anlage L1    Schnitt 3L		Seite Anlage L1/31																																																																																																																																																																																																																																																																																																													
Kapitel:		4                    LF 4 (BS-P)		Archiv Nr.: 11/31																																																																																																																																																																																																																																																																																																													
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>101.19 -150.5 -109.5 -324.5</div><div>101.14 -148.8 -105.2 -330.1</div><div>100.67 -129.1 -54.3 -368.5</div><div>100.28 -106.8 3.5 -378.8</div><div>100.23 -103.6 11.6 -378.4</div><div>99.89 -83.8 62.0 -365.4</div><div>99.24 -59.2 123.4 -302.9</div><div>98.24 -49.1 144.2 -162.3</div><div>97.24 -65.1 90.8 -39.1</div><div>96.44 -72.1 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>106.24 0.0 0.0 0.0</div><div>106.23 -0.2 0.0 0.0</div><div>105.70 -10.2 -1.4 -0.2</div><div>105.70 -31.0 -1.4 -13.5</div><div>105.50 -34.8 -2.6 -13.9</div><div>105.24 -39.7 -5.1 -14.9</div><div>104.74 -49.2 -13.7 -19.4</div><div>104.41 -55.4 -16.7 -24.4</div><div>104.41 -55.4 -118.4 -24.4</div><div>104.24 -58.6 -120.4 -44.7</div><div>103.74 -68.1 -128.0 -106.7</div><div>103.72 -68.7 -128.8 -109.3 -170.7</div><div>103.72 -68.7 41.9 -109.3</div><div>103.60 -72.2 37.1 -104.6</div><div>103.48 -76.4 30.2 -100.4</div><div>103.47 -76.9 29.3 -100.1</div><div>103.35 -81.5 20.0 -97.3</div><div>103.33 -82.8 17.2 -96.7</div><div>103.23 -87.3 7.0 -95.6</div><div>103.22 -88.0 5.3 -95.5</div><div>103.11 -93.7 -7.9 -95.6</div><div>102.98 -100.1 -23.3 -97.5</div><div>102.96 -101.5 -26.5 -98.2</div><div>102.95 -101.9 -27.6 -98.4</div><div>102.86 -106.8 -39.2 -101.4</div><div>102.66 -117.8 -66.3 -111.9</div><div>102.65 -118.3 -67.6 -112.4</div><div>102.64 -118.9 -69.1 -113.2</div><div>102.55 -124.3 -78.6 -119.6</div><div>102.55 -124.5 -79.0 -119.8</div><div>102.36 -127.9 -90.7 -135.9</div><div>102.22 -128.5 -97.2 -149.0</div><div>102.13 -128.7 -100.5 -158.2</div><div>102.08 -128.7 -101.9 -162.9</div><div>102.06 -128.6 -102.3 -164.7</div><div>101.77 -127.0 -106.0 -195.9</div><div>101.61 -125.2 -104.2 -212.2</div><div>101.19 -117.1 -87.0 -252.7</div><div>101.14 -115.8 -83.7 -257.2</div><div>100.67 -100.4 -43.6 -287.8</div><div>100.28 -83.0 2.0 -296.2</div><div>100.23 -80.5 8.3 -296.0</div><div>99.89 -65.1 48.0 -286.0</div><div>99.24 -45.9 96.4 -237.3</div><div>98.24 -38.0 113.0 -127.3</div><div>97.24 -50.6 71.2 -30.7</div><div>96.44 -56.1 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>106.24 0.0 0.0 0.0</div><div>106.23 -0.2 0.0 0.0</div><div>105.70 -10.2 -1.4 -0.2</div><div>105.70 -31.0 -1.4 -13.5</div><div>105.50 -34.8 -2.6 -13.9</div><div>105.24 -39.7 -5.1 -14.9</div></div></div></div></div></div>		
Schnitt: Anlage L1 Schnitt 3L		Seite Anlage L1/32
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11/02
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																															
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<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>-170.7</td></tr><tr><td>103.72</td><td>-68.7</td><td>41.9</td><td>-109.3</td><td></td></tr><tr><td>103.60</td><td>-72.2</td><td>37.1</td><td>-104.6</td><td></td></tr><tr><td>103.48</td><td>-76.4</td><td>30.2</td><td>-100.4</td><td></td></tr><tr><td>103.47</td><td>-76.9</td><td>29.3</td><td>-100.1</td><td></td></tr><tr><td>103.35</td><td>-81.5</td><td>20.0</td><td>-97.3</td><td></td></tr><tr><td>103.33</td><td>-82.8</td><td>17.2</td><td>-96.7</td><td></td></tr><tr><td>103.23</td><td>-87.3</td><td>7.0</td><td>-95.6</td><td></td></tr><tr><td>103.22</td><td>-88.0</td><td>5.3</td><td>-95.5</td><td></td></tr><tr><td>103.11</td><td>-93.7</td><td>-7.9</td><td>-95.6</td><td></td></tr><tr><td>102.98</td><td>-100.1</td><td>-23.3</td><td>-97.5</td><td></td></tr><tr><td>102.96</td><td>-101.5</td><td>-26.5</td><td>-98.2</td><td></td></tr><tr><td>102.95</td><td>-101.9</td><td>-27.6</td><td>-98.4</td><td></td></tr><tr><td>102.86</td><td>-106.8</td><td>-39.2</td><td>-101.4</td><td></td></tr><tr><td>102.66</td><td>-117.8</td><td>-66.3</td><td>-111.9</td><td></td></tr><tr><td>102.65</td><td>-118.3</td><td>-67.6</td><td>-112.4</td><td></td></tr><tr><td>102.64</td><td>-118.9</td><td>-69.1</td><td>-113.2</td><td></td></tr><tr><td>102.55</td><td>-124.3</td><td>-78.6</td><td>-119.6</td><td></td></tr><tr><td>102.55</td><td>-124.5</td><td>-79.0</td><td>-119.8</td><td></td></tr><tr><td>102.36</td><td>-127.9</td><td>-90.7</td><td>-135.9</td><td></td></tr><tr><td>102.22</td><td>-128.5</td><td>-97.2</td><td>-149.0</td><td></td></tr><tr><td>102.13</td><td>-128.7</td><td>-100.5</td><td>-158.2</td><td></td></tr><tr><td>102.08</td><td>-128.7</td><td>-101.9</td><td>-162.9</td><td></td></tr><tr><td>102.06</td><td>-128.6</td><td>-102.3</td><td>-164.7</td><td></td></tr><tr><td>101.77</td><td>-127.0</td><td>-106.0</td><td>-195.9</td><td></td></tr><tr><td>101.61</td><td>-125.2</td><td>-104.2</td><td>-212.2</td><td></td></tr><tr><td>101.19</td><td>-117.1</td><td>-87.0</td><td>-252.7</td><td></td></tr><tr><td>101.14</td><td>-115.8</td><td>-83.7</td><td>-257.2</td><td></td></tr><tr><td>100.67</td><td>-100.4</td><td>-43.6</td><td>-287.8</td><td></td></tr><tr><td>100.28</td><td>-83.0</td><td>2.0</td><td>-296.2</td><td></td></tr><tr><td>100.23</td><td>-80.5</td><td>8.3</td><td>-296.0</td><td></td></tr><tr><td>99.89</td><td>-65.1</td><td>48.0</td><td>-286.0</td><td></td></tr><tr><td>99.24</td><td>-45.9</td><td>96.4</td><td>-237.3</td><td></td></tr><tr><td>98.24</td><td>-38.0</td><td>113.0</td><td>-127.3</td><td></td></tr><tr><td>97.24</td><td>-50.6</td><td>71.2</td><td>-30.7</td><td></td></tr><tr><td>96.44</td><td>-56.1</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>[kN/m]</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>-123.4</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	-170.7	103.72	-68.7	41.9	-109.3		103.60	-72.2	37.1	-104.6		103.48	-76.4	30.2	-100.4		103.47	-76.9	29.3	-100.1		103.35	-81.5	20.0	-97.3		103.33	-82.8	17.2	-96.7		103.23	-87.3	7.0	-95.6		103.22	-88.0	5.3	-95.5		103.11	-93.7	-7.9	-95.6		102.98	-100.1	-23.3	-97.5		102.96	-101.5	-26.5	-98.2		102.95	-101.9	-27.6	-98.4		102.86	-106.8	-39.2	-101.4		102.66	-117.8	-66.3	-111.9		102.65	-118.3	-67.6	-112.4		102.64	-118.9	-69.1	-113.2		102.55	-124.3	-78.6	-119.6		102.55	-124.5	-79.0	-119.8		102.36	-127.9	-90.7	-135.9		102.22	-128.5	-97.2	-149.0		102.13	-128.7	-100.5	-158.2		102.08	-128.7	-101.9	-162.9		102.06	-128.6	-102.3	-164.7		101.77	-127.0	-106.0	-195.9		101.61	-125.2	-104.2	-212.2		101.19	-117.1	-87.0	-252.7		101.14	-115.8	-83.7	-257.2		100.67	-100.4	-43.6	-287.8		100.28	-83.0	2.0	-296.2		100.23	-80.5	8.3	-296.0		99.89	-65.1	48.0	-286.0		99.24	-45.9	96.4	-237.3		98.24	-38.0	113.0	-127.3		97.24	-50.6	71.2	-30.7		96.44	-56.1	0.0	0.0		Schnittgrößen (q,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	0.0	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	-123.4	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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102.06	-128.6	-102.3	-164.7																																																																																																																																																																																																																																																																																																																																																																
101.77	-127.0	-106.0	-195.9																																																																																																																																																																																																																																																																																																																																																																
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100.67	-100.4	-43.6	-287.8																																																																																																																																																																																																																																																																																																																																																																
100.28	-83.0	2.0	-296.2																																																																																																																																																																																																																																																																																																																																																																
100.23	-80.5	8.3	-296.0																																																																																																																																																																																																																																																																																																																																																																
99.89	-65.1	48.0	-286.0																																																																																																																																																																																																																																																																																																																																																																
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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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<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>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.23</td><td>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.18</td><td>-20.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.74</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-19.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-18.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.29</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.24</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.19</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-16.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.24</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.19</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.0</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	100.28	0.0	0.0	0.0	100.23	0.0	0.0	0.0	99.89	0.0	0.0	0.0	99.24	0.0	0.0	0.0	98.24	0.0	0.0	0.0	97.24	0.0	0.0	0.0	96.44	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.24	-21.0	-	-	-	106.23	-21.0	-	-	-	106.23	-21.0	-	-	-	106.18	-20.8	-	-	-	105.74	-19.4	-	-	-	105.70	-19.3	-	-	-	105.70	-19.3	-	-	-	105.65	-19.1	-	-	-	105.55	-18.8	-	-	-	105.50	-18.7	-	-	-	105.50	-18.7	-	-	-	105.45	-18.5	-	-	-	105.29	-18.0	-	-	-	105.24	-17.8	-	-	-	105.24	-17.8	-	-	-	105.19	-17.7	-	-	-	104.79	-16.4	-	-	-	104.74	-16.3	-	-	-	104.74	-16.3	-	-	-	104.69	-16.1	-	-	-	104.46	-15.4	-	-	-	104.41	-15.2	-	-	-	104.41	-15.2	-	-	-	104.35	-15.1	-	-	-	104.30	-14.9	-	-	-	104.24	-14.7	-	-	-	104.24	-14.7	-	-	-	104.19	-14.5	-	-	-	103.79	-13.3	-	-	-	103.74	-13.2	-	-	-	103.74	-13.2	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.72	-13.1	-	-	-	103.72	-13.1	-	-	-	103.66	-12.9	-	-	-	103.66	-12.9	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.54	-12.6	-	-	-	103.54	-12.6	-	-	-	103.48	-12.4	-	-	-	103.48	-12.4	-	-	-	103.47	-12.3	-	-	-	103.47	-12.3	-	-	-	103.41	-12.2	-	-	-	103.41	-12.2	-	-	-	103.35	-12.0	-	-	-
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<div>Anlage M1 Schnitt 4L</div> <div>1 LF 1 (BS-T)</div> <p>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</p> <p>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 4 Datei: 01_BS 4_LF1.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 = 106.20 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>Lasten (einseitig begrenzt)</p> <table><thead><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></thead><tbody><tr><td>1</td><td>74.30</td><td>2.14</td><td>103.74</td><td>102.85</td><td>100.66</td><td>nein</td></tr></tbody></table> <p>Lasten (zweiseitig begrenzt)</p> <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>46.70</td><td>0.00</td><td>0.34</td><td>103.74</td><td>103.74</td><td>103.74</td><td>103.46</td><td>103.31</td><td>nein</td></tr><tr><td>2</td><td>18.90</td><td>5.48</td><td>10.08</td><td>103.74</td><td>100.85</td><td>95.43</td><td>93.07</td><td>88.22</td><td>nein</td></tr><tr><td>3</td><td>0.65</td><td>10.08</td><td>13.88</td><td>103.74</td><td>97.92</td><td>88.22</td><td>88.88</td><td>82.26</td><td>nein</td></tr><tr><td>4</td><td>2.50</td><td>2.14</td><td>5.48</td><td>103.75</td><td>103.75</td><td>100.68</td><td>99.60</td><td>95.45</td><td>nein</td></tr><tr><td>5</td><td>74.17</td><td>0.34</td><td>0.64</td><td>103.74</td><td>103.60</td><td>103.31</td><td>103.21</td><td>102.94</td><td>nein</td></tr><tr><td>6</td><td>81.33</td><td>0.64</td><td>0.94</td><td>103.74</td><td>103.47</td><td>102.94</td><td>102.95</td><td>102.54</td><td>nein</td></tr><tr><td>7</td><td>88.47</td><td>0.94</td><td>1.24</td><td>103.74</td><td>103.35</td><td>102.54</td><td>102.65</td><td>102.07</td><td>nein</td></tr><tr><td>8</td><td>95.63</td><td>1.24</td><td>1.54</td><td>103.74</td><td>103.23</td><td>102.07</td><td>102.35</td><td>101.60</td><td>nein</td></tr><tr><td>9</td><td>102.78</td><td>1.54</td><td>1.84</td><td>103.74</td><td>103.10</td><td>101.60</td><td>102.06</td><td>101.13</td><td>nein</td></tr><tr><td>10</td><td>109.92</td><td>1.84</td><td>2.14</td><td>103.74</td><td>102.98</td><td>101.13</td><td>101.76</td><td>100.66</td><td>nein</td></tr></tbody></table> <p>Steuerparameter = 0.50</p> <p>Zusatzdrücke</p> <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>0.00</td><td>14.00</td><td>106.19</td><td>104.74</td><td>Ständig</td></tr></tbody></table>			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	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	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
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1	0.00	14.00	106.19	104.74	Ständig																																																																																																																																																												
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/1																																																																																																																																																															
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 1111																																																																																																																																																															
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

Art des Fußlagers:  
Profillänge automatisch und Fuß gebettet  
Profillänge = 5.90 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
105.75	105.32	5.000	5.000
105.32	103.74	5.000	5.000
103.74	102.62	5.000	5.000
102.62	80.00	50.000	50.000

Ausnutzungsgrad  $\mu_e = 420.191 / 424.388 = 0.990$   
Bettungslager  $B_{h,d} = 420.191 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 424.388 \text{ kN/m}$

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.  
bestimmt nach:  
Wandreibung angepasst.

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

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

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	105.750	0.000	4.248	0.00	0.00
105.750	105.500	4.248	6.662	0.00	0.00
105.500	105.320	6.662	8.400	0.00	1.80
105.320	105.160	8.400	9.945	1.80	3.40
105.160	105.000	9.945	11.490	3.40	5.00
105.000	104.740	11.490	14.000	5.00	5.00
104.740	104.410	0.000	0.000	5.00	5.00
104.410	104.156	0.000	0.000	5.00	5.00
104.156	103.750	0.000	0.000	5.00	5.00
103.750	103.740	0.000	0.008	5.00	5.00
103.740	103.737	0.003	21.730	5.00	5.00
103.737	103.599	21.730	22.375	5.00	5.00
103.599	103.475	22.375	39.045	5.00	5.00
103.475	103.458	39.045	42.525	5.00	5.00
103.458	103.351	42.525	47.834	5.00	5.00
103.351	103.312	47.834	51.813	5.00	5.00
103.312	103.226	51.813	63.421	5.00	5.00
103.226	103.208	63.421	66.745	5.00	5.00

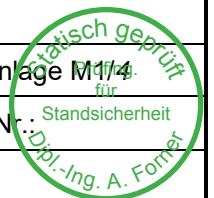
Schnitt:	Anlage M1	Schnitt 4L	Seite Anlage M1/2
Kapitel:	1	LF 1 (BS-T)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
103.208 103.155 66.745 68.857 5.00 5.00 103.155 103.102 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 5.00 102.166 102.119 82.042 81.663 5.00 5.00 102.119 102.072 81.663 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 5.00 101.132 100.851 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 5.00 100.662 100.299 39.055 40.994 5.00 5.00 100.299 99.601 40.994 44.725 5.00 5.00 99.601 97.921 44.725 53.341 5.00 5.00 97.921 95.446 53.341 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		
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		
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		
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		
103.35 103.31 -58.80 -59.41		
103.31 103.23 -59.41 -60.77		
103.23 103.21 -60.77 -61.07		
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/3
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																																																																																																																																																																																																																																																																																				
<table> <tr><td>103.21</td><td>103.15</td><td>-61.07</td><td>-61.91</td></tr> <tr><td>103.15</td><td>103.10</td><td>-61.91</td><td>-62.74</td></tr> <tr><td>103.10</td><td>102.98</td><td>-62.74</td><td>-64.71</td></tr> <tr><td>102.98</td><td>102.95</td><td>-64.71</td><td>-65.17</td></tr> <tr><td>102.95</td><td>102.94</td><td>-65.17</td><td>-65.39</td></tr> <tr><td>102.94</td><td>102.85</td><td>-65.39</td><td>-66.69</td></tr> <tr><td>102.85</td><td>102.65</td><td>-66.69</td><td>-69.89</td></tr> <tr><td>102.65</td><td>102.62</td><td>-69.89</td><td>-70.39</td></tr> <tr><td>102.62</td><td>102.58</td><td>-125.07</td><td>-126.71</td></tr> <tr><td>102.58</td><td>102.54</td><td>-126.71</td><td>-128.36</td></tr> <tr><td>102.54</td><td>102.35</td><td>-128.36</td><td>-136.35</td></tr> <tr><td>102.35</td><td>102.17</td><td>-136.35</td><td>-144.35</td></tr> <tr><td>102.17</td><td>102.12</td><td>-144.35</td><td>-146.35</td></tr> <tr><td>102.12</td><td>102.07</td><td>-146.35</td><td>-148.34</td></tr> <tr><td>102.07</td><td>102.06</td><td>-148.34</td><td>-148.98</td></tr> <tr><td>102.06</td><td>101.76</td><td>-148.98</td><td>-161.62</td></tr> <tr><td>101.76</td><td>101.60</td><td>-161.62</td><td>-168.33</td></tr> <tr><td>101.60</td><td>101.18</td><td>-168.33</td><td>-186.10</td></tr> <tr><td>101.18</td><td>101.13</td><td>-186.10</td><td>-188.32</td></tr> <tr><td>101.13</td><td>100.85</td><td>-188.32</td><td>-200.24</td></tr> <tr><td>100.85</td><td>100.68</td><td>-200.24</td><td>-207.44</td></tr> <tr><td>100.68</td><td>100.66</td><td>-207.44</td><td>-208.30</td></tr> <tr><td>100.66</td><td>100.30</td><td>-208.30</td><td>-223.73</td></tr> <tr><td>100.30</td><td>99.60</td><td>-223.73</td><td>-253.40</td></tr> <tr><td>99.60</td><td>97.92</td><td>-253.40</td><td>-324.79</td></tr> <tr><td>97.92</td><td>95.45</td><td>-324.79</td><td>-429.96</td></tr> <tr><td>95.45</td><td>95.43</td><td>-429.96</td><td>-430.82</td></tr> <tr><td>95.43</td><td>93.07</td><td>-430.82</td><td>-530.93</td></tr> <tr><td>93.07</td><td>88.88</td><td>-530.93</td><td>-708.96</td></tr> <tr><td>88.88</td><td>88.22</td><td>-708.96</td><td>-737.29</td></tr> <tr><td>88.22</td><td>82.26</td><td>-737.29</td><td>-990.45</td></tr> <tr><td>82.26</td><td>80.00</td><td>-990.45</td><td>-1086.47</td></tr> </table> <p>Schnittgrößen (Bemessungswerte)</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>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>106.19</td><td>-0.2</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.75</td><td>-9.8</td><td>-1.1</td><td>-0.2</td></tr> <tr><td>105.50</td><td>-14.2</td><td>0.2</td><td>-0.4</td></tr> <tr><td>105.32</td><td>-15.8</td><td>4.8</td><td>0.0</td></tr> <tr><td>105.16</td><td>-17.8</td><td>7.8</td><td>1.0</td></tr> <tr><td>105.00</td><td>-19.5</td><td>11.7</td><td>2.5</td></tr> <tr><td>104.74</td><td>-21.6</td><td>19.8</td><td>6.6</td></tr> <tr><td>104.41</td><td>-23.4</td><td>37.8</td><td>16.0</td></tr> <tr><td>104.41</td><td>-23.4</td><td>-69.6</td><td>16.0</td></tr> <tr><td>104.16</td><td>-24.4</td><td>-54.2</td><td>0.3</td></tr> <tr><td>103.75</td><td>-26.7</td><td>-31.9</td><td>-17.1</td></tr> <tr><td>103.74</td><td>-26.7</td><td>-31.4</td><td>-17.4</td></tr> <tr><td>103.74</td><td>-26.8</td><td>-31.3</td><td>-17.5</td></tr> <tr><td>103.60</td><td>-27.7</td><td>-28.1</td><td>-21.6</td></tr> <tr><td>103.47</td><td>-28.7</td><td>-26.7</td><td>-25.0</td></tr> <tr><td>103.46</td><td>-28.8</td><td>-26.7</td><td>-25.4</td></tr> <tr><td>103.35</td><td>-29.7</td><td>-27.6</td><td>-28.3</td></tr> <tr><td>103.31</td><td>-30.1</td><td>-28.1</td><td>-29.4</td></tr> <tr><td>103.23</td><td>-30.9</td><td>-30.3</td><td>-31.9</td></tr> <tr><td>103.21</td><td>-31.0</td><td>-31.0</td><td>-32.5</td></tr> <tr><td>103.15</td><td>-31.5</td><td>-33.0</td><td>-34.1</td></tr> <tr><td>103.10</td><td>-32.1</td><td>-35.2</td><td>-35.9</td></tr> <tr><td>102.98</td><td>-33.4</td><td>-41.5</td><td>-40.7</td></tr> <tr><td>102.95</td><td>-33.7</td><td>-43.2</td><td>-41.9</td></tr> <tr><td>102.94</td><td>-33.8</td><td>-44.0</td><td>-42.5</td></tr> <tr><td>102.85</td><td>-34.7</td><td>-49.3</td><td>-46.3</td></tr> <tr><td>102.65</td><td>-37.1</td><td>-65.6</td><td>-57.8</td></tr> <tr><td>102.62</td><td>-37.5</td><td>-68.5</td><td>-60.0</td></tr> <tr><td>102.58</td><td>-37.9</td><td>-70.8</td><td>-62.7</td></tr> <tr><td>102.54</td><td>-35.0</td><td>-65.2</td><td>-65.3</td></tr> <tr><td>102.35</td><td>-20.7</td><td>-37.2</td><td>-74.9</td></tr> <tr><td>102.17</td><td>-5.5</td><td>-7.5</td><td>-79.1</td></tr> <tr><td>102.12</td><td>-1.9</td><td>-0.5</td><td>-79.3</td></tr> <tr><td>102.07</td><td>1.6</td><td>6.1</td><td>-79.2</td></tr> </table>				103.21	103.15	-61.07	-61.91	103.15	103.10	-61.91	-62.74	103.10	102.98	-62.74	-64.71	102.98	102.95	-64.71	-65.17	102.95	102.94	-65.17	-65.39	102.94	102.85	-65.39	-66.69	102.85	102.65	-66.69	-69.89	102.65	102.62	-69.89	-70.39	102.62	102.58	-125.07	-126.71	102.58	102.54	-126.71	-128.36	102.54	102.35	-128.36	-136.35	102.35	102.17	-136.35	-144.35	102.17	102.12	-144.35	-146.35	102.12	102.07	-146.35	-148.34	102.07	102.06	-148.34	-148.98	102.06	101.76	-148.98	-161.62	101.76	101.60	-161.62	-168.33	101.60	101.18	-168.33	-186.10	101.18	101.13	-186.10	-188.32	101.13	100.85	-188.32	-200.24	100.85	100.68	-200.24	-207.44	100.68	100.66	-207.44	-208.30	100.66	100.30	-208.30	-223.73	100.30	99.60	-223.73	-253.40	99.60	97.92	-253.40	-324.79	97.92	95.45	-324.79	-429.96	95.45	95.43	-429.96	-430.82	95.43	93.07	-430.82	-530.93	93.07	88.88	-530.93	-708.96	88.88	88.22	-708.96	-737.29	88.22	82.26	-737.29	-990.45	82.26	80.00	-990.45	-1086.47	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	-9.8	-1.1	-0.2	105.50	-14.2	0.2	-0.4	105.32	-15.8	4.8	0.0	105.16	-17.8	7.8	1.0	105.00	-19.5	11.7	2.5	104.74	-21.6	19.8	6.6	104.41	-23.4	37.8	16.0	104.41	-23.4	-69.6	16.0	104.16	-24.4	-54.2	0.3	103.75	-26.7	-31.9	-17.1	103.74	-26.7	-31.4	-17.4	103.74	-26.8	-31.3	-17.5	103.60	-27.7	-28.1	-21.6	103.47	-28.7	-26.7	-25.0	103.46	-28.8	-26.7	-25.4	103.35	-29.7	-27.6	-28.3	103.31	-30.1	-28.1	-29.4	103.23	-30.9	-30.3	-31.9	103.21	-31.0	-31.0	-32.5	103.15	-31.5	-33.0	-34.1	103.10	-32.1	-35.2	-35.9	102.98	-33.4	-41.5	-40.7	102.95	-33.7	-43.2	-41.9	102.94	-33.8	-44.0	-42.5	102.85	-34.7	-49.3	-46.3	102.65	-37.1	-65.6	-57.8	102.62	-37.5	-68.5	-60.0	102.58	-37.9	-70.8	-62.7	102.54	-35.0	-65.2	-65.3	102.35	-20.7	-37.2	-74.9	102.17	-5.5	-7.5	-79.1	102.12	-1.9	-0.5	-79.3	102.07	1.6	6.1	-79.2
103.21	103.15	-61.07	-61.91																																																																																																																																																																																																																																																																																				
103.15	103.10	-61.91	-62.74																																																																																																																																																																																																																																																																																				
103.10	102.98	-62.74	-64.71																																																																																																																																																																																																																																																																																				
102.98	102.95	-64.71	-65.17																																																																																																																																																																																																																																																																																				
102.95	102.94	-65.17	-65.39																																																																																																																																																																																																																																																																																				
102.94	102.85	-65.39	-66.69																																																																																																																																																																																																																																																																																				
102.85	102.65	-66.69	-69.89																																																																																																																																																																																																																																																																																				
102.65	102.62	-69.89	-70.39																																																																																																																																																																																																																																																																																				
102.62	102.58	-125.07	-126.71																																																																																																																																																																																																																																																																																				
102.58	102.54	-126.71	-128.36																																																																																																																																																																																																																																																																																				
102.54	102.35	-128.36	-136.35																																																																																																																																																																																																																																																																																				
102.35	102.17	-136.35	-144.35																																																																																																																																																																																																																																																																																				
102.17	102.12	-144.35	-146.35																																																																																																																																																																																																																																																																																				
102.12	102.07	-146.35	-148.34																																																																																																																																																																																																																																																																																				
102.07	102.06	-148.34	-148.98																																																																																																																																																																																																																																																																																				
102.06	101.76	-148.98	-161.62																																																																																																																																																																																																																																																																																				
101.76	101.60	-161.62	-168.33																																																																																																																																																																																																																																																																																				
101.60	101.18	-168.33	-186.10																																																																																																																																																																																																																																																																																				
101.18	101.13	-186.10	-188.32																																																																																																																																																																																																																																																																																				
101.13	100.85	-188.32	-200.24																																																																																																																																																																																																																																																																																				
100.85	100.68	-200.24	-207.44																																																																																																																																																																																																																																																																																				
100.68	100.66	-207.44	-208.30																																																																																																																																																																																																																																																																																				
100.66	100.30	-208.30	-223.73																																																																																																																																																																																																																																																																																				
100.30	99.60	-223.73	-253.40																																																																																																																																																																																																																																																																																				
99.60	97.92	-253.40	-324.79																																																																																																																																																																																																																																																																																				
97.92	95.45	-324.79	-429.96																																																																																																																																																																																																																																																																																				
95.45	95.43	-429.96	-430.82																																																																																																																																																																																																																																																																																				
95.43	93.07	-430.82	-530.93																																																																																																																																																																																																																																																																																				
93.07	88.88	-530.93	-708.96																																																																																																																																																																																																																																																																																				
88.88	88.22	-708.96	-737.29																																																																																																																																																																																																																																																																																				
88.22	82.26	-737.29	-990.45																																																																																																																																																																																																																																																																																				
82.26	80.00	-990.45	-1086.47																																																																																																																																																																																																																																																																																				
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105.32	-15.8	4.8	0.0																																																																																																																																																																																																																																																																																				
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104.74	-21.6	19.8	6.6																																																																																																																																																																																																																																																																																				
104.41	-23.4	37.8	16.0																																																																																																																																																																																																																																																																																				
104.41	-23.4	-69.6	16.0																																																																																																																																																																																																																																																																																				
104.16	-24.4	-54.2	0.3																																																																																																																																																																																																																																																																																				
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103.74	-26.8	-31.3	-17.5																																																																																																																																																																																																																																																																																				
103.60	-27.7	-28.1	-21.6																																																																																																																																																																																																																																																																																				
103.47	-28.7	-26.7	-25.0																																																																																																																																																																																																																																																																																				
103.46	-28.8	-26.7	-25.4																																																																																																																																																																																																																																																																																				
103.35	-29.7	-27.6	-28.3																																																																																																																																																																																																																																																																																				
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103.21	-31.0	-31.0	-32.5																																																																																																																																																																																																																																																																																				
103.15	-31.5	-33.0	-34.1																																																																																																																																																																																																																																																																																				
103.10	-32.1	-35.2	-35.9																																																																																																																																																																																																																																																																																				
102.98	-33.4	-41.5	-40.7																																																																																																																																																																																																																																																																																				
102.95	-33.7	-43.2	-41.9																																																																																																																																																																																																																																																																																				
102.94	-33.8	-44.0	-42.5																																																																																																																																																																																																																																																																																				
102.85	-34.7	-49.3	-46.3																																																																																																																																																																																																																																																																																				
102.65	-37.1	-65.6	-57.8																																																																																																																																																																																																																																																																																				
102.62	-37.5	-68.5	-60.0																																																																																																																																																																																																																																																																																				
102.58	-37.9	-70.8	-62.7																																																																																																																																																																																																																																																																																				
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102.17	-5.5	-7.5	-79.1																																																																																																																																																																																																																																																																																				
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<table> <tr><td>102.06</td><td>2.6</td><td>8.1</td><td>-79.1</td></tr> <tr><td>101.76</td><td>20.1</td><td>40.0</td><td>-71.5</td></tr> <tr><td>101.60</td><td>26.7</td><td>51.6</td><td>-64.3</td></tr> <tr><td>101.18</td><td>34.9</td><td>65.0</td><td>-39.0</td></tr> <tr><td>101.13</td><td>35.0</td><td>64.9</td><td>-35.6</td></tr> <tr><td>100.85</td><td>32.4</td><td>56.6</td><td>-18.3</td></tr> <tr><td>100.68</td><td>29.8</td><td>45.2</td><td>-9.6</td></tr> <tr><td>100.66</td><td>29.6</td><td>43.5</td><td>-8.7</td></tr> <tr><td>100.30</td><td>31.5</td><td>0.0</td><td>0.0</td></tr> </table> <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>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>106.19</td><td>-0.2</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.75</td><td>-8.5</td><td>-0.9</td><td>-0.1</td></tr> <tr><td>105.50</td><td>-12.4</td><td>0.1</td><td>-0.4</td></tr> <tr><td>105.32</td><td>-13.8</td><td>4.0</td><td>0.0</td></tr> <tr><td>105.16</td><td>-15.6</td><td>6.5</td><td>0.8</td></tr> <tr><td>105.00</td><td>-17.2</td><td>9.8</td><td>2.1</td></tr> <tr><td>104.74</td><td>-19.0</td><td>16.5</td><td>5.5</td></tr> <tr><td>104.41</td><td>-20.7</td><td>31.8</td><td>13.4</td></tr> <tr><td>104.41</td><td>-20.7</td><td>-57.7</td><td>13.4</td></tr> <tr><td>104.16</td><td>-21.7</td><td>-44.6</td><td>0.4</td></tr> <tr><td>103.75</td><td>-23.8</td><td>-25.7</td><td>-13.8</td></tr> <tr><td>103.74</td><td>-23.8</td><td>-25.3</td><td>-14.1</td></tr> <tr><td>103.74</td><td>-23.8</td><td>-25.2</td><td>-14.1</td></tr> <tr><td>103.60</td><td>-24.7</td><td>-22.5</td><td>-17.4</td></tr> <tr><td>103.47</td><td>-25.6</td><td>-21.4</td><td>-20.1</td></tr> <tr><td>103.46</td><td>-25.7</td><td>-21.4</td><td>-20.5</td></tr> <tr><td>103.35</td><td>-26.5</td><td>-22.3</td><td>-22.8</td></tr> <tr><td>103.31</td><td>-26.8</td><td>-22.8</td><td>-23.7</td></tr> <tr><td>103.23</td><td>-27.5</td><td>-24.7</td><td>-25.7</td></tr> <tr><td>103.21</td><td>-27.7</td><td>-25.3</td><td>-26.2</td></tr> <tr><td>103.15</td><td>-28.1</td><td>-27.1</td><td>-27.6</td></tr> <tr><td>103.10</td><td>-28.6</td><td>-29.1</td><td>-29.1</td></tr> <tr><td>102.98</td><td>-29.8</td><td>-34.6</td><td>-33.0</td></tr> <tr><td>102.95</td><td>-30.0</td><td>-36.1</td><td>-34.0</td></tr> <tr><td>102.94</td><td>-30.2</td><td>-36.9</td><td>-34.5</td></tr> <tr><td>102.85</td><td>-31.0</td><td>-41.5</td><td>-37.7</td></tr> <tr><td>102.65</td><td>-33.1</td><td>-55.7</td><td>-47.5</td></tr> <tr><td>102.62</td><td>-33.4</td><td>-58.3</td><td>-49.3</td></tr> <tr><td>102.58</td><td>-33.7</td><td>-60.3</td><td>-51.6</td></tr> <tr><td>102.54</td><td>-31.3</td><td>-55.6</td><td>-53.8</td></tr> <tr><td>102.35</td><td>-19.2</td><td>-32.1</td><td>-62.1</td></tr> <tr><td>102.17</td><td>-6.2</td><td>-7.0</td><td>-65.8</td></tr> <tr><td>102.12</td><td>-3.1</td><td>-1.2</td><td>-65.9</td></tr> <tr><td>102.07</td><td>-0.2</td><td>4.4</td><td>-65.9</td></tr> <tr><td>102.06</td><td>0.7</td><td>6.1</td><td>-65.8</td></tr> <tr><td>101.76</td><td>15.6</td><td>33.0</td><td>-59.7</td></tr> <tr><td>101.60</td><td>21.2</td><td>42.7</td><td>-53.7</td></tr> <tr><td>101.18</td><td>28.3</td><td>54.2</td><td>-32.6</td></tr> <tr><td>101.13</td><td>28.4</td><td>54.2</td><td>-29.8</td></tr> <tr><td>100.85</td><td>26.0</td><td>47.4</td><td>-15.3</td></tr> <tr><td>100.68</td><td>23.5</td><td>37.9</td><td>-8.0</td></tr> <tr><td>100.66</td><td>23.3</td><td>36.5</td><td>-7.3</td></tr> <tr><td>100.30</td><td>24.5</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> <tr><td>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>106.19</td><td>-0.2</td><td>0.0</td><td>0.0</td></tr> <tr><td>105.75</td><td>-8.5</td><td>-0.9</td><td>-0.1</td></tr> <tr><td>105.50</td><td>-12.4</td><td>0.1</td><td>-0.4</td></tr> <tr><td>105.32</td><td>-13.8</td><td>4.0</td><td>0.0</td></tr> <tr><td>105.16</td><td>-15.6</td><td>6.5</td><td>0.8</td></tr> <tr><td>105.00</td><td>-17.2</td><td>9.8</td><td>2.1</td></tr> <tr><td>104.74</td><td>-19.0</td><td>16.5</td><td>5.5</td></tr> <tr><td>104.41</td><td>-20.7</td><td>31.8</td><td>13.4</td></tr> <tr><td>104.41</td><td>-20.7</td><td>-57.7</td><td>13.4</td></tr> </table>				102.06	2.6	8.1	-79.1	101.76	20.1	40.0	-71.5	101.60	26.7	51.6	-64.3	101.18	34.9	65.0	-39.0	101.13	35.0	64.9	-35.6	100.85	32.4	56.6	-18.3	100.68	29.8	45.2	-9.6	100.66	29.6	43.5	-8.7	100.30	31.5	0.0	0.0	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	9.8	2.1	104.74	-19.0	16.5	5.5	104.41	-20.7	31.8	13.4	104.41	-20.7	-57.7	13.4	104.16	-21.7	-44.6	0.4	103.75	-23.8	-25.7	-13.8	103.74	-23.8	-25.3	-14.1	103.74	-23.8	-25.2	-14.1	103.60	-24.7	-22.5	-17.4	103.47	-25.6	-21.4	-20.1	103.46	-25.7	-21.4	-20.5	103.35	-26.5	-22.3	-22.8	103.31	-26.8	-22.8	-23.7	103.23	-27.5	-24.7	-25.7	103.21	-27.7	-25.3	-26.2	103.15	-28.1	-27.1	-27.6	103.10	-28.6	-29.1	-29.1	102.98	-29.8	-34.6	-33.0	102.95	-30.0	-36.1	-34.0	102.94	-30.2	-36.9	-34.5	102.85	-31.0	-41.5	-37.7	102.65	-33.1	-55.7	-47.5	102.62	-33.4	-58.3	-49.3	102.58	-33.7	-60.3	-51.6	102.54	-31.3	-55.6	-53.8	102.35	-19.2	-32.1	-62.1	102.17	-6.2	-7.0	-65.8	102.12	-3.1	-1.2	-65.9	102.07	-0.2	4.4	-65.9	102.06	0.7	6.1	-65.8	101.76	15.6	33.0	-59.7	101.60	21.2	42.7	-53.7	101.18	28.3	54.2	-32.6	101.13	28.4	54.2	-29.8	100.85	26.0	47.4	-15.3	100.68	23.5	37.9	-8.0	100.66	23.3	36.5	-7.3	100.30	24.5	0.0	0.0	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	9.8	2.1	104.74	-19.0	16.5	5.5	104.41	-20.7	31.8	13.4	104.41	-20.7	-57.7	13.4
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(q,k)</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>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.19</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>105.32</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.16</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>104.16</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>102.12</td><td>0.0</td><td>0.0</td><td>0.0</td></tr></table></div>			104.16	-21.7	-44.6	0.4	103.75	-23.8	-25.7	-13.8	103.74	-23.8	-25.3	-14.1	103.74	-23.8	-25.2	-14.1	103.60	-24.7	-22.5	-17.4	103.47	-25.6	-21.4	-20.1	103.46	-25.7	-21.4	-20.5	103.35	-26.5	-22.3	-22.8	103.31	-26.8	-22.8	-23.7	103.23	-27.5	-24.7	-25.7	103.21	-27.7	-25.3	-26.2	103.15	-28.1	-27.1	-27.6	103.10	-28.6	-29.1	-29.1	102.98	-29.8	-34.6	-33.0	102.95	-30.0	-36.1	-34.0	102.94	-30.2	-36.9	-34.5	102.85	-31.0	-41.5	-37.7	102.65	-33.1	-55.7	-47.5	102.62	-33.4	-58.3	-49.3	102.58	-33.7	-60.3	-51.6	102.54	-31.3	-55.6	-53.8	102.35	-19.2	-32.1	-62.1	102.17	-6.2	-7.0	-65.8	102.12	-3.1	-1.2	-65.9	102.07	-0.2	4.4	-65.9	102.06	0.7	6.1	-65.8	101.76	15.6	33.0	-59.7	101.60	21.2	42.7	-53.7	101.18	28.3	54.2	-32.6	101.13	28.4	54.2	-29.8	100.85	26.0	47.4	-15.3	100.68	23.5	37.9	-8.0	100.66	23.3	36.5	-7.3	100.30	24.5	0.0	0.0	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	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	102.12	0.0	0.0	0.0
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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>106.20</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.14</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-16.2</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-15.7</td><td>1.21</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-15.6</td><td>1.21</td><td>18.82</td><td>23.77</td></tr><tr><td>105.50</td><td>-15.6</td><td>1.53</td><td>23.78</td><td>23.77</td></tr><tr><td>105.45</td><td>-15.4</td><td>1.53</td><td>23.54</td><td>28.05</td></tr><tr><td>105.36</td><td>-15.1</td><td>2.42</td><td>36.62</td><td>36.61</td></tr><tr><td>105.32</td><td>-15.0</td><td>2.42</td><td>36.25</td><td>40.89</td></tr><tr><td>105.32</td><td>-15.0</td><td>1.66</td><td>24.79</td><td>24.78</td></tr><tr><td>105.27</td><td>-14.8</td><td>1.66</td><td>24.49</td><td>27.53</td></tr><tr><td>105.21</td><td>-14.6</td><td>2.08</td><td>30.29</td><td>30.29</td></tr><tr><td>105.16</td><td>-14.4</td><td>2.08</td><td>29.91</td><td>33.04</td></tr><tr><td>105.16</td><td>-14.4</td><td>2.29</td><td>33.04</td><td>33.04</td></tr><tr><td>105.11</td><td>-14.2</td><td>2.29</td><td>32.62</td><td>35.79</td></tr><tr><td>105.05</td><td>-14.1</td><td>2.74</td><td>38.54</td><td>38.54</td></tr><tr><td>105.00</td><td>-13.9</td><td>2.74</td><td>38.04</td><td>41.29</td></tr><tr><td>105.00</td><td>-13.9</td><td>2.98</td><td>41.29</td><td>41.29</td></tr><tr><td>104.95</td><td>-13.7</td><td>2.98</td><td>40.77</td><td>42.63</td></tr><tr><td>104.79</td><td>-13.2</td><td>3.54</td><td>46.65</td><td>46.65</td></tr><tr><td>104.74</td><td>-13.0</td><td>3.54</td><td>46.03</td><td>47.99</td></tr><tr><td>104.74</td><td>-13.0</td><td>3.69</td><td>48.00</td><td>47.99</td></tr><tr><td>104.69</td><td>-12.8</td><td>3.69</td><td>47.40</td><td>49.21</td></tr><tr><td>104.46</td><td>-12.0</td><td>4.60</td><td>55.29</td><td>55.29</td></tr><tr><td>104.41</td><td>-11.9</td><td>4.60</td><td>54.55</td><td>56.50</td></tr><tr><td>104.41</td><td>-11.9</td><td>4.76</td><td>56.51</td><td>56.50</td></tr><tr><td>104.36</td><td>-11.7</td><td>4.76</td><td>55.68</td><td>57.81</td></tr><tr><td>104.21</td><td>-11.2</td><td>5.00</td><td>55.91</td><td>61.74</td></tr><tr><td>104.16</td><td>-11.0</td><td>5.00</td><td>55.05</td><td>63.05</td></tr><tr><td>104.16</td><td>-11.0</td><td>5.00</td><td>55.05</td><td>63.05</td></tr><tr><td>104.11</td><td>-10.8</td><td>5.00</td><td>54.18</td><td>64.36</td></tr><tr><td>103.80</td><td>-9.8</td><td>5.00</td><td>49.01</td><td>72.21</td></tr><tr><td>103.75</td><td>-9.6</td><td>5.00</td><td>48.15</td><td>73.52</td></tr><tr><td>103.75</td><td>-9.6</td><td>5.00</td><td>48.15</td><td>73.52</td></tr><tr><td>103.74</td><td>-9.6</td><td>5.00</td><td>47.98</td><td>73.78</td></tr><tr><td>103.74</td><td>-9.6</td><td>5.00</td><td>47.98</td><td>85.51</td></tr><tr><td>103.74</td><td>-9.6</td><td>5.00</td><td>47.94</td><td>85.57</td></tr><tr><td>103.74</td><td>-9.6</td><td>5.00</td><td>47.94</td><td>85.57</td></tr><tr><td>103.69</td><td>-9.4</td><td>5.00</td><td>47.16</td><td>86.76</td></tr><tr><td>103.65</td><td>-9.3</td><td>5.00</td><td>46.37</td><td>87.95</td></tr><tr><td>103.60</td><td>-9.1</td><td>5.00</td><td>45.59</td><td>89.14</td></tr><tr><td>103.60</td><td>-9.1</td><td>5.00</td><td>45.59</td><td>89.14</td></tr><tr><td>103.54</td><td>-8.9</td><td>5.00</td><td>44.54</td><td>90.74</td></tr><tr><td>103.54</td><td>-8.9</td><td>5.00</td><td>44.54</td><td>90.74</td></tr><tr><td>103.47</td><td>-8.7</td><td>5.00</td><td>43.49</td><td>92.34</td></tr><tr><td>103.47</td><td>-8.7</td><td>5.00</td><td>43.49</td><td>92.34</td></tr><tr><td>103.46</td><td>-8.6</td><td>5.00</td><td>43.21</td><td>92.77</td></tr><tr><td>103.46</td><td>-8.6</td><td>5.00</td><td>43.21</td><td>92.77</td></tr><tr><td>103.40</td><td>-8.5</td><td>5.00</td><td>42.30</td><td>94.16</td></tr><tr><td>103.40</td><td>-8.5</td><td>5.00</td><td>42.30</td><td>94.16</td></tr><tr><td>103.35</td><td>-8.3</td><td>5.00</td><td>41.39</td><td>95.55</td></tr></table></div></div></div>						Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.20	-17.9	-	-	-	106.19	-17.9	-	-	-	106.19	-17.9	-	-	-	106.14	-17.7	-	-	-	105.80	-16.6	-	-	-	105.75	-16.4	0.00	0.00	0.00	105.75	-16.4	0.00	0.00	0.00	105.70	-16.2	0.00	0.00	4.75	105.55	-15.7	1.21	19.02	19.02	105.50	-15.6	1.21	18.82	23.77	105.50	-15.6	1.53	23.78	23.77	105.45	-15.4	1.53	23.54	28.05	105.36	-15.1	2.42	36.62	36.61	105.32	-15.0	2.42	36.25	40.89	105.32	-15.0	1.66	24.79	24.78	105.27	-14.8	1.66	24.49	27.53	105.21	-14.6	2.08	30.29	30.29	105.16	-14.4	2.08	29.91	33.04	105.16	-14.4	2.29	33.04	33.04	105.11	-14.2	2.29	32.62	35.79	105.05	-14.1	2.74	38.54	38.54	105.00	-13.9	2.74	38.04	41.29	105.00	-13.9	2.98	41.29	41.29	104.95	-13.7	2.98	40.77	42.63	104.79	-13.2	3.54	46.65	46.65	104.74	-13.0	3.54	46.03	47.99	104.74	-13.0	3.69	48.00	47.99	104.69	-12.8	3.69	47.40	49.21	104.46	-12.0	4.60	55.29	55.29	104.41	-11.9	4.60	54.55	56.50	104.41	-11.9	4.76	56.51	56.50	104.36	-11.7	4.76	55.68	57.81	104.21	-11.2	5.00	55.91	61.74	104.16	-11.0	5.00	55.05	63.05	104.16	-11.0	5.00	55.05	63.05	104.11	-10.8	5.00	54.18	64.36	103.80	-9.8	5.00	49.01	72.21	103.75	-9.6	5.00	48.15	73.52	103.75	-9.6	5.00	48.15	73.52	103.74	-9.6	5.00	47.98	73.78	103.74	-9.6	5.00	47.98	85.51	103.74	-9.6	5.00	47.94	85.57	103.74	-9.6	5.00	47.94	85.57	103.69	-9.4	5.00	47.16	86.76	103.65	-9.3	5.00	46.37	87.95	103.60	-9.1	5.00	45.59	89.14	103.60	-9.1	5.00	45.59	89.14	103.54	-8.9	5.00	44.54	90.74	103.54	-8.9	5.00	44.54	90.74	103.47	-8.7	5.00	43.49	92.34	103.47	-8.7	5.00	43.49	92.34	103.46	-8.6	5.00	43.21	92.77	103.46	-8.6	5.00	43.21	92.77	103.40	-8.5	5.00	42.30	94.16	103.40	-8.5	5.00	42.30	94.16	103.35	-8.3	5.00	41.39	95.55
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105.16	-14.4	2.29	33.04	33.04																																																																																																																																																																																																																																																																																																			
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105.05	-14.1	2.74	38.54	38.54																																																																																																																																																																																																																																																																																																			
105.00	-13.9	2.74	38.04	41.29																																																																																																																																																																																																																																																																																																			
105.00	-13.9	2.98	41.29	41.29																																																																																																																																																																																																																																																																																																			
104.95	-13.7	2.98	40.77	42.63																																																																																																																																																																																																																																																																																																			
104.79	-13.2	3.54	46.65	46.65																																																																																																																																																																																																																																																																																																			
104.74	-13.0	3.54	46.03	47.99																																																																																																																																																																																																																																																																																																			
104.74	-13.0	3.69	48.00	47.99																																																																																																																																																																																																																																																																																																			
104.69	-12.8	3.69	47.40	49.21																																																																																																																																																																																																																																																																																																			
104.46	-12.0	4.60	55.29	55.29																																																																																																																																																																																																																																																																																																			
104.41	-11.9	4.60	54.55	56.50																																																																																																																																																																																																																																																																																																			
104.41	-11.9	4.76	56.51	56.50																																																																																																																																																																																																																																																																																																			
104.36	-11.7	4.76	55.68	57.81																																																																																																																																																																																																																																																																																																			
104.21	-11.2	5.00	55.91	61.74																																																																																																																																																																																																																																																																																																			
104.16	-11.0	5.00	55.05	63.05																																																																																																																																																																																																																																																																																																			
104.16	-11.0	5.00	55.05	63.05																																																																																																																																																																																																																																																																																																			
104.11	-10.8	5.00	54.18	64.36																																																																																																																																																																																																																																																																																																			
103.80	-9.8	5.00	49.01	72.21																																																																																																																																																																																																																																																																																																			
103.75	-9.6	5.00	48.15	73.52																																																																																																																																																																																																																																																																																																			
103.75	-9.6	5.00	48.15	73.52																																																																																																																																																																																																																																																																																																			
103.74	-9.6	5.00	47.98	73.78																																																																																																																																																																																																																																																																																																			
103.74	-9.6	5.00	47.98	85.51																																																																																																																																																																																																																																																																																																			
103.74	-9.6	5.00	47.94	85.57																																																																																																																																																																																																																																																																																																			
103.74	-9.6	5.00	47.94	85.57																																																																																																																																																																																																																																																																																																			
103.69	-9.4	5.00	47.16	86.76																																																																																																																																																																																																																																																																																																			
103.65	-9.3	5.00	46.37	87.95																																																																																																																																																																																																																																																																																																			
103.60	-9.1	5.00	45.59	89.14																																																																																																																																																																																																																																																																																																			
103.60	-9.1	5.00	45.59	89.14																																																																																																																																																																																																																																																																																																			
103.54	-8.9	5.00	44.54	90.74																																																																																																																																																																																																																																																																																																			
103.54	-8.9	5.00	44.54	90.74																																																																																																																																																																																																																																																																																																			
103.47	-8.7	5.00	43.49	92.34																																																																																																																																																																																																																																																																																																			
103.47	-8.7	5.00	43.49	92.34																																																																																																																																																																																																																																																																																																			
103.46	-8.6	5.00	43.21	92.77																																																																																																																																																																																																																																																																																																			
103.46	-8.6	5.00	43.21	92.77																																																																																																																																																																																																																																																																																																			
103.40	-8.5	5.00	42.30	94.16																																																																																																																																																																																																																																																																																																			
103.40	-8.5	5.00	42.30	94.16																																																																																																																																																																																																																																																																																																			
103.35	-8.3	5.00	41.39	95.55																																																																																																																																																																																																																																																																																																			
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<table><tr><td>103.35</td><td>-8.3</td><td>5.00</td><td>41.39</td><td>95.55</td></tr><tr><td>103.31</td><td>-8.1</td><td>5.00</td><td>40.74</td><td>96.53</td></tr><tr><td>103.31</td><td>-8.1</td><td>5.00</td><td>40.74</td><td>96.53</td></tr><tr><td>103.27</td><td>-8.0</td><td>5.00</td><td>40.02</td><td>97.64</td></tr><tr><td>103.27</td><td>-8.0</td><td>5.00</td><td>40.02</td><td>97.64</td></tr><tr><td>103.23</td><td>-7.9</td><td>5.00</td><td>39.29</td><td>98.75</td></tr><tr><td>103.23</td><td>-7.9</td><td>5.00</td><td>39.29</td><td>98.75</td></tr><tr><td>103.21</td><td>-7.8</td><td>5.00</td><td>38.97</td><td>99.24</td></tr><tr><td>103.21</td><td>-7.8</td><td>5.00</td><td>38.97</td><td>99.24</td></tr><tr><td>103.15</td><td>-7.6</td><td>5.00</td><td>38.08</td><td>100.60</td></tr><tr><td>103.15</td><td>-7.6</td><td>5.00</td><td>38.08</td><td>100.60</td></tr><tr><td>103.10</td><td>-7.4</td><td>5.00</td><td>37.20</td><td>101.96</td></tr><tr><td>103.10</td><td>-7.4</td><td>5.00</td><td>37.20</td><td>101.96</td></tr><tr><td>103.04</td><td>-7.2</td><td>5.00</td><td>36.15</td><td>103.56</td></tr><tr><td>103.04</td><td>-7.2</td><td>5.00</td><td>36.15</td><td>103.56</td></tr><tr><td>102.98</td><td>-7.0</td><td>5.00</td><td>35.10</td><td>105.16</td></tr><tr><td>102.98</td><td>-7.0</td><td>5.00</td><td>35.10</td><td>105.16</td></tr><tr><td>102.95</td><td>-6.9</td><td>5.00</td><td>34.62</td><td>105.90</td></tr><tr><td>102.95</td><td>-6.9</td><td>5.00</td><td>34.62</td><td>105.90</td></tr><tr><td>102.94</td><td>-6.9</td><td>5.00</td><td>34.39</td><td>106.26</td></tr><tr><td>102.94</td><td>-6.9</td><td>5.00</td><td>34.39</td><td>106.26</td></tr><tr><td>102.89</td><td>-6.7</td><td>5.00</td><td>33.70</td><td>107.31</td></tr><tr><td>102.89</td><td>-6.7</td><td>5.00</td><td>33.70</td><td>107.31</td></tr><tr><td>102.85</td><td>-6.6</td><td>5.00</td><td>33.02</td><td>108.37</td></tr><tr><td>102.85</td><td>-6.6</td><td>5.00</td><td>33.02</td><td>108.37</td></tr><tr><td>102.80</td><td>-6.4</td><td>5.00</td><td>32.17</td><td>109.67</td></tr><tr><td>102.70</td><td>-6.1</td><td>5.00</td><td>30.48</td><td>112.27</td></tr><tr><td>102.65</td><td>-5.9</td><td>5.00</td><td>29.64</td><td>113.57</td></tr><tr><td>102.65</td><td>-5.9</td><td>5.00</td><td>29.64</td><td>113.57</td></tr><tr><td>102.62</td><td>-5.8</td><td>5.00</td><td>29.11</td><td>114.39</td></tr><tr><td>102.62</td><td>-5.8</td><td>5.00</td><td>29.11</td><td>203.23</td></tr><tr><td>102.58</td><td>-5.7</td><td>5.00</td><td>28.46</td><td>205.91</td></tr><tr><td>102.58</td><td>-5.7</td><td>36.17</td><td>205.92</td><td>205.91</td></tr><tr><td>102.54</td><td>-5.6</td><td>36.17</td><td>201.26</td><td>208.58</td></tr><tr><td>102.54</td><td>-5.6</td><td>37.49</td><td>208.60</td><td>208.58</td></tr><tr><td>102.50</td><td>-5.4</td><td>37.49</td><td>202.73</td><td>211.83</td></tr><tr><td>102.40</td><td>-5.1</td><td>42.85</td><td>218.33</td><td>218.32</td></tr><tr><td>102.35</td><td>-4.9</td><td>42.85</td><td>211.66</td><td>221.57</td></tr><tr><td>102.35</td><td>-4.9</td><td>44.86</td><td>221.58</td><td>221.57</td></tr><tr><td>102.31</td><td>-4.8</td><td>44.86</td><td>214.60</td><td>224.81</td></tr><tr><td>102.21</td><td>-4.5</td><td>50.00</td><td>223.65</td><td>231.31</td></tr><tr><td>102.17</td><td>-4.3</td><td>50.00</td><td>215.90</td><td>234.56</td></tr><tr><td>102.17</td><td>-4.3</td><td>50.00</td><td>215.90</td><td>234.56</td></tr><tr><td>102.12</td><td>-4.2</td><td>50.00</td><td>208.16</td><td>237.81</td></tr><tr><td>102.12</td><td>-4.2</td><td>50.00</td><td>208.16</td><td>237.81</td></tr><tr><td>102.07</td><td>-4.0</td><td>50.00</td><td>200.44</td><td>241.06</td></tr><tr><td>102.07</td><td>-4.0</td><td>50.00</td><td>200.44</td><td>241.06</td></tr><tr><td>102.06</td><td>-4.0</td><td>50.00</td><td>197.98</td><td>242.10</td></tr><tr><td>102.06</td><td>-4.0</td><td>50.00</td><td>197.98</td><td>242.10</td></tr><tr><td>102.01</td><td>-3.8</td><td>50.00</td><td>189.86</td><td>245.52</td></tr><tr><td>101.81</td><td>-3.2</td><td>50.00</td><td>157.53</td><td>259.20</td></tr><tr><td>101.76</td><td>-3.0</td><td>50.00</td><td>149.48</td><td>262.63</td></tr><tr><td>101.76</td><td>-3.0</td><td>50.00</td><td>149.48</td><td>262.63</td></tr><tr><td>101.71</td><td>-2.8</td><td>50.00</td><td>140.94</td><td>266.26</td></tr><tr><td>101.65</td><td>-2.6</td><td>50.00</td><td>132.40</td><td>269.90</td></tr><tr><td>101.60</td><td>-2.5</td><td>50.00</td><td>123.89</td><td>273.54</td></tr><tr><td>101.60</td><td>-2.5</td><td>50.00</td><td>123.89</td><td>273.54</td></tr><tr><td>101.55</td><td>-2.3</td><td>50.00</td><td>115.45</td><td>277.15</td></tr><tr><td>101.24</td><td>-1.3</td><td>50.00</td><td>65.05</td><td>298.80</td></tr><tr><td>101.18</td><td>-1.1</td><td>50.00</td><td>56.69</td><td>302.41</td></tr><tr><td>101.18</td><td>-1.1</td><td>50.00</td><td>56.69</td><td>302.41</td></tr><tr><td>101.13</td><td>-1.0</td><td>50.00</td><td>48.33</td><td>306.02</td></tr><tr><td>101.13</td><td>-1.0</td><td>50.00</td><td>48.33</td><td>306.02</td></tr><tr><td>101.09</td><td>-0.8</td><td>50.00</td><td>40.86</td><td>309.24</td></tr><tr><td>100.90</td><td>-0.2</td><td>50.00</td><td>11.02</td><td>322.15</td></tr><tr><td>100.85</td><td>-0.1</td><td>50.00</td><td>3.57</td><td>325.38</td></tr><tr><td>100.85</td><td>-0.1</td><td>50.00</td><td>3.57</td><td>325.38</td></tr><tr><td>100.79</td><td>0.1</td><td>50.00</td><td>-5.44</td><td>329.29</td></tr><tr><td>100.74</td><td>0.3</td><td>50.00</td><td>-14.45</td><td>333.19</td></tr><tr><td>100.68</td><td>0.5</td><td>50.00</td><td>-23.45</td><td>337.10</td></tr><tr><td>100.68</td><td>0.5</td><td>50.00</td><td>-23.45</td><td>337.10</td></tr></table>							103.35	-8.3	5.00	41.39	95.55	103.31	-8.1	5.00	40.74	96.53	103.31	-8.1	5.00	40.74	96.53	103.27	-8.0	5.00	40.02	97.64	103.27	-8.0	5.00	40.02	97.64	103.23	-7.9	5.00	39.29	98.75	103.23	-7.9	5.00	39.29	98.75	103.21	-7.8	5.00	38.97	99.24	103.21	-7.8	5.00	38.97	99.24	103.15	-7.6	5.00	38.08	100.60	103.15	-7.6	5.00	38.08	100.60	103.10	-7.4	5.00	37.20	101.96	103.10	-7.4	5.00	37.20	101.96	103.04	-7.2	5.00	36.15	103.56	103.04	-7.2	5.00	36.15	103.56	102.98	-7.0	5.00	35.10	105.16	102.98	-7.0	5.00	35.10	105.16	102.95	-6.9	5.00	34.62	105.90	102.95	-6.9	5.00	34.62	105.90	102.94	-6.9	5.00	34.39	106.26	102.94	-6.9	5.00	34.39	106.26	102.89	-6.7	5.00	33.70	107.31	102.89	-6.7	5.00	33.70	107.31	102.85	-6.6	5.00	33.02	108.37	102.85	-6.6	5.00	33.02	108.37	102.80	-6.4	5.00	32.17	109.67	102.70	-6.1	5.00	30.48	112.27	102.65	-5.9	5.00	29.64	113.57	102.65	-5.9	5.00	29.64	113.57	102.62	-5.8	5.00	29.11	114.39	102.62	-5.8	5.00	29.11	203.23	102.58	-5.7	5.00	28.46	205.91	102.58	-5.7	36.17	205.92	205.91	102.54	-5.6	36.17	201.26	208.58	102.54	-5.6	37.49	208.60	208.58	102.50	-5.4	37.49	202.73	211.83	102.40	-5.1	42.85	218.33	218.32	102.35	-4.9	42.85	211.66	221.57	102.35	-4.9	44.86	221.58	221.57	102.31	-4.8	44.86	214.60	224.81	102.21	-4.5	50.00	223.65	231.31	102.17	-4.3	50.00	215.90	234.56	102.17	-4.3	50.00	215.90	234.56	102.12	-4.2	50.00	208.16	237.81	102.12	-4.2	50.00	208.16	237.81	102.07	-4.0	50.00	200.44	241.06	102.07	-4.0	50.00	200.44	241.06	102.06	-4.0	50.00	197.98	242.10	102.06	-4.0	50.00	197.98	242.10	102.01	-3.8	50.00	189.86	245.52	101.81	-3.2	50.00	157.53	259.20	101.76	-3.0	50.00	149.48	262.63	101.76	-3.0	50.00	149.48	262.63	101.71	-2.8	50.00	140.94	266.26	101.65	-2.6	50.00	132.40	269.90	101.60	-2.5	50.00	123.89	273.54	101.60	-2.5	50.00	123.89	273.54	101.55	-2.3	50.00	115.45	277.15	101.24	-1.3	50.00	65.05	298.80	101.18	-1.1	50.00	56.69	302.41	101.18	-1.1	50.00	56.69	302.41	101.13	-1.0	50.00	48.33	306.02	101.13	-1.0	50.00	48.33	306.02	101.09	-0.8	50.00	40.86	309.24	100.90	-0.2	50.00	11.02	322.15	100.85	-0.1	50.00	3.57	325.38	100.85	-0.1	50.00	3.57	325.38	100.79	0.1	50.00	-5.44	329.29	100.74	0.3	50.00	-14.45	333.19	100.68	0.5	50.00	-23.45	337.10	100.68	0.5	50.00	-23.45	337.10
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103.10	-7.4	5.00	37.20	101.96																																																																																																																																																																																																																																																																																																																																																																					
103.10	-7.4	5.00	37.20	101.96																																																																																																																																																																																																																																																																																																																																																																					
103.04	-7.2	5.00	36.15	103.56																																																																																																																																																																																																																																																																																																																																																																					
103.04	-7.2	5.00	36.15	103.56																																																																																																																																																																																																																																																																																																																																																																					
102.98	-7.0	5.00	35.10	105.16																																																																																																																																																																																																																																																																																																																																																																					
102.98	-7.0	5.00	35.10	105.16																																																																																																																																																																																																																																																																																																																																																																					
102.95	-6.9	5.00	34.62	105.90																																																																																																																																																																																																																																																																																																																																																																					
102.95	-6.9	5.00	34.62	105.90																																																																																																																																																																																																																																																																																																																																																																					
102.94	-6.9	5.00	34.39	106.26																																																																																																																																																																																																																																																																																																																																																																					
102.94	-6.9	5.00	34.39	106.26																																																																																																																																																																																																																																																																																																																																																																					
102.89	-6.7	5.00	33.70	107.31																																																																																																																																																																																																																																																																																																																																																																					
102.89	-6.7	5.00	33.70	107.31																																																																																																																																																																																																																																																																																																																																																																					
102.85	-6.6	5.00	33.02	108.37																																																																																																																																																																																																																																																																																																																																																																					
102.85	-6.6	5.00	33.02	108.37																																																																																																																																																																																																																																																																																																																																																																					
102.80	-6.4	5.00	32.17	109.67																																																																																																																																																																																																																																																																																																																																																																					
102.70	-6.1	5.00	30.48	112.27																																																																																																																																																																																																																																																																																																																																																																					
102.65	-5.9	5.00	29.64	113.57																																																																																																																																																																																																																																																																																																																																																																					
102.65	-5.9	5.00	29.64	113.57																																																																																																																																																																																																																																																																																																																																																																					
102.62	-5.8	5.00	29.11	114.39																																																																																																																																																																																																																																																																																																																																																																					
102.62	-5.8	5.00	29.11	203.23																																																																																																																																																																																																																																																																																																																																																																					
102.58	-5.7	5.00	28.46	205.91																																																																																																																																																																																																																																																																																																																																																																					
102.58	-5.7	36.17	205.92	205.91																																																																																																																																																																																																																																																																																																																																																																					
102.54	-5.6	36.17	201.26	208.58																																																																																																																																																																																																																																																																																																																																																																					
102.54	-5.6	37.49	208.60	208.58																																																																																																																																																																																																																																																																																																																																																																					
102.50	-5.4	37.49	202.73	211.83																																																																																																																																																																																																																																																																																																																																																																					
102.40	-5.1	42.85	218.33	218.32																																																																																																																																																																																																																																																																																																																																																																					
102.35	-4.9	42.85	211.66	221.57																																																																																																																																																																																																																																																																																																																																																																					
102.35	-4.9	44.86	221.58	221.57																																																																																																																																																																																																																																																																																																																																																																					
102.31	-4.8	44.86	214.60	224.81																																																																																																																																																																																																																																																																																																																																																																					
102.21	-4.5	50.00	223.65	231.31																																																																																																																																																																																																																																																																																																																																																																					
102.17	-4.3	50.00	215.90	234.56																																																																																																																																																																																																																																																																																																																																																																					
102.17	-4.3	50.00	215.90	234.56																																																																																																																																																																																																																																																																																																																																																																					
102.12	-4.2	50.00	208.16	237.81																																																																																																																																																																																																																																																																																																																																																																					
102.12	-4.2	50.00	208.16	237.81																																																																																																																																																																																																																																																																																																																																																																					
102.07	-4.0	50.00	200.44	241.06																																																																																																																																																																																																																																																																																																																																																																					
102.07	-4.0	50.00	200.44	241.06																																																																																																																																																																																																																																																																																																																																																																					
102.06	-4.0	50.00	197.98	242.10																																																																																																																																																																																																																																																																																																																																																																					
102.06	-4.0	50.00	197.98	242.10																																																																																																																																																																																																																																																																																																																																																																					
102.01	-3.8	50.00	189.86	245.52																																																																																																																																																																																																																																																																																																																																																																					
101.81	-3.2	50.00	157.53	259.20																																																																																																																																																																																																																																																																																																																																																																					
101.76	-3.0	50.00	149.48	262.63																																																																																																																																																																																																																																																																																																																																																																					
101.76	-3.0	50.00	149.48	262.63																																																																																																																																																																																																																																																																																																																																																																					
101.71	-2.8	50.00	140.94	266.26																																																																																																																																																																																																																																																																																																																																																																					
101.65	-2.6	50.00	132.40	269.90																																																																																																																																																																																																																																																																																																																																																																					
101.60	-2.5	50.00	123.89	273.54																																																																																																																																																																																																																																																																																																																																																																					
101.60	-2.5	50.00	123.89	273.54																																																																																																																																																																																																																																																																																																																																																																					
101.55	-2.3	50.00	115.45	277.15																																																																																																																																																																																																																																																																																																																																																																					
101.24	-1.3	50.00	65.05	298.80																																																																																																																																																																																																																																																																																																																																																																					
101.18	-1.1	50.00	56.69	302.41																																																																																																																																																																																																																																																																																																																																																																					
101.18	-1.1	50.00	56.69	302.41																																																																																																																																																																																																																																																																																																																																																																					
101.13	-1.0	50.00	48.33	306.02																																																																																																																																																																																																																																																																																																																																																																					
101.13	-1.0	50.00	48.33	306.02																																																																																																																																																																																																																																																																																																																																																																					
101.09	-0.8	50.00	40.86	309.24																																																																																																																																																																																																																																																																																																																																																																					
100.90	-0.2	50.00	11.02	322.15																																																																																																																																																																																																																																																																																																																																																																					
100.85	-0.1	50.00	3.57	325.38																																																																																																																																																																																																																																																																																																																																																																					
100.85	-0.1	50.00	3.57	325.38																																																																																																																																																																																																																																																																																																																																																																					
100.79	0.1	50.00	-5.44	329.29																																																																																																																																																																																																																																																																																																																																																																					
100.74	0.3	50.00	-14.45	333.19																																																																																																																																																																																																																																																																																																																																																																					
100.68	0.5	50.00	-23.45	337.10																																																																																																																																																																																																																																																																																																																																																																					
100.68	0.5	50.00	-23.45	337.10																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage M1 Schnitt 4L			Seite Anlage M1/8																																																																																																																																																																																																																																																																																																																																																																				
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																				
<div><div><div>100.660.550.00-26.67338.50</div><div>100.660.550.00-26.67338.50</div><div>100.610.750.00-34.93342.08</div><div>100.351.550.00-76.17359.97</div><div>100.301.750.00-84.42363.55</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.18234917</div><div>Theoretischer Fußpunkt = 100.299 m</div><div>Einbindetiefe tg = 5.65 m</div><div>Profillänge = 6.10 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k</div><div>G,k = 111.65 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 37.55 kN/m (Eah,k = 222.07 kN/m)</div><div>Bv,k = 127.15</div><div>Summe V,k = 22.05 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 100.98 bis 97.46 m) ==&gt; 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><thead><tr><th>von</th><th>bis</th><th>qs,k [kN/m²]</th><th>Bezeichnung</th></tr></thead><tbody><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>100.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table></div><div>Mantelfläche bis 100.30 m = 1.000 m²/m/m ==&gt; R,s1,d</div><div>Mantelfläche ab 100.30 m = 2.000 m²/m/m ==&gt; R,s2,d</div><div>Profilverlängerung = 0.20 m ==&gt; R,s2,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 127.60 / 1.40 = 91.14 kN/m</div><div>R,s2,d = R,s2,k / gamma(qs,k) = 22.00 / 1.40 = 15.71 kN/m</div><div>R,d = Rb,d + R,s1,d + R,s2,d = 971.91 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 138.52 - 0.00 + 43.18 + 0.00 = 181.70 kN/m</div><div>==&gt; µ = V,d / R,d = 181.70 / 971.91 = 0.19</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	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	100.10	55.00	s3: Flussskies, -sand
von	bis	qs,k [kN/m²]	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	100.10	55.00	s3: Flussskies, -sand																			
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/9																				
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 1179																				
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 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: 02_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 M1 Schnitt 4L		Seite Anlage M1/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 11110
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 <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>
[-]	[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 automatisch und Fuß gebettet  
Profillänge = 9.20 m

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

Ausnutzungsgrad mue = 469.110 / 475.759 = 0.986  
Bettungslager Bh,d = 469.110 kN/m  
Erdwiderstand Eph,d = 475.759 kN/m

Anker und Steifen  
N<sub>d</sub>' = Bemessungswert (Steifen) mit BS-P (1.275/1.50)  
Nw,k kann Anteil aus Einzelkräften beinhalten.

Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w),k	N(g+w),k	Nw,k	EA	EI	N <sub>d</sub> '
[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]
1	105.00	0.00	1.00	-158.80	-137.53	-137.53	-86.27	6.900E+4	2.100E+7	-175.35 Steife

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

x	y	wx,d	wy,d	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>
[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]
-1.00	105.00	-16.0	0.0	-162.47	0.00	0.00
-0.90	105.00	-16.2	0.0	-162.47	0.00	0.00
-0.90	105.00	-16.2	0.0	-162.47	0.00	0.00
-0.80	105.00	-16.4	0.0	-162.47	0.00	0.00
-0.70	105.00	-16.7	0.0	-162.47	0.00	0.00
-0.60	105.00	-16.9	0.0	-162.47	0.00	0.00
-0.50	105.00	-17.1	0.0	-162.47	0.00	0.00
-0.40	105.00	-17.4	0.0	-162.47	0.00	0.00
-0.30	105.00	-17.6	0.0	-162.47	0.00	0.00
-0.20	105.00	-17.8	0.0	-162.47	0.00	0.00
-0.10	105.00	-18.1	0.0	-162.47	0.00	0.00
0.00	105.00	-18.3	0.0	-162.47	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\01\_BS 4\_LF1.vrb  
eingeliesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	105.00	-0.0139

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 M1 Schnitt 4L	Seite Anlage M1/11
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>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 &lt;&gt; 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>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>97.152</td><td>53.341</td><td>57.301</td><td>5.00</td><td>5.00</td></tr><tr><td>97.152</td><td>96.999</td><td>57.301</td><td>58.093</td><td>5.00</td><td>5.00</td></tr><tr><td>96.999</td><td>95.446</td><td>58.093</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></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	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	97.152	53.341	57.301	5.00	5.00	97.152	96.999	57.301	58.093	5.00	5.00	96.999	95.446	58.093	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
Schicht	UK	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																																																																															
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																																															
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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																																																																																																																																																																																																																																																																																																																																																																																	
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	97.152	53.341	57.301	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																	
97.152	96.999	57.301	58.093	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																																	
96.999	95.446	58.093	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																																																																																																																																																																																																																																																																																																																																																																																	
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/12																																																																																																																																																																																																																																																																																																																																																																																				
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 17112																																																																																																																																																																																																																																																																																																																																																																																				
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>88.88288.21687.38489.1855.005.00</div><div>88.21682.25989.185113.4075.005.00</div><div>82.25980.000113.407122.6735.005.00</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>0.000.00106.20102.55</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 = 1.30</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>102.55102.540.00-0.32</div><div>102.54102.35-0.32-8.31</div><div>102.35102.17-8.31-16.30</div><div>102.17102.07-16.30-20.30</div><div>102.07102.06-20.30-20.94</div><div>102.06101.81-20.94-31.47</div><div>101.81101.76-31.47-33.57</div><div>101.76101.60-33.57-40.29</div><div>101.60101.18-40.29-58.05</div><div>101.18101.13-58.05-60.28</div><div>101.13100.85-60.28-72.19</div><div>100.85100.68-72.19-79.40</div><div>100.68100.66-79.40-80.26</div><div>100.66100.16-80.26-101.73</div><div>100.16100.06-101.73-106.03</div><div>100.0699.60-106.03-125.35</div><div>99.6099.16-125.35-144.25</div><div>99.1698.17-144.25-186.25</div><div>98.1797.92-186.25-196.75</div><div>97.9297.15-196.75-229.41</div><div>97.1597.00-229.41-235.94</div><div>97.0095.45-235.94-301.92</div><div>95.4595.43-301.92-302.78</div><div>95.4393.07-302.78-402.89</div><div>93.0788.88-402.89-580.92</div><div>88.8888.22-580.92-609.24</div><div>88.2282.26-609.24-862.41</div><div>82.2680.00-862.41-958.43</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>106.19-0.2-0.30.0</div><div>105.50-15.2-22.8-8.0</div><div>105.32-19.2-28.8-12.6</div><div>105.15-22.8-34.9-18.0</div><div>105.00-26.1-40.6-23.7-162.5</div><div>105.00-26.1121.9-23.7</div><div>104.74-31.8111.96.7</div><div>104.41-39.099.241.5</div><div>104.41-39.0-8.241.5</div><div>104.38-39.6-9.141.3</div><div>104.20-43.5-14.139.2</div><div>103.75-53.3-26.530.0</div><div>103.74-53.5-26.829.8</div><div>103.60-57.4-30.725.7</div><div>103.47-60.8-34.221.7</div><div>103.46-61.3-34.621.1</div></div></div>							
Schnitt:		Anlage M1 Schnitt 4L				Seite Anlage M1/13	
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>103.35 -64.3 -37.6 17.2</div><div>103.31 -65.3 -38.7 15.8</div><div>103.23 -67.7 -41.0 12.3</div><div>103.21 -68.2 -41.6 11.6</div><div>103.20 -68.4 -41.8 11.3</div><div>103.10 -71.1 -44.5 7.0</div><div>102.98 -74.6 -47.9 1.3</div><div>102.95 -75.3 -48.7 -0.1</div><div>102.94 -75.7 -49.1 -0.8</div><div>102.85 -78.0 -51.4 -4.9</div><div>102.65 -83.5 -57.0 -15.8</div><div>102.62 -84.4 -57.8 -17.6</div><div>102.55 -86.6 -59.8 -21.7</div><div>102.54 -87.0 -60.5 -22.2</div><div>102.35 -90.6 -77.8 -35.2</div><div>102.17 -93.1 -92.8 -51.3</div><div>102.07 -94.0 -99.2 -60.3</div><div>102.06 -94.1 -100.1 -61.8</div><div>101.81 -94.8 -112.4 -88.3</div><div>101.76 -94.8 -114.1 -93.9</div><div>101.60 -94.0 -117.3 -112.2</div><div>101.18 -88.3 -110.1 -160.5</div><div>101.13 -87.2 -107.7 -166.2</div><div>100.85 -79.8 -90.0 -194.1</div><div>100.68 -74.2 -75.5 -208.1</div><div>100.66 -73.4 -73.5 -209.6</div><div>100.16 -51.0 -15.7 -232.9</div><div>100.06 -45.5 -2.0 -233.8</div><div>99.60 -21.2 58.9 -220.2</div><div>99.16 -5.4 97.0 -184.8</div><div>98.17 2.1 107.9 -75.5</div><div>97.92 -1.6 95.8 -50.2</div><div>97.15 -9.8 21.4 -1.7</div><div>97.00 -9.0 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>106.20</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>-0.3</div><div>0.0</div><div></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><div><div>105.32</div><div>-16.7</div><div>-25.1</div><div>-11.0</div><div></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><div><div>105.00</div><div>-22.7</div><div>-35.2</div><div>-20.6</div><div>-137.5</div><div></div></div><div><div>105.00</div><div>-22.7</div><div>102.3</div><div>-20.6</div><div></div><div></div></div><div><div>104.74</div><div>-27.6</div><div>93.6</div><div>4.9</div><div></div><div></div></div><div><div>104.41</div><div>-33.9</div><div>82.7</div><div>34.0</div><div></div><div></div></div><div><div>104.41</div><div>-33.9</div><div>-6.8</div><div>34.0</div><div></div><div></div></div><div><div>104.38</div><div>-34.4</div><div>-7.6</div><div>33.8</div><div></div><div></div></div><div><div>104.20</div><div>-37.8</div><div>-11.9</div><div>32.0</div><div></div><div></div></div><div><div>103.75</div><div>-46.4</div><div>-22.6</div><div>24.2</div><div></div><div></div></div><div><div>103.74</div><div>-46.6</div><div>-22.8</div><div>24.0</div><div></div><div></div></div><div><div>103.60</div><div>-49.9</div><div>-26.2</div><div>20.6</div><div></div><div></div></div><div><div>103.47</div><div>-52.9</div><div>-29.2</div><div>17.1</div><div></div><div></div></div><div><div>103.46</div><div>-53.3</div><div>-29.6</div><div>16.6</div><div></div><div></div></div><div><div>103.35</div><div>-55.9</div><div>-32.1</div><div>13.3</div><div></div><div></div></div><div><div>103.31</div><div>-56.8</div><div>-33.1</div><div>12.1</div><div></div><div></div></div><div><div>103.23</div><div>-58.9</div><div>-35.1</div><div>9.1</div><div></div><div></div></div><div><div>103.21</div><div>-59.3</div><div>-35.6</div><div>8.5</div><div></div><div></div></div><div><div>103.20</div><div>-59.5</div><div>-35.7</div><div>8.2</div><div></div><div></div></div><div><div>103.10</div><div>-61.8</div><div>-38.1</div><div>4.6</div><div></div><div></div></div><div><div>102.98</div><div>-64.8</div><div>-41.0</div><div>-0.3</div><div></div><div></div></div><div><div>102.95</div><div>-65.5</div><div>-41.7</div><div>-1.5</div><div></div><div></div></div><div><div>102.94</div><div>-65.9</div><div>-42.1</div><div>-2.1</div><div></div><div></div></div><div><div>102.85</div><div>-67.8</div><div>-44.0</div><div>-5.6</div><div></div><div></div></div><div><div>102.65</div><div>-72.6</div><div>-48.8</div><div>-15.0</div><div></div><div></div></div><div><div>102.62</div><div>-73.4</div><div>-49.6</div><div>-16.5</div><div></div><div></div></div><div><div>102.55</div><div>-75.3</div><div>-51.3</div><div>-20.1</div><div></div><div></div></div><div><div>102.54</div><div>-75.6</div><div>-51.9</div><div>-20.4</div><div></div><div></div></div><div><div>102.35</div><div>-78.8</div><div>-66.8</div><div>-31.6</div><div></div><div></div></div><div><div>102.17</div><div>-81.0</div><div>-79.9</div><div>-45.5</div><div></div><div></div></div></div></div>		
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 1114
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



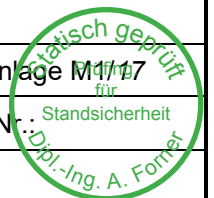
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>102.07 -81.7 -85.5 -53.3</div><div>102.06 -81.8 -86.3 -54.5</div><div>101.81 -82.5 -97.0 -77.3</div><div>101.76 -82.4 -98.4 -82.2</div><div>101.60 -81.8 -101.2 -98.0</div><div>101.18 -76.9 -95.0 -139.6</div><div>101.13 -75.9 -93.0 -144.5</div><div>100.85 -69.5 -77.6 -168.6</div><div>100.68 -64.6 -65.0 -180.7</div><div>100.66 -64.0 -63.3 -182.0</div><div>100.16 -44.5 -13.3 -202.1</div><div>100.06 -39.8 -1.4 -202.8</div><div>99.60 -18.7 51.2 -190.9</div><div>99.16 -5.1 84.1 -160.1</div><div>98.17 1.4 93.5 -65.4</div><div>97.92 -1.8 83.0 -43.5</div><div>97.15 -9.0 18.6 -1.5</div><div>97.00 -8.4 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></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>106.20</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>-0.3</div><div>0.0</div><div></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><div><div>105.32</div><div>-16.7</div><div>-25.1</div><div>-11.0</div><div></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><div><div>105.00</div><div>-22.7</div><div>-35.2</div><div>-20.6</div><div>-137.5</div><div></div></div><div><div>105.00</div><div>-22.7</div><div>102.3</div><div>-20.6</div><div></div><div></div></div><div><div>104.74</div><div>-27.6</div><div>93.6</div><div>4.9</div><div></div><div></div></div><div><div>104.41</div><div>-33.9</div><div>82.7</div><div>34.0</div><div></div><div></div></div><div><div>104.41</div><div>-33.9</div><div>-6.8</div><div>34.0</div><div></div><div></div></div><div><div>104.38</div><div>-34.4</div><div>-7.6</div><div>33.8</div><div></div><div></div></div><div><div>104.20</div><div>-37.8</div><div>-11.9</div><div>32.0</div><div></div><div></div></div><div><div>103.75</div><div>-46.4</div><div>-22.6</div><div>24.2</div><div></div><div></div></div><div><div>103.74</div><div>-46.6</div><div>-22.8</div><div>24.0</div><div></div><div></div></div><div><div>103.60</div><div>-49.9</div><div>-26.2</div><div>20.6</div><div></div><div></div></div><div><div>103.47</div><div>-52.9</div><div>-29.2</div><div>17.1</div><div></div><div></div></div><div><div>103.46</div><div>-53.3</div><div>-29.6</div><div>16.6</div><div></div><div></div></div><div><div>103.35</div><div>-55.9</div><div>-32.1</div><div>13.3</div><div></div><div></div></div><div><div>103.31</div><div>-56.8</div><div>-33.1</div><div>12.1</div><div></div><div></div></div><div><div>103.23</div><div>-58.9</div><div>-35.1</div><div>9.1</div><div></div><div></div></div><div><div>103.21</div><div>-59.3</div><div>-35.6</div><div>8.5</div><div></div><div></div></div><div><div>103.20</div><div>-59.5</div><div>-35.7</div><div>8.2</div><div></div><div></div></div><div><div>103.10</div><div>-61.8</div><div>-38.1</div><div>4.6</div><div></div><div></div></div><div><div>102.98</div><div>-64.8</div><div>-41.0</div><div>-0.3</div><div></div><div></div></div><div><div>102.95</div><div>-65.5</div><div>-41.7</div><div>-1.5</div><div></div><div></div></div><div><div>102.94</div><div>-65.9</div><div>-42.1</div><div>-2.1</div><div></div><div></div></div><div><div>102.85</div><div>-67.8</div><div>-44.0</div><div>-5.6</div><div></div><div></div></div><div><div>102.65</div><div>-72.6</div><div>-48.8</div><div>-15.0</div><div></div><div></div></div><div><div>102.62</div><div>-73.4</div><div>-49.6</div><div>-16.5</div><div></div><div></div></div><div><div>102.55</div><div>-75.3</div><div>-51.3</div><div>-20.1</div><div></div><div></div></div><div><div>102.54</div><div>-75.6</div><div>-51.9</div><div>-20.4</div><div></div><div></div></div><div><div>102.35</div><div>-78.8</div><div>-66.8</div><div>-31.6</div><div></div><div></div></div><div><div>102.17</div><div>-81.0</div><div>-79.9</div><div>-45.5</div><div></div><div></div></div><div><div>102.07</div><div>-81.7</div><div>-85.5</div><div>-53.3</div><div></div><div></div></div><div><div>102.06</div><div>-81.8</div><div>-86.3</div><div>-54.5</div><div></div><div></div></div><div><div>101.81</div><div>-82.5</div><div>-97.0</div><div>-77.3</div><div></div><div></div></div><div><div>101.76</div><div>-82.4</div><div>-98.4</div><div>-82.2</div><div></div><div></div></div><div><div>101.60</div><div>-81.8</div><div>-101.2</div><div>-98.0</div><div></div><div></div></div><div><div>101.18</div><div>-76.9</div><div>-95.0</div><div>-139.6</div><div></div><div></div></div><div><div>101.13</div><div>-75.9</div><div>-93.0</div><div>-144.5</div><div></div><div></div></div><div><div>100.85</div><div>-69.5</div><div>-77.6</div><div>-168.6</div><div></div><div></div></div><div><div>100.68</div><div>-64.6</div><div>-65.0</div><div>-180.7</div><div></div><div></div></div><div><div>100.66</div><div>-64.0</div><div>-63.3</div><div>-182.0</div><div></div><div></div></div><div><div>100.16</div><div>-44.5</div><div>-13.3</div><div>-202.1</div><div></div><div></div></div><div><div>100.06</div><div>-39.8</div><div>-1.4</div><div>-202.8</div><div></div><div></div></div><div><div>99.60</div><div>-18.7</div><div>51.2</div><div>-190.9</div><div></div><div></div></div><div><div>99.16</div><div>-5.1</div><div>84.1</div><div>-160.1</div><div></div><div></div></div><div><div>98.17</div><div>1.4</div><div>93.5</div><div>-65.4</div><div></div><div></div></div><div><div>97.92</div><div>-1.8</div><div>83.0</div><div>-43.5</div><div></div><div></div></div></div></div>					
Schnitt:		Anlage M1 Schnitt 4L		Seite Anlage M1/15	
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><div><div><div>97.15</div><div>-9.0</div><div>18.6</div><div>-1.5</div></div><div><div>97.00</div><div>-8.4</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>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>106.19</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>105.00</div><div>0.0</div><div>0.0</div><div>0.0</div><div>-73.3</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>104.38</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>103.60</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>100.16</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>100.06</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>97.15</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>97.00</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>[m]</div><div>[mm]</div><div>[kN/m³]</div><div>[kN/m²]</div><div>[kN/m²]</div></div><div><div>106.20</div><div>-18.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.19</div><div>-18.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.19</div><div>-18.8</div><div>-</div><div>-</div><div>-</div></div><div><div>106.14</div><div>-18.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-17.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-17.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-17.1</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-17.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.36</div><div>-16.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.32</div><div>-16.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.32</div><div>-16.7</div><div>-</div><div>-</div><div>-</div></div></div></div></div></div>					
Schnitt:		Anlage M1 Schnitt 4L		Seite Anlage M1/16	
Kapitel:		2 LF 2 (BS-T)		Archiv Nr.: 11716	
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>105.26</div> <div>-16.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.20</div> <div>-16.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.15</div> <div>-16.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.15</div> <div>-16.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.10</div> <div>-16.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.05</div> <div>-16.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-15.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.00</div> <div>-15.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.95</div> <div>-15.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.79</div> <div>-15.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.74</div> <div>-15.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>104.74</div> <div>-15.2</div> 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<div>-12.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.47</div> <div>-12.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.46</div> <div>-12.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.46</div> <div>-12.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-11.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.40</div> <div>-11.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.35</div> <div>-11.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.35</div> <div>-11.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.31</div> <div>-11.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.31</div> <div>-11.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.27</div> <div>-11.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.27</div> <div>-11.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.23</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.23</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.21</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.21</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.20</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.20</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> 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Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/17
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 11117
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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</tr><tr><td>100.11</td><td>-3.9</td><td>43.36</td><td>168.82</td><td>168.81</td><td></td><td></td></tr><tr><td>100.06</td><td>-3.8</td><td>43.36</td><td>164.36</td><td>172.30</td><td></td><td></td></tr><tr><td>100.06</td><td>-3.8</td><td>45.46</td><td>172.31</td><td>172.30</td><td></td><td></td></tr><tr><td>100.00</td><td>-3.7</td><td>45.46</td><td>167.67</td><td>175.79</td><td></td><td></td></tr><tr><td>99.65</td><td>-3.0</td><td>50.00</td><td>149.98</td><td>200.21</td><td></td><td></td></tr><tr><td>99.60</td><td>-2.9</td><td>50.00</td><td>145.23</td><td>203.70</td><td></td><td></td></tr><tr><td>99.60</td><td>-2.9</td><td>50.00</td><td>145.23</td><td>203.70</td><td></td><td></td></tr><tr><td>99.55</td><td>-2.8</td><td>50.00</td><td>140.62</td><td>207.11</td><td></td><td></td></tr><tr><td>99.21</td><td>-2.2</td><td>50.00</td><td>109.43</td><td>231.00</td><td></td><td></td></tr><tr><td>99.16</td><td>-2.1</td><td>50.00</td><td>105.12</td><td>234.41</td><td></td><td></td></tr><tr><td>99.16</td><td>-2.1</td><td>50.00</td><td>105.12</td><td>234.41</td><td></td><td></td></tr><tr><td>99.11</td><td>-2.0</td><td>50.00</td><td>100.84</td><td>237.82</td><td></td><td></td></tr><tr><td>98.22</td><td>-0.6</td><td>50.00</td><td>28.39</td><td>299.24</td><td></td><td></td></tr><tr><td>98.17</td><td>-0.5</td><td>50.00</td><td>24.56</td><td>302.65</td><td></td><td></td></tr><tr><td>98.17</td><td>-0.5</td><td>50.00</td><td>24.56</td><td>302.65</td><td></td><td></td></tr><tr><td>98.12</td><td>-0.4</td><td>50.00</td><td>20.74</td><td>306.06</td><td></td><td></td></tr><tr><td>97.97</td><td>-0.2</td><td>50.00</td><td>9.36</td><td>316.30</td><td></td><td></td></tr><tr><td>97.92</td><td>-0.1</td><td>50.00</td><td>5.58</td><td>319.71</td><td></td><td></td></tr><tr><td>97.92</td><td>-0.1</td><td>50.00</td><td>5.58</td><td>319.71</td><td></td><td></td></tr></table>							102.65	-9.9	-	-	-			102.62	-9.9	-	-	-			102.62	-9.9	-	-	-			102.55	-9.7	0.00	0.00	0.00			102.55	-9.7	0.00	0.00	0.00			102.54	-9.7	0.00	0.00	0.51			102.54	-9.7	0.05	0.51	0.51			102.50	-9.5	0.05	0.51	3.76			102.40	-9.3	1.10	10.25	10.25			102.35	-9.2	1.10	10.12	13.50			102.35	-9.2	1.47	13.50	13.50			102.31	-9.1	1.47	13.32	16.75			102.21	-8.8	2.64	23.24	23.24			102.17	-8.7	2.64	22.93	26.49			102.17	-8.7	3.04	26.49	26.49			102.12	-8.6	3.04	26.13	29.74			102.12	-8.6	3.47	29.74	29.74			102.07	-8.5	3.47	29.33	32.99			102.07	-8.5	3.90	32.99	32.99			102.06	-8.4	3.90	32.84	34.03			102.06	-8.4	4.04	34.03	34.03			102.01	-8.3	4.04	33.52	37.45			101.86	-7.9	6.02	47.72	47.71			101.81	-7.8	6.02	46.97	51.14			101.81	-7.8	6.55	51.14	51.14			101.76	-7.7	6.55	50.33	54.56			101.76	-7.7	7.10	54.56	54.56			101.71	-7.6	7.10	53.63	58.19			101.65	-7.4	8.33	61.83	61.83			101.60	-7.3	8.33	60.75	65.47			101.60	-7.3	8.98	65.47	65.47			101.55	-7.2	8.98	64.32	69.08			101.24	-6.4	14.16	90.73	90.73			101.18	-6.3	14.16	88.98	94.34			101.18	-6.3	15.01	94.34	94.34			101.13	-6.2	15.01	92.49	97.95			101.13	-6.2	15.90	97.95	97.95			101.09	-6.1	15.90	96.20	101.18			100.90	-5.6	20.31	114.09	114.09			100.85	-5.5	20.31	111.92	117.31			100.85	-5.5	21.29	117.32	117.31			100.79	-5.4	21.29	114.58	121.22			100.74	-5.3	23.82	125.13	125.12			100.68	-5.1	23.82	122.11	129.03			100.68	-5.1	25.17	129.04	129.03			100.66	-5.1	25.17	127.90	130.43			100.66	-5.1	25.67	130.43	130.43			100.61	-5.0	25.67	127.55	133.92			100.21	-4.1	39.46	161.84	161.83			100.16	-4.0	39.46	157.71	165.32			100.16	-4.0	41.36	165.33	165.32			100.11	-3.9	41.36	161.04	168.81			100.11	-3.9	43.36	168.82	168.81			100.06	-3.8	43.36	164.36	172.30			100.06	-3.8	45.46	172.31	172.30			100.00	-3.7	45.46	167.67	175.79			99.65	-3.0	50.00	149.98	200.21			99.60	-2.9	50.00	145.23	203.70			99.60	-2.9	50.00	145.23	203.70			99.55	-2.8	50.00	140.62	207.11			99.21	-2.2	50.00	109.43	231.00			99.16	-2.1	50.00	105.12	234.41			99.16	-2.1	50.00	105.12	234.41			99.11	-2.0	50.00	100.84	237.82			98.22	-0.6	50.00	28.39	299.24			98.17	-0.5	50.00	24.56	302.65			98.17	-0.5	50.00	24.56	302.65			98.12	-0.4	50.00	20.74	306.06			97.97	-0.2	50.00	9.36	316.30			97.92	-0.1	50.00	5.58	319.71			97.92	-0.1	50.00	5.58	319.71		
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102.35	-9.2	1.47	13.50	13.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.31	-9.1	1.47	13.32	16.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.21	-8.8	2.64	23.24	23.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.17	-8.7	2.64	22.93	26.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.17	-8.7	3.04	26.49	26.49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.12	-8.6	3.04	26.13	29.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.12	-8.6	3.47	29.74	29.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.07	-8.5	3.47	29.33	32.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.07	-8.5	3.90	32.99	32.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.4	3.90	32.84	34.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.06	-8.4	4.04	34.03	34.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
102.01	-8.3	4.04	33.52	37.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.86	-7.9	6.02	47.72	47.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.81	-7.8	6.02	46.97	51.14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.81	-7.8	6.55	51.14	51.14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.76	-7.7	6.55	50.33	54.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.76	-7.7	7.10	54.56	54.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.71	-7.6	7.10	53.63	58.19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.65	-7.4	8.33	61.83	61.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.60	-7.3	8.33	60.75	65.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.60	-7.3	8.98	65.47	65.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.55	-7.2	8.98	64.32	69.08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.24	-6.4	14.16	90.73	90.73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.18	-6.3	14.16	88.98	94.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.18	-6.3	15.01	94.34	94.34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.13	-6.2	15.01	92.49	97.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.13	-6.2	15.90	97.95	97.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.09	-6.1	15.90	96.20	101.18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.90	-5.6	20.31	114.09	114.09																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.85	-5.5	20.31	111.92	117.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.85	-5.5	21.29	117.32	117.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.79	-5.4	21.29	114.58	121.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.74	-5.3	23.82	125.13	125.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.68	-5.1	23.82	122.11	129.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.68	-5.1	25.17	129.04	129.03																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.66	-5.1	25.17	127.90	130.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.66	-5.1	25.67	130.43	130.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.61	-5.0	25.67	127.55	133.92																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.21	-4.1	39.46	161.84	161.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.16	-4.0	39.46	157.71	165.32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.16	-4.0	41.36	165.33	165.32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.11	-3.9	41.36	161.04	168.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.11	-3.9	43.36	168.82	168.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.06	-3.8	43.36	164.36	172.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.06	-3.8	45.46	172.31	172.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.00	-3.7	45.46	167.67	175.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.65	-3.0	50.00	149.98	200.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.60	-2.9	50.00	145.23	203.70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.60	-2.9	50.00	145.23	203.70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.55	-2.8	50.00	140.62	207.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.21	-2.2	50.00	109.43	231.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.16	-2.1	50.00	105.12	234.41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.16	-2.1	50.00	105.12	234.41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
99.11	-2.0	50.00	100.84	237.82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.22	-0.6	50.00	28.39	299.24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.17	-0.5	50.00	24.56	302.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.17	-0.5	50.00	24.56	302.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
98.12	-0.4	50.00	20.74	306.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
97.97	-0.2	50.00	9.36	316.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
97.92	-0.1	50.00	5.58	319.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
97.92	-0.1	50.00	5.58	319.71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Schnitt:		Anlage M1 Schnitt 4L			Seite Anlage M1/18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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

97.87	0.0	50.00	1.68	323.25
97.20	1.0	50.00	-48.56	369.25
97.15	1.0	50.00	-52.41	372.79
97.15	1.0	50.00	-52.41	372.79
97.10	1.1	50.00	-56.26	376.33
97.05	1.2	50.00	-60.11	379.87
97.00	1.3	50.00	-63.95	383.40

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k}$ : -0.08604981  
Theoretischer Fußpunkt = 96.999 m

Einbindetiefe  $t_g$  = 5.55 m  
Profillänge = 9.20 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}$   
 $G_{v,k}$  = 174.09 kN/m  
 $G'_{v,k}$  = 0.00 kN/m  
 $P_{v,k}$  = 0.00 kN/m  
 $E_{av,k}$  = 70.08 kN/m ( $E_{ah,k}$  = 385.73 kN/m)  
 $B_{v,k}$  = 161.34  
Summe  $V_{v,k}$  = 82.84 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/m<sup>2</sup>  
(gemittelt von 97.88 bis 94.36 m)  $\Rightarrow q_{b,k}$  = 1.60 MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma_m(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung

von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
102.55	97.00	55.00	s3: Flussskies, -sand

Mantelfläche bis 97.00 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma_m(q_{s,k}) = 1.000 \cdot 305.25 / 1.40 = 218.04$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 1083.08$  kN/m

Einwirkungen  
 $V_{d} = G_{d} - G'_{v,k} + E_{av,d} + P_{v,d} = 208.91 - 0.00 + 80.59 + 0.00 = 289.50$  kN/m  
 $\Rightarrow \mu = V_{d} / R_{d} = 289.50 / 1083.08 = 0.27$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage M1 Schnitt 4L	Seite Anlage M1/19
Kapitel: 2 LF 2 (BS-T)	Archiv Nr.: 11119
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 4  
Datei: 03\_BS 4\_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 = 106.20 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	74.30	2.14	103.74	102.85	100.66	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	46.70	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

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

Schnitt:	Anlage M1	Schnitt 4L	Seite Anlage M1/20
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																																																																																																																																																																																																																									
<p>Kraftränder Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv)</p> <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> <p>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 9.00 m</p> <p>Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000</p> <p>Ausnutzungsgrad <math>\mu_e = 416.119 / 417.326 = 0.997</math> Bettungslager <math>B_{h,d} = 416.119 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 417.326 \text{ kN/m}</math></p> <p>Anker und Steifen <math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50) <math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten.</p> <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>-209.90</td><td>-180.72</td><td>-180.72</td><td>-149.79</td><td>3.900E+7</td><td>2.100E+7</td><td>-230.42 Steife</td></tr></table> <p>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d,d}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</p> <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>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-14.6</td><td>0.0</td><td>-215.32</td><td>0.00</td><td>0.00</td></tr></table> <p>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\02_BS 4_LF2.vrb eingelesen.</p> <p>Anker/Steife Tiefe Vorverformung</p> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0127</td></tr></table> <p>Bodenkennwerte</p> <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> <p>Erhöhte aktive Erddruckbeiwerte Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</p>			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	-209.90	-180.72	-180.72	-149.79	3.900E+7	2.100E+7	-230.42 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	-14.6	0.0	-215.32	0.00	0.00	-7.47	103.72	-14.6	0.0	-215.32	0.00	0.00	-7.47	103.72	-14.6	0.0	-215.32	0.00	0.00	-6.64	103.72	-14.6	0.0	-215.32	0.00	0.00	-5.81	103.72	-14.6	0.0	-215.32	0.00	0.00	-4.98	103.72	-14.6	0.0	-215.32	0.00	0.00	-4.15	103.72	-14.6	0.0	-215.32	0.00	0.00	-3.32	103.72	-14.6	0.0	-215.32	0.00	0.00	-2.49	103.72	-14.6	0.0	-215.32	0.00	0.00	-1.66	103.72	-14.6	0.0	-215.32	0.00	0.00	-0.83	103.72	-14.6	0.0	-215.32	0.00	0.00	0.00	103.72	-14.6	0.0	-215.32	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0127	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
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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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<div>Ersatzerddruck-Beiwert <math>k_a</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>) 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>106.200</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>100.257</td><td>39.055</td><td>41.215</td><td>0.00</td><td>0.00</td></tr><tr><td>100.257</td><td>100.156</td><td>41.215</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>97.199</td><td>53.341</td><td>57.063</td><td>0.00</td><td>0.00</td></tr><tr><td>97.199</td><td>95.446</td><td>57.063</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><tr><td>88.882</td><td>88.216</td><td>87.384</td><td>89.185</td><td>0.00</td><td>0.00</td></tr><tr><td>88.216</td><td>82.259</td><td>89.185</td><td>113.407</td><td>0.00</td><td>0.00</td></tr><tr><td>82.259</td><td>80.000</td><td>113.407</td><td>122.673</td><td>0.00</td><td>0.00</td></tr></tbody></table>			Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	102.072	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	100.257	39.055	41.215	0.00	0.00	100.257	100.156	41.215	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	97.199	53.341	57.063	0.00	0.00	97.199	95.446	57.063	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	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
Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																																																																											
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																																																											
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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																																																																																																																																																																																																																																																																																																																																																																																													
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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	100.257	39.055	41.215	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																													
100.257	100.156	41.215	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	97.199	53.341	57.063	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																																													
97.199	95.446	57.063	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																																																																																																																																																																																																																																																																																																																																																																																													
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																																																																																																																																																																																																																																																																																																																																																																																													
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/22																																																																																																																																																																																																																																																																																																																																																																																																
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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>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 -80.26 100.66 100.26 -80.26 -97.44 100.26 100.16 -97.44 -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 97.20 -196.75 -227.44 97.20 95.45 -227.44 -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 -215.3 103.72 -78.7 76.8 -118.7 103.60 -82.1 71.0 -109.7 103.47 -86.0 63.7 -101.3 103.46 -86.6 62.5 -100.3 103.35 -90.4 54.2 -94.0 103.31 -91.9 51.0 -92.0 103.23 -95.3 43.0 -87.9 103.21 -96.0 41.1 -87.1</div>		
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/23
Kapitel: 3 LF 3 (BS-T)		Archiv Nr. 23
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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<table><tr><td>103.20</td><td>-96.4</td><td>40.3</td><td>-86.8</td><td></td><td></td></tr><tr><td>103.10</td><td>-100.6</td><td>29.8</td><td>-83.4</td><td></td><td></td></tr><tr><td>102.98</td><td>-106.2</td><td>15.3</td><td>-80.6</td><td></td><td></td></tr><tr><td>102.95</td><td>-107.5</td><td>11.8</td><td>-80.2</td><td></td><td></td></tr><tr><td>102.94</td><td>-108.2</td><td>10.0</td><td>-80.0</td><td></td><td></td></tr><tr><td>102.85</td><td>-112.1</td><td>-0.6</td><td>-79.6</td><td></td><td></td></tr><tr><td>102.65</td><td>-122.5</td><td>-29.7</td><td>-82.6</td><td></td><td></td></tr><tr><td>102.62</td><td>-124.3</td><td>-34.7</td><td>-83.7</td><td></td><td></td></tr><tr><td>102.55</td><td>-128.2</td><td>-43.3</td><td>-86.4</td><td></td><td></td></tr><tr><td>102.54</td><td>-128.6</td><td>-43.9</td><td>-86.7</td><td></td><td></td></tr><tr><td>102.35</td><td>-132.3</td><td>-60.1</td><td>-96.5</td><td></td><td></td></tr><tr><td>102.17</td><td>-134.8</td><td>-74.1</td><td>-109.2</td><td></td><td></td></tr><tr><td>102.07</td><td>-135.6</td><td>-79.9</td><td>-116.4</td><td></td><td></td></tr><tr><td>102.06</td><td>-135.7</td><td>-80.7</td><td>-117.6</td><td></td><td></td></tr><tr><td>101.81</td><td>-136.5</td><td>-91.6</td><td>-139.1</td><td></td><td></td></tr><tr><td>101.76</td><td>-136.5</td><td>-93.0</td><td>-143.7</td><td></td><td></td></tr><tr><td>101.60</td><td>-135.7</td><td>-95.3</td><td>-158.6</td><td></td><td></td></tr><tr><td>101.18</td><td>-130.0</td><td>-85.9</td><td>-197.2</td><td></td><td></td></tr><tr><td>101.13</td><td>-128.9</td><td>-83.2</td><td>-201.6</td><td></td><td></td></tr><tr><td>100.85</td><td>-121.6</td><td>-64.0</td><td>-222.4</td><td></td><td></td></tr><tr><td>100.68</td><td>-116.0</td><td>-48.7</td><td>-232.0</td><td></td><td></td></tr><tr><td>100.66</td><td>-115.2</td><td>-46.6</td><td>-232.9</td><td></td><td></td></tr><tr><td>100.26</td><td>-98.0</td><td>0.1</td><td>-242.7</td><td></td><td></td></tr><tr><td>100.16</td><td>-92.9</td><td>13.6</td><td>-242.0</td><td></td><td></td></tr><tr><td>99.60</td><td>-66.8</td><td>81.6</td><td>-214.2</td><td></td><td></td></tr><tr><td>99.16</td><td>-55.3</td><td>111.1</td><td>-170.5</td><td></td><td></td></tr><tr><td>98.17</td><td>-57.8</td><td>102.3</td><td>-56.9</td><td></td><td></td></tr><tr><td>97.92</td><td>-62.1</td><td>84.8</td><td>-33.7</td><td></td><td></td></tr><tr><td>97.20</td><td>-62.4</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>0.0</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>-180.7</td><td></td></tr><tr><td>103.72</td><td>-67.5</td><td>64.8</td><td>-99.5</td><td></td><td></td></tr><tr><td>103.60</td><td>-70.5</td><td>59.9</td><td>-92.0</td><td></td><td></td></tr><tr><td>103.47</td><td>-73.9</td><td>53.7</td><td>-84.9</td><td></td><td></td></tr><tr><td>103.46</td><td>-74.4</td><td>52.7</td><td>-84.0</td><td></td><td></td></tr><tr><td>103.35</td><td>-77.8</td><td>45.5</td><td>-78.7</td><td></td><td></td></tr><tr><td>103.31</td><td>-79.0</td><td>42.8</td><td>-77.0</td><td></td><td></td></tr><tr><td>103.23</td><td>-81.9</td><td>35.9</td><td>-73.6</td><td></td><td></td></tr><tr><td>103.21</td><td>-82.6</td><td>34.3</td><td>-73.0</td><td></td><td></td></tr><tr><td>103.20</td><td>-82.9</td><td>33.6</td><td>-72.7</td><td></td><td></td></tr><tr><td>103.10</td><td>-86.6</td><td>24.5</td><td>-69.9</td><td></td><td></td></tr><tr><td>102.98</td><td>-91.4</td><td>12.1</td><td>-67.6</td><td></td><td></td></tr><tr><td>102.95</td><td>-92.6</td><td>9.0</td><td>-67.3</td><td></td><td></td></tr><tr><td>102.94</td><td>-93.2</td><td>7.5</td><td>-67.2</td><td></td><td></td></tr><tr><td>102.85</td><td>-96.6</td><td>-1.6</td><td>-66.9</td><td></td><td></td></tr><tr><td>102.65</td><td>-105.7</td><td>-26.7</td><td>-69.7</td><td></td><td></td></tr><tr><td>102.62</td><td>-107.2</td><td>-31.0</td><td>-70.6</td><td></td><td></td></tr><tr><td>102.55</td><td>-110.6</td><td>-38.4</td><td>-73.1</td><td></td><td></td></tr><tr><td>102.54</td><td>-111.0</td><td>-38.9</td><td>-73.4</td><td></td><td></td></tr><tr><td>102.35</td><td>-114.1</td><td>-53.0</td><td>-82.0</td><td></td><td></td></tr><tr><td>102.17</td><td>-116.3</td><td>-65.1</td><td>-93.2</td><td></td><td></td></tr><tr><td>102.07</td><td>-117.1</td><td>-70.2</td><td>-99.5</td><td></td><td></td></tr><tr><td>102.06</td><td>-117.1</td><td>-70.9</td><td>-100.6</td><td></td><td></td></tr><tr><td>101.81</td><td>-117.8</td><td>-80.4</td><td>-119.4</td><td></td><td></td></tr><tr><td>101.76</td><td>-117.8</td><td>-81.6</td><td>-123.4</td><td></td><td></td></tr></table></div>						103.20	-96.4	40.3	-86.8			103.10	-100.6	29.8	-83.4			102.98	-106.2	15.3	-80.6			102.95	-107.5	11.8	-80.2			102.94	-108.2	10.0	-80.0			102.85	-112.1	-0.6	-79.6			102.65	-122.5	-29.7	-82.6			102.62	-124.3	-34.7	-83.7			102.55	-128.2	-43.3	-86.4			102.54	-128.6	-43.9	-86.7			102.35	-132.3	-60.1	-96.5			102.17	-134.8	-74.1	-109.2			102.07	-135.6	-79.9	-116.4			102.06	-135.7	-80.7	-117.6			101.81	-136.5	-91.6	-139.1			101.76	-136.5	-93.0	-143.7			101.60	-135.7	-95.3	-158.6			101.18	-130.0	-85.9	-197.2			101.13	-128.9	-83.2	-201.6			100.85	-121.6	-64.0	-222.4			100.68	-116.0	-48.7	-232.0			100.66	-115.2	-46.6	-232.9			100.26	-98.0	0.1	-242.7			100.16	-92.9	13.6	-242.0			99.60	-66.8	81.6	-214.2			99.16	-55.3	111.1	-170.5			98.17	-57.8	102.3	-56.9			97.92	-62.1	84.8	-33.7			97.20	-62.4	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	-180.7		103.72	-67.5	64.8	-99.5			103.60	-70.5	59.9	-92.0			103.47	-73.9	53.7	-84.9			103.46	-74.4	52.7	-84.0			103.35	-77.8	45.5	-78.7			103.31	-79.0	42.8	-77.0			103.23	-81.9	35.9	-73.6			103.21	-82.6	34.3	-73.0			103.20	-82.9	33.6	-72.7			103.10	-86.6	24.5	-69.9			102.98	-91.4	12.1	-67.6			102.95	-92.6	9.0	-67.3			102.94	-93.2	7.5	-67.2			102.85	-96.6	-1.6	-66.9			102.65	-105.7	-26.7	-69.7			102.62	-107.2	-31.0	-70.6			102.55	-110.6	-38.4	-73.1			102.54	-111.0	-38.9	-73.4			102.35	-114.1	-53.0	-82.0			102.17	-116.3	-65.1	-93.2			102.07	-117.1	-70.2	-99.5			102.06	-117.1	-70.9	-100.6			101.81	-117.8	-80.4	-119.4			101.76	-117.8	-81.6	-123.4		
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102.85	-112.1	-0.6	-79.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-122.5	-29.7	-82.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-124.3	-34.7	-83.7																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-128.2	-43.3	-86.4																																																																																																																																																																																																																																																																																																																																																																																																																																
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102.17	-134.8	-74.1	-109.2																																																																																																																																																																																																																																																																																																																																																																																																																																
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101.81	-136.5	-91.6	-139.1																																																																																																																																																																																																																																																																																																																																																																																																																																
101.76	-136.5	-93.0	-143.7																																																																																																																																																																																																																																																																																																																																																																																																																																
101.60	-135.7	-95.3	-158.6																																																																																																																																																																																																																																																																																																																																																																																																																																
101.18	-130.0	-85.9	-197.2																																																																																																																																																																																																																																																																																																																																																																																																																																
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100.85	-121.6	-64.0	-222.4																																																																																																																																																																																																																																																																																																																																																																																																																																
100.68	-116.0	-48.7	-232.0																																																																																																																																																																																																																																																																																																																																																																																																																																
100.66	-115.2	-46.6	-232.9																																																																																																																																																																																																																																																																																																																																																																																																																																
100.26	-98.0	0.1	-242.7																																																																																																																																																																																																																																																																																																																																																																																																																																
100.16	-92.9	13.6	-242.0																																																																																																																																																																																																																																																																																																																																																																																																																																
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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																																																																																																																																																																																																																																																																																																																																																																																																																																
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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	-180.7																																																																																																																																																																																																																																																																																																																																																																																																																															
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103.60	-70.5	59.9	-92.0																																																																																																																																																																																																																																																																																																																																																																																																																																
103.47	-73.9	53.7	-84.9																																																																																																																																																																																																																																																																																																																																																																																																																																
103.46	-74.4	52.7	-84.0																																																																																																																																																																																																																																																																																																																																																																																																																																
103.35	-77.8	45.5	-78.7																																																																																																																																																																																																																																																																																																																																																																																																																																
103.31	-79.0	42.8	-77.0																																																																																																																																																																																																																																																																																																																																																																																																																																
103.23	-81.9	35.9	-73.6																																																																																																																																																																																																																																																																																																																																																																																																																																
103.21	-82.6	34.3	-73.0																																																																																																																																																																																																																																																																																																																																																																																																																																
103.20	-82.9	33.6	-72.7																																																																																																																																																																																																																																																																																																																																																																																																																																
103.10	-86.6	24.5	-69.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.98	-91.4	12.1	-67.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.95	-92.6	9.0	-67.3																																																																																																																																																																																																																																																																																																																																																																																																																																
102.94	-93.2	7.5	-67.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.85	-96.6	-1.6	-66.9																																																																																																																																																																																																																																																																																																																																																																																																																																
102.65	-105.7	-26.7	-69.7																																																																																																																																																																																																																																																																																																																																																																																																																																
102.62	-107.2	-31.0	-70.6																																																																																																																																																																																																																																																																																																																																																																																																																																
102.55	-110.6	-38.4	-73.1																																																																																																																																																																																																																																																																																																																																																																																																																																
102.54	-111.0	-38.9	-73.4																																																																																																																																																																																																																																																																																																																																																																																																																																
102.35	-114.1	-53.0	-82.0																																																																																																																																																																																																																																																																																																																																																																																																																																
102.17	-116.3	-65.1	-93.2																																																																																																																																																																																																																																																																																																																																																																																																																																
102.07	-117.1	-70.2	-99.5																																																																																																																																																																																																																																																																																																																																																																																																																																
102.06	-117.1	-70.9	-100.6																																																																																																																																																																																																																																																																																																																																																																																																																																
101.81	-117.8	-80.4	-119.4																																																																																																																																																																																																																																																																																																																																																																																																																																
101.76	-117.8	-81.6	-123.4																																																																																																																																																																																																																																																																																																																																																																																																																																
Schnitt: Anlage M1 Schnitt 4L				Seite Anlage M1/24																																																																																																																																																																																																																																																																																																																																																																																																																															
Kapitel: 3 LF 3 (BS-T)				Archiv Nr.: 1124																																																																																																																																																																																																																																																																																																																																																																																																																															
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>101.60 -117.2 -83.6 -136.5</div><div>101.18 -112.2 -75.3 -170.4</div><div>101.13 -111.3 -73.0 -174.2</div><div>100.85 -104.9 -56.3 -192.5</div><div>100.68 -100.0 -42.9 -201.0</div><div>100.66 -99.4 -41.1 -201.8</div><div>100.26 -84.4 -0.4 -210.5</div><div>100.16 -80.0 11.3 -210.0</div><div>99.60 -57.4 70.6 -186.0</div><div>99.16 -47.4 96.4 -148.1</div><div>98.17 -49.7 88.9 -49.5</div><div>97.92 -53.5 73.7 -29.3</div><div>97.20 -53.7 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></div></div><div><div>[mNHN]</div><div>[kN/m]</div><div></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>-180.7</div><div></div></div><div><div>103.72</div><div>-67.5</div><div>64.8</div><div>-99.5</div><div></div><div></div></div><div><div>103.60</div><div>-70.5</div><div>59.9</div><div>-92.0</div><div></div><div></div></div><div><div>103.47</div><div>-73.9</div><div>53.7</div><div>-84.9</div><div></div><div></div></div><div><div>103.46</div><div>-74.4</div><div>52.7</div><div>-84.0</div><div></div><div></div></div><div><div>103.35</div><div>-77.8</div><div>45.5</div><div>-78.7</div><div></div><div></div></div><div><div>103.31</div><div>-79.0</div><div>42.8</div><div>-77.0</div><div></div><div></div></div><div><div>103.23</div><div>-81.9</div><div>35.9</div><div>-73.6</div><div></div><div></div></div><div><div>103.21</div><div>-82.6</div><div>34.3</div><div>-73.0</div><div></div><div></div></div><div><div>103.20</div><div>-82.9</div><div>33.6</div><div>-72.7</div><div></div><div></div></div><div><div>103.10</div><div>-86.6</div><div>24.5</div><div>-69.9</div><div></div><div></div></div><div><div>102.98</div><div>-91.4</div><div>12.1</div><div>-67.6</div><div></div><div></div></div><div><div>102.95</div><div>-92.6</div><div>9.0</div><div>-67.3</div><div></div><div></div></div><div><div>102.94</div><div>-93.2</div><div>7.5</div><div>-67.2</div><div></div><div></div></div><div><div>102.85</div><div>-96.6</div><div>-1.6</div><div>-66.9</div><div></div><div></div></div><div><div>102.65</div><div>-105.7</div><div>-26.7</div><div>-69.7</div><div></div><div></div></div><div><div>102.62</div><div>-107.2</div><div>-31.0</div><div>-70.6</div><div></div><div></div></div><div><div>102.55</div><div>-110.6</div><div>-38.4</div><div>-73.1</div><div></div><div></div></div><div><div>102.54</div><div>-111.0</div><div>-38.9</div><div>-73.4</div><div></div><div></div></div><div><div>102.35</div><div>-114.1</div><div>-53.0</div><div>-82.0</div><div></div><div></div></div><div><div>102.17</div><div>-116.3</div><div>-65.1</div><div>-93.2</div><div></div><div></div></div><div><div>102.07</div><div>-117.1</div><div>-70.2</div><div>-99.5</div><div></div><div></div></div><div><div>102.06</div><div>-117.1</div><div>-70.9</div><div>-100.6</div><div></div><div></div></div><div><div>101.81</div><div>-117.8</div><div>-80.4</div><div>-119.4</div><div></div><div></div></div><div><div>101.76</div><div>-117.8</div><div>-81.6</div><div>-123.4</div><div></div><div></div></div><div><div>101.60</div><div>-117.2</div><div>-83.6</div><div>-136.5</div><div></div><div></div></div><div><div>101.18</div><div>-112.2</div><div>-75.3</div><div>-170.4</div><div></div><div></div></div><div><div>101.13</div><div>-111.3</div><div>-73.0</div><div>-174.2</div><div></div><div></div></div><div><div>100.85</div><div>-104.9</div><div>-56.3</div><div>-192.5</div><div></div><div></div></div><div><div>100.68</div><div>-100.0</div><div>-42.9</div><div>-201.0</div><div></div><div></div></div><div><div>100.66</div><div>-99.4</div><div>-41.1</div><div>-201.8</div><div></div><div></div></div><div><div>100.26</div><div>-84.4</div><div>-0.4</div><div>-210.5</div><div></div><div></div></div><div><div>100.16</div><div>-80.0</div><div>11.3</div><div>-210.0</div><div></div><div></div></div><div><div>99.60</div><div>-57.4</div><div>70.6</div><div>-186.0</div><div></div><div></div></div><div><div>99.16</div><div>-47.4</div><div>96.4</div><div>-148.1</div><div></div><div></div></div><div><div>98.17</div><div>-49.7</div><div>88.9</div><div>-49.5</div><div></div><div><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(q,k)</div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div><div>A(h)</div><div></div></div></div></div>					
Schnitt:		Anlage M1 Schnitt 4L		Seite Anlage M1/25	
Kapitel:		3 LF 3 (BS-T)		Archiv Nr.: 11/25	
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																																																																																																																																																																																																																																																																																																																																																																																																						
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<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>106.20</td><td>-20.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-19.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.19</td><td>-19.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.14</td><td>-19.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.70</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-18.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-18.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.36</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.32</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.26</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr></tbody></table>						[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			105.65	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			104.74	0.0	0.0	0.0			104.41	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			103.72	0.0	0.0	0.0	-108.4		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			100.26	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			97.20	0.0	0.0	0.0			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.20	-20.0	-	-	-	106.19	-19.9	-	-	-	106.19	-19.9	-	-	-	106.14	-19.8	-	-	-	105.70	-18.5	-	-	-	105.65	-18.3	-	-	-	105.65	-18.3	-	-	-	105.60	-18.2	-	-	-	105.55	-18.0	-	-	-	105.50	-17.9	-	-	-	105.50	-17.9	-	-	-	105.45	-17.8	-	-	-	105.36	-17.5	-	-	-	105.32	-17.4	-	-	-	105.32	-17.4	-	-	-	105.26	-17.2	-	-	-	105.20	-17.0	-	-	-
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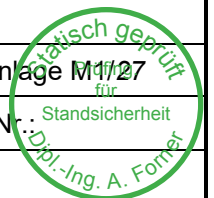
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	-	-	104.41	-14.7	-	-	-	104.41	-14.7	-	-	-	104.36	-14.5	-	-	-	104.25	-14.2	-	-	-	104.20	-14.1	-	-	-	104.20	-14.1	-	-	-	104.15	-13.9	-	-	-	103.80	-12.9	-	-	-	103.75	-12.8	-	-	-	103.75	-12.8	-	-	-	103.74	-12.8	-	-	-	103.74	-12.8	-	-	-	103.74	-12.7	-	-	-	103.74	-12.7	-	-	-	103.72	-12.7	-	-	-	103.72	-12.7	-	-	-	103.70	-12.6	-	-	-	103.65	-12.5	-	-	-	103.60	-12.4	-	-	-	103.60	-12.4	-	-	-	103.54	-12.2	-	-	-	103.54	-12.2	-	-	-	103.47	-12.0	-	-	-	103.47	-12.0	-	-	-	103.46	-12.0	-	-	-	103.46	-12.0	-	-	-	103.40	-11.8	-	-	-	103.40	-11.8	-	-	-	103.35	-11.7	-	-	-	103.35	-11.7	-	-	-	103.31	-11.5	-	-	-	103.31	-11.5	-	-	-	103.27	-11.4	-	-	-	103.27	-11.4	-	-	-	103.23	-11.3	-	-	-	103.23	-11.3	-	-	-	103.21	-11.3	-	-	-	103.21	-11.3	-	-	-	103.20	-11.2	-	-	-	103.20	-11.2	-	-	-	103.15	-11.1	-	-	-	103.15	-11.1	-	-	-	103.10	-11.0	-	-	-	103.10	-11.0	-	-	-	103.04	-10.8	-	-	-	103.04	-10.8	-	-	-	102.98	-10.6	-	-	-	102.98	-10.6	-	-	-	102.95	-10.5	-	-	-	102.95	-10.5	-	-	-	102.94	-10.5	-	-	-	102.94	-10.5	-	-	-	102.89	-10.4	-	-	-	102.89	-10.4	-	-	-	102.85	-10.3	-	-	-	102.85	-10.3	-	-	-	102.80	-10.1	-	-	-	102.70	-9.9	-	-	-	102.65	-9.7	-	-	-	102.65	-9.7	-	-	-	102.62	-9.6	-	-	-	102.62	-9.6	-	-	-	102.55	-9.5	0.00	0.00	0.00
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<table><tr><td>102.55</td><td>-9.5</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.54</td><td>-9.4</td><td>0.00</td><td>0.00</td><td>0.51</td></tr><tr><td>102.54</td><td>-9.4</td><td>0.05</td><td>0.51</td><td>0.51</td></tr><tr><td>102.50</td><td>-9.3</td><td>0.05</td><td>0.51</td><td>3.76</td></tr><tr><td>102.40</td><td>-9.1</td><td>1.13</td><td>10.25</td><td>10.25</td></tr><tr><td>102.35</td><td>-8.9</td><td>1.13</td><td>10.11</td><td>13.50</td></tr><tr><td>102.35</td><td>-8.9</td><td>1.51</td><td>13.50</td><td>13.50</td></tr><tr><td>102.31</td><td>-8.8</td><td>1.51</td><td>13.31</td><td>16.75</td></tr><tr><td>102.21</td><td>-8.5</td><td>2.72</td><td>23.24</td><td>23.24</td></tr><tr><td>102.17</td><td>-8.4</td><td>2.72</td><td>22.90</td><td>26.49</td></tr><tr><td>102.17</td><td>-8.4</td><td>3.14</td><td>26.49</td><td>26.49</td></tr><tr><td>102.12</td><td>-8.3</td><td>3.14</td><td>26.10</td><td>29.74</td></tr><tr><td>102.12</td><td>-8.3</td><td>3.58</td><td>29.74</td><td>29.74</td></tr><tr><td>102.07</td><td>-8.2</td><td>3.58</td><td>29.30</td><td>32.99</td></tr><tr><td>102.07</td><td>-8.2</td><td>4.04</td><td>32.99</td><td>32.99</td></tr><tr><td>102.06</td><td>-8.1</td><td>4.04</td><td>32.83</td><td>34.03</td></tr><tr><td>102.06</td><td>-8.1</td><td>4.18</td><td>34.03</td><td>34.03</td></tr><tr><td>102.01</td><td>-8.0</td><td>4.18</td><td>33.48</td><td>37.45</td></tr><tr><td>101.86</td><td>-7.6</td><td>6.26</td><td>47.71</td><td>47.71</td></tr><tr><td>101.81</td><td>-7.5</td><td>6.26</td><td>46.91</td><td>51.14</td></tr><tr><td>101.81</td><td>-7.5</td><td>6.83</td><td>51.14</td><td>51.14</td></tr><tr><td>101.76</td><td>-7.4</td><td>6.83</td><td>50.26</td><td>54.56</td></tr><tr><td>101.76</td><td>-7.4</td><td>7.41</td><td>54.56</td><td>54.56</td></tr><tr><td>101.71</td><td>-7.2</td><td>7.41</td><td>53.56</td><td>58.19</td></tr><tr><td>101.65</td><td>-7.1</td><td>8.72</td><td>61.83</td><td>61.83</td></tr><tr><td>101.60</td><td>-7.0</td><td>8.72</td><td>60.66</td><td>65.47</td></tr><tr><td>101.60</td><td>-7.0</td><td>9.41</td><td>65.47</td><td>65.47</td></tr><tr><td>101.55</td><td>-6.8</td><td>9.41</td><td>64.23</td><td>69.08</td></tr><tr><td>101.24</td><td>-6.0</td><td>15.00</td><td>90.73</td><td>90.73</td></tr><tr><td>101.18</td><td>-5.9</td><td>15.00</td><td>88.82</td><td>94.34</td></tr><tr><td>101.18</td><td>-5.9</td><td>15.94</td><td>94.34</td><td>94.34</td></tr><tr><td>101.13</td><td>-5.8</td><td>15.94</td><td>92.32</td><td>97.95</td></tr><tr><td>101.13</td><td>-5.8</td><td>16.91</td><td>97.95</td><td>97.95</td></tr><tr><td>101.09</td><td>-5.7</td><td>16.91</td><td>96.05</td><td>101.18</td></tr><tr><td>100.90</td><td>-5.2</td><td>21.78</td><td>114.09</td><td>114.09</td></tr><tr><td>100.85</td><td>-5.1</td><td>21.78</td><td>111.71</td><td>117.31</td></tr><tr><td>100.85</td><td>-5.1</td><td>22.87</td><td>117.32</td><td>117.31</td></tr><tr><td>100.79</td><td>-5.0</td><td>22.87</td><td>114.32</td><td>121.22</td></tr><tr><td>100.74</td><td>-4.9</td><td>25.70</td><td>125.13</td><td>125.12</td></tr><tr><td>100.68</td><td>-4.7</td><td>25.70</td><td>121.81</td><td>129.03</td></tr><tr><td>100.68</td><td>-4.7</td><td>27.23</td><td>129.03</td><td>129.03</td></tr><tr><td>100.66</td><td>-4.7</td><td>27.23</td><td>127.78</td><td>130.43</td></tr><tr><td>100.66</td><td>-4.7</td><td>27.79</td><td>130.43</td><td>130.43</td></tr><tr><td>100.61</td><td>-4.6</td><td>27.79</td><td>127.26</td><td>133.92</td></tr><tr><td>100.31</td><td>-3.9</td><td>39.56</td><td>154.85</td><td>154.85</td></tr><tr><td>100.26</td><td>-3.8</td><td>39.56</td><td>150.60</td><td>158.34</td></tr><tr><td>100.26</td><td>-3.8</td><td>41.59</td><td>158.34</td><td>158.34</td></tr><tr><td>100.21</td><td>-3.7</td><td>41.59</td><td>153.91</td><td>161.83</td></tr><tr><td>100.21</td><td>-3.7</td><td>43.73</td><td>161.83</td><td>161.83</td></tr><tr><td>100.16</td><td>-3.6</td><td>43.73</td><td>157.21</td><td>165.32</td></tr><tr><td>100.16</td><td>-3.6</td><td>45.99</td><td>165.32</td><td>165.32</td></tr><tr><td>100.11</td><td>-3.5</td><td>45.99</td><td>160.50</td><td>168.81</td></tr><tr><td>99.65</td><td>-2.6</td><td>50.00</td><td>129.33</td><td>200.21</td></tr><tr><td>99.60</td><td>-2.5</td><td>50.00</td><td>124.52</td><td>203.70</td></tr><tr><td>99.60</td><td>-2.5</td><td>50.00</td><td>124.52</td><td>203.70</td></tr><tr><td>99.55</td><td>-2.4</td><td>50.00</td><td>119.86</td><td>207.11</td></tr><tr><td>99.21</td><td>-1.8</td><td>50.00</td><td>88.25</td><td>231.00</td></tr><tr><td>99.16</td><td>-1.7</td><td>50.00</td><td>83.86</td><td>234.41</td></tr><tr><td>99.16</td><td>-1.7</td><td>50.00</td><td>83.86</td><td>234.41</td></tr><tr><td>99.11</td><td>-1.6</td><td>50.00</td><td>79.51</td><td>237.82</td></tr><tr><td>98.22</td><td>-0.1</td><td>50.00</td><td>5.26</td><td>299.24</td></tr><tr><td>98.17</td><td>0.0</td><td>50.00</td><td>1.29</td><td>302.65</td></tr><tr><td>98.17</td><td>0.0</td><td>50.00</td><td>1.29</td><td>302.65</td></tr><tr><td>98.12</td><td>0.1</td><td>50.00</td><td>-2.66</td><td>306.06</td></tr><tr><td>97.97</td><td>0.3</td><td>50.00</td><td>-14.48</td><td>316.30</td></tr><tr><td>97.92</td><td>0.4</td><td>50.00</td><td>-18.40</td><td>319.71</td></tr><tr><td>97.92</td><td>0.4</td><td>50.00</td><td>-18.40</td><td>319.71</td></tr><tr><td>97.87</td><td>0.4</td><td>50.00</td><td>-22.49</td><td>323.28</td></tr><tr><td>97.25</td><td>1.4</td><td>50.00</td><td>-71.29</td><td>366.03</td></tr><tr><td>97.20</td><td>1.5</td><td>50.00</td><td>-75.35</td><td>369.59</td></tr></table>							102.55	-9.5	0.00	0.00	0.00	102.54	-9.4	0.00	0.00	0.51	102.54	-9.4	0.05	0.51	0.51	102.50	-9.3	0.05	0.51	3.76	102.40	-9.1	1.13	10.25	10.25	102.35	-8.9	1.13	10.11	13.50	102.35	-8.9	1.51	13.50	13.50	102.31	-8.8	1.51	13.31	16.75	102.21	-8.5	2.72	23.24	23.24	102.17	-8.4	2.72	22.90	26.49	102.17	-8.4	3.14	26.49	26.49	102.12	-8.3	3.14	26.10	29.74	102.12	-8.3	3.58	29.74	29.74	102.07	-8.2	3.58	29.30	32.99	102.07	-8.2	4.04	32.99	32.99	102.06	-8.1	4.04	32.83	34.03	102.06	-8.1	4.18	34.03	34.03	102.01	-8.0	4.18	33.48	37.45	101.86	-7.6	6.26	47.71	47.71	101.81	-7.5	6.26	46.91	51.14	101.81	-7.5	6.83	51.14	51.14	101.76	-7.4	6.83	50.26	54.56	101.76	-7.4	7.41	54.56	54.56	101.71	-7.2	7.41	53.56	58.19	101.65	-7.1	8.72	61.83	61.83	101.60	-7.0	8.72	60.66	65.47	101.60	-7.0	9.41	65.47	65.47	101.55	-6.8	9.41	64.23	69.08	101.24	-6.0	15.00	90.73	90.73	101.18	-5.9	15.00	88.82	94.34	101.18	-5.9	15.94	94.34	94.34	101.13	-5.8	15.94	92.32	97.95	101.13	-5.8	16.91	97.95	97.95	101.09	-5.7	16.91	96.05	101.18	100.90	-5.2	21.78	114.09	114.09	100.85	-5.1	21.78	111.71	117.31	100.85	-5.1	22.87	117.32	117.31	100.79	-5.0	22.87	114.32	121.22	100.74	-4.9	25.70	125.13	125.12	100.68	-4.7	25.70	121.81	129.03	100.68	-4.7	27.23	129.03	129.03	100.66	-4.7	27.23	127.78	130.43	100.66	-4.7	27.79	130.43	130.43	100.61	-4.6	27.79	127.26	133.92	100.31	-3.9	39.56	154.85	154.85	100.26	-3.8	39.56	150.60	158.34	100.26	-3.8	41.59	158.34	158.34	100.21	-3.7	41.59	153.91	161.83	100.21	-3.7	43.73	161.83	161.83	100.16	-3.6	43.73	157.21	165.32	100.16	-3.6	45.99	165.32	165.32	100.11	-3.5	45.99	160.50	168.81	99.65	-2.6	50.00	129.33	200.21	99.60	-2.5	50.00	124.52	203.70	99.60	-2.5	50.00	124.52	203.70	99.55	-2.4	50.00	119.86	207.11	99.21	-1.8	50.00	88.25	231.00	99.16	-1.7	50.00	83.86	234.41	99.16	-1.7	50.00	83.86	234.41	99.11	-1.6	50.00	79.51	237.82	98.22	-0.1	50.00	5.26	299.24	98.17	0.0	50.00	1.29	302.65	98.17	0.0	50.00	1.29	302.65	98.12	0.1	50.00	-2.66	306.06	97.97	0.3	50.00	-14.48	316.30	97.92	0.4	50.00	-18.40	319.71	97.92	0.4	50.00	-18.40	319.71	97.87	0.4	50.00	-22.49	323.28	97.25	1.4	50.00	-71.29	366.03	97.20	1.5	50.00	-75.35	369.59
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101.55	-6.8	9.41	64.23	69.08																																																																																																																																																																																																																																																																																																																																																																
101.24	-6.0	15.00	90.73	90.73																																																																																																																																																																																																																																																																																																																																																																
101.18	-5.9	15.00	88.82	94.34																																																																																																																																																																																																																																																																																																																																																																
101.18	-5.9	15.94	94.34	94.34																																																																																																																																																																																																																																																																																																																																																																
101.13	-5.8	15.94	92.32	97.95																																																																																																																																																																																																																																																																																																																																																																
101.13	-5.8	16.91	97.95	97.95																																																																																																																																																																																																																																																																																																																																																																
101.09	-5.7	16.91	96.05	101.18																																																																																																																																																																																																																																																																																																																																																																
100.90	-5.2	21.78	114.09	114.09																																																																																																																																																																																																																																																																																																																																																																
100.85	-5.1	21.78	111.71	117.31																																																																																																																																																																																																																																																																																																																																																																
100.85	-5.1	22.87	117.32	117.31																																																																																																																																																																																																																																																																																																																																																																
100.79	-5.0	22.87	114.32	121.22																																																																																																																																																																																																																																																																																																																																																																
100.74	-4.9	25.70	125.13	125.12																																																																																																																																																																																																																																																																																																																																																																
100.68	-4.7	25.70	121.81	129.03																																																																																																																																																																																																																																																																																																																																																																
100.68	-4.7	27.23	129.03	129.03																																																																																																																																																																																																																																																																																																																																																																
100.66	-4.7	27.23	127.78	130.43																																																																																																																																																																																																																																																																																																																																																																
100.66	-4.7	27.79	130.43	130.43																																																																																																																																																																																																																																																																																																																																																																
100.61	-4.6	27.79	127.26	133.92																																																																																																																																																																																																																																																																																																																																																																
100.31	-3.9	39.56	154.85	154.85																																																																																																																																																																																																																																																																																																																																																																
100.26	-3.8	39.56	150.60	158.34																																																																																																																																																																																																																																																																																																																																																																
100.26	-3.8	41.59	158.34	158.34																																																																																																																																																																																																																																																																																																																																																																
100.21	-3.7	41.59	153.91	161.83																																																																																																																																																																																																																																																																																																																																																																
100.21	-3.7	43.73	161.83	161.83																																																																																																																																																																																																																																																																																																																																																																
100.16	-3.6	43.73	157.21	165.32																																																																																																																																																																																																																																																																																																																																																																
100.16	-3.6	45.99	165.32	165.32																																																																																																																																																																																																																																																																																																																																																																
100.11	-3.5	45.99	160.50	168.81																																																																																																																																																																																																																																																																																																																																																																
99.65	-2.6	50.00	129.33	200.21																																																																																																																																																																																																																																																																																																																																																																
99.60	-2.5	50.00	124.52	203.70																																																																																																																																																																																																																																																																																																																																																																
99.60	-2.5	50.00	124.52	203.70																																																																																																																																																																																																																																																																																																																																																																
99.55	-2.4	50.00	119.86	207.11																																																																																																																																																																																																																																																																																																																																																																
99.21	-1.8	50.00	88.25	231.00																																																																																																																																																																																																																																																																																																																																																																
99.16	-1.7	50.00	83.86	234.41																																																																																																																																																																																																																																																																																																																																																																
99.16	-1.7	50.00	83.86	234.41																																																																																																																																																																																																																																																																																																																																																																
99.11	-1.6	50.00	79.51	237.82																																																																																																																																																																																																																																																																																																																																																																
98.22	-0.1	50.00	5.26	299.24																																																																																																																																																																																																																																																																																																																																																																
98.17	0.0	50.00	1.29	302.65																																																																																																																																																																																																																																																																																																																																																																
98.17	0.0	50.00	1.29	302.65																																																																																																																																																																																																																																																																																																																																																																
98.12	0.1	50.00	-2.66	306.06																																																																																																																																																																																																																																																																																																																																																																
97.97	0.3	50.00	-14.48	316.30																																																																																																																																																																																																																																																																																																																																																																
97.92	0.4	50.00	-18.40	319.71																																																																																																																																																																																																																																																																																																																																																																
97.92	0.4	50.00	-18.40	319.71																																																																																																																																																																																																																																																																																																																																																																
97.87	0.4	50.00	-22.49	323.28																																																																																																																																																																																																																																																																																																																																																																
97.25	1.4	50.00	-71.29	366.03																																																																																																																																																																																																																																																																																																																																																																
97.20	1.5	50.00	-75.35	369.59																																																																																																																																																																																																																																																																																																																																																																
Schnitt:		Anlage M1 Schnitt 4L			Seite Anlage M1/28																																																																																																																																																																																																																																																																																																																																																															
Kapitel:		3 LF 3 (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>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.09019096 Theoretischer Fußpunkt = 97.199 m</div> <div>Einbindetiefe tg = 5.35 m Profillänge = 9.00 m</div> <div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 170.31 kN/m G',k = 0.00 kN/m Pv,k = 20.50 kN/m Eav,k = 67.79 kN/m (Eah,k = 374.22 kN/m) Bv,k = 144.10 Summe V,k = 114.50 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 98.08 bis 94.56 m) ==&gt; 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 97.20 55.00 s3: Flusskies, -sand Mantelfläche bis 97.20 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 294.25 / 1.40 = 210.18 kN/m Rd = Rb,d + Rs1,d = 1075.23 kN/m</div> <div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 204.37 - 0.00 + 77.96 + 24.60 = 306.93 kN/m ==&gt; µ = V,d / Rd = 306.93 / 1075.23 = 0.29</div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>		
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/29
Kapitel: 3 LF 3 (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>4LF 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: 04_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 M1 Schnitt 4L		Seite Anlage M1/30
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11130
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>Zusatzdrücke</div> <table><tr><td>Nr.</td><td>e(oben)</td><td>e(unten)</td><td>z(oben)</td><td>z(unten)</td><td colspan="3">Typ</td></tr><tr><td>[-]</td><td>[kN/m²]</td><td>[kN/m²]</td><td>[mNHN]</td><td>[mNHN]</td><td colspan="3">[-]</td></tr><tr><td>1</td><td>0.00</td><td>14.00</td><td>106.19</td><td>104.74</td><td colspan="3">Ständig</td></tr><tr><td>2</td><td>0.00</td><td>29.50</td><td>105.50</td><td>102.55</td><td colspan="3">Wasserdruck</td></tr></table> <div>Kraftträger</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 automatisch und Fuß gebettet</div> <div>Profillänge = 9.80 m</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 <math>\mu_e = 565.906 / 567.904 = 0.996</math></div> <div>Bettungslager <math>B_{h,d} = 565.906 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 567.904 \text{ kN/m}</math></div> <div>Anker und Steifen</div> <div><math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50)</div> <div>Nw,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>-178.54</td><td>-137.60</td><td>-137.60</td><td>-150.48</td><td>3.900E+7</td><td>2.100E+7</td><td>-175.44 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>-16.1</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-16.1</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-16.1</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-16.1</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-16.1</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-16.2</td><td>0.0</td><td>-186.73</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 4\Linkes Ufer\02_BS 4_LF2.vrb eingelesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0127</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>105.32</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/</td><td>0.00</td><td>-0.667 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	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	103.72	0.00	8.30	-178.54	-137.60	-137.60	-150.48	3.900E+7	2.100E+7	-175.44 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	-16.1	0.0	-186.73	0.00	0.00	-7.47	103.72	-16.1	0.0	-186.73	0.00	0.00	-7.47	103.72	-16.1	0.0	-186.73	0.00	0.00	-6.64	103.72	-16.1	0.0	-186.73	0.00	0.00	-5.81	103.72	-16.1	0.0	-186.73	0.00	0.00	-4.98	103.72	-16.2	0.0	-186.73	0.00	0.00	-4.15	103.72	-16.2	0.0	-186.73	0.00	0.00	-3.32	103.72	-16.2	0.0	-186.73	0.00	0.00	-2.49	103.72	-16.2	0.0	-186.73	0.00	0.00	-1.66	103.72	-16.2	0.0	-186.73	0.00	0.00	-0.83	103.72	-16.2	0.0	-186.73	0.00	0.00	0.00	103.72	-16.2	0.0	-186.73	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0127	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>Statistisch geprüft</div> <div>für</div> <div>Standsicherheit</div> <div>Dipl.-Ing. A. Forner</div>	
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<div>Erhöhte aktive Erddruckbeiwerte Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor <math>[-] = 0.50</math> Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></th></tr><tr><th><math>[-]</math></th><th><math>[mNHN]</math></th><th><math>[-]</math></th><th><math>[-]</math></th><th><math>[\circ]</math></th><th><math>[\circ]</math></th><th><math>[\circ]</math></th><th><math>[-]</math></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>Aktive Erddruckkoordinaten <math>([g+q],k)</math> mit Zusatzdrücke</div> <table><tr><th>von</th><th>bis</th><th>oben</th><th>unten</th><th colspan="2">Wasserdruck</th></tr><tr><th><math>[mNHN]</math></th><th><math>[mNHN]</math></th><th><math>[kN/m^2]</math></th><th><math>[kN/m^2]</math></th><th><math>[kN/m^2]</math></th><th><math>[kN/m^2]</math></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>102.119</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>100.257</td><td>39.055</td><td>41.215</td><td>0.00</td><td>0.00</td></tr><tr><td>100.257</td><td>100.156</td><td>41.215</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></table>			Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	$[-]$	$[mNHN]$	$[-]$	$[-]$	$[\circ]$	$[\circ]$	$[\circ]$	$[-]$	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		$[mNHN]$	$[mNHN]$	$[kN/m^2]$	$[kN/m^2]$	$[kN/m^2]$	$[kN/m^2]$	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	100.257	39.055	41.215	0.00	0.00	100.257	100.156	41.215	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
Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																																																									
$[-]$	$[mNHN]$	$[-]$	$[-]$	$[\circ]$	$[\circ]$	$[\circ]$	$[-]$																																																																																																																																																																																																																																																																																																																																																																									
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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$[mNHN]$	$[mNHN]$	$[kN/m^2]$	$[kN/m^2]$	$[kN/m^2]$	$[kN/m^2]$																																																																																																																																																																																																																																																																																																																																																																											
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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																																																																																																																																																																																																																																																																																																																																																																											
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103.750	103.740	0.000	0.008	17.50	17.60																																																																																																																																																																																																																																																																																																																																																																											
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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																																																																																																																																																																																																																																																																																																																																																																											
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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	100.257	39.055	41.215	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																											
100.257	100.156	41.215	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																																																																																																																																																																																																																																																																																																																																																																											
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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>93.07188.88275.91987.3840.000.00</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>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 = 1.40 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 -11.33 -11.62 102.54 102.35 -11.62 -19.04 102.35 102.17 -19.04 -26.46 102.17 102.12 -26.46 -28.32 102.12 102.07 -28.32 -30.18 102.07 102.06 -30.18 -30.77 102.06 101.76 -30.77 -42.50 101.76 101.60 -42.50 -48.74 101.60 101.18 -48.74 -65.23 101.18 101.13 -65.23 -67.30 101.13 100.85 -67.30 -78.36 100.85 100.68 -78.36 -85.06 100.68 100.66 -85.06 -85.85 100.66 100.26 -85.85 -101.80 100.26 100.16 -101.80 -105.79 100.16 99.60 -105.79 -127.72 99.60 99.16 -127.72 -145.27 99.16 98.17 -145.27 -184.27 98.17 97.92 -184.27 -194.02 97.92 97.16 -194.02 -224.06 97.16 96.40 -224.06 -254.09 96.40 95.45 -254.09 -291.68 95.45 95.43 -291.68 -292.48 95.43 93.07 -292.48 -385.44 93.07 88.88 -385.44 -550.75 88.88 88.22 -550.75 -577.05 88.22 82.26 -577.05 -812.13 82.26 80.00 -812.13 -901.29</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 -13.3 -1.8 -0.3 105.65 -40.9 -1.8 -18.0 105.50 -44.6 -2.9 -18.4 105.32 -48.9 -4.9 -19.0 105.15 -53.0 -7.5 -20.1 104.74 -62.9 -16.8 -24.9 104.41 -70.9 -21.0 -31.1 104.41 -70.9 -141.8 -31.1 104.20 -75.9 -145.2 -61.2 103.75 -86.8 -154.4 -128.6 103.74 -87.0 -154.7 -130.1 103.72 -87.6 -155.7 -133.2 -186.7 103.72 -87.6 31.1 -133.2 103.60 -91.5 24.6 -129.8</div></div>							
Schnitt:		Anlage M1 Schnitt 4L				Seite Anlage M1/33	
Kapitel:		4 LF 4 (BS-P)				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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<div><div><div>103.47 -95.8 16.5 -127.2</div><div>103.46 -96.4 15.2 -127.0</div><div>103.35 -100.7 5.9 -125.8</div><div>103.31 -102.2 2.4 -125.7</div><div>103.23 -106.0 -6.5 -125.9</div><div>103.21 -106.9 -8.7 -126.0</div><div>103.20 -107.2 -9.6 -126.1</div><div>103.10 -111.9 -21.3 -127.6</div><div>102.98 -118.1 -37.4 -131.2</div><div>102.95 -119.6 -41.4 -132.3</div><div>102.94 -120.4 -43.3 -132.9</div><div>102.85 -124.7 -55.1 -136.9</div><div>102.65 -136.3 -87.5 -151.2</div><div>102.62 -138.2 -93.0 -154.1</div><div>102.55 -142.6 -102.6 -161.0</div><div>102.54 -142.9 -103.3 -161.7</div><div>102.35 -145.1 -116.5 -182.4</div><div>102.17 -146.0 -127.3 -205.4</div><div>102.12 -146.1 -129.4 -211.4</div><div>102.07 -146.0 -131.4 -217.6</div><div>102.06 -146.0 -131.9 -219.5</div><div>101.76 -143.8 -138.1 -259.9</div><div>101.60 -141.4 -136.7 -281.7</div><div>101.18 -130.9 -115.9 -335.3</div><div>101.13 -129.2 -111.6 -341.2</div><div>100.85 -118.2 -83.3 -368.7</div><div>100.68 -110.3 -62.1 -381.1</div><div>100.66 -109.3 -59.3 -382.3</div><div>100.26 -86.1 2.5 -394.2</div><div>100.16 -79.5 19.9 -393.1</div><div>99.60 -50.4 95.5 -359.4</div><div>99.16 -36.2 131.9 -308.1</div><div>98.17 -28.3 148.7 -162.8</div><div>97.92 -30.7 140.9 -126.9</div><div>97.16 -45.4 89.8 -36.6</div><div>96.40 -50.9 0.0 0.0</div></div><div><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>106.20</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>106.19</td><td>-0.2</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.65</td><td>-10.4</td><td>-1.4</td><td>-0.3</td><td></td></tr><tr><td>105.65</td><td>-30.9</td><td>-1.4</td><td>-13.4</td><td></td></tr><tr><td>105.50</td><td>-33.7</td><td>-2.3</td><td>-13.6</td><td></td></tr><tr><td>105.32</td><td>-37.2</td><td>-3.8</td><td>-14.2</td><td></td></tr><tr><td>105.15</td><td>-40.4</td><td>-5.8</td><td>-15.0</td><td></td></tr><tr><td>104.74</td><td>-48.1</td><td>-13.0</td><td>-18.7</td><td></td></tr><tr><td>104.41</td><td>-54.4</td><td>-16.1</td><td>-23.5</td><td></td></tr><tr><td>104.41</td><td>-54.4</td><td>-105.6</td><td>-23.5</td><td></td></tr><tr><td>104.20</td><td>-58.3</td><td>-108.1</td><td>-45.9</td><td></td></tr><tr><td>103.75</td><td>-66.9</td><td>-115.0</td><td>-96.1</td><td></td></tr><tr><td>103.74</td><td>-67.1</td><td>-115.1</td><td>-97.2</td><td></td></tr><tr><td>103.72</td><td>-67.5</td><td>-115.9</td><td>-99.5</td><td>-137.6</td></tr><tr><td>103.72</td><td>-67.5</td><td>21.7</td><td>-99.5</td><td></td></tr><tr><td>103.60</td><td>-70.5</td><td>16.8</td><td>-97.2</td><td></td></tr><tr><td>103.47</td><td>-73.9</td><td>10.6</td><td>-95.5</td><td></td></tr><tr><td>103.46</td><td>-74.4</td><td>9.5</td><td>-95.3</td><td></td></tr><tr><td>103.35</td><td>-77.8</td><td>2.4</td><td>-94.6</td><td></td></tr><tr><td>103.31</td><td>-79.0</td><td>-0.3</td><td>-94.6</td><td></td></tr><tr><td>103.23</td><td>-81.9</td><td>-7.2</td><td>-94.9</td><td></td></tr><tr><td>103.21</td><td>-82.6</td><td>-8.8</td><td>-95.1</td><td></td></tr><tr><td>103.20</td><td>-82.9</td><td>-9.5</td><td>-95.1</td><td></td></tr><tr><td>103.10</td><td>-86.6</td><td>-18.6</td><td>-96.5</td><td></td></tr><tr><td>102.98</td><td>-91.4</td><td>-31.0</td><td>-99.6</td><td></td></tr><tr><td>102.95</td><td>-92.6</td><td>-34.1</td><td>-100.5</td><td></td></tr><tr><td>102.94</td><td>-93.2</td><td>-35.6</td><td>-101.0</td><td></td></tr><tr><td>102.85</td><td>-96.6</td><td>-44.8</td><td>-104.3</td><td></td></tr><tr><td>102.65</td><td>-105.7</td><td>-69.8</td><td>-115.8</td><td></td></tr><tr><td>102.62</td><td>-107.2</td><td>-74.1</td><td>-118.1</td><td></td></tr><tr><td>102.55</td><td>-110.6</td><td>-81.5</td><td>-123.5</td><td></td></tr></table></div></div>			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	-137.6	103.72	-67.5	21.7	-99.5		103.60	-70.5	16.8	-97.2		103.47	-73.9	10.6	-95.5		103.46	-74.4	9.5	-95.3		103.35	-77.8	2.4	-94.6		103.31	-79.0	-0.3	-94.6		103.23	-81.9	-7.2	-94.9		103.21	-82.6	-8.8	-95.1		103.20	-82.9	-9.5	-95.1		103.10	-86.6	-18.6	-96.5		102.98	-91.4	-31.0	-99.6		102.95	-92.6	-34.1	-100.5		102.94	-93.2	-35.6	-101.0		102.85	-96.6	-44.8	-104.3		102.65	-105.7	-69.8	-115.8		102.62	-107.2	-74.1	-118.1		102.55	-110.6	-81.5	-123.5	
Tiefe	N	Q	M	A(h)																																																																																																																																																																			
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Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/34																																																																																																																																																																					
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11/34																																																																																																																																																																					
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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>102.54 -110.9 -82.0 -124.1</div><div>102.35 -112.6 -92.4 -140.5</div><div>102.17 -113.4 -100.8 -158.8</div><div>102.12 -113.4 -102.5 -163.5</div><div>102.07 -113.4 -104.1 -168.4</div><div>102.06 -113.3 -104.5 -170.0</div><div>101.76 -111.6 -109.3 -201.9</div><div>101.60 -109.8 -108.2 -219.2</div><div>101.18 -101.6 -91.8 -261.6</div><div>101.13 -100.2 -88.5 -266.3</div><div>100.85 -91.7 -66.2 -288.1</div><div>100.68 -85.5 -49.5 -298.0</div><div>100.66 -84.7 -47.3 -299.0</div><div>100.26 -66.5 1.3 -308.6</div><div>100.16 -61.4 15.0 -307.8</div><div>99.60 -38.6 74.5 -281.6</div><div>99.16 -27.6 103.2 -241.5</div><div>98.17 -21.5 116.6 -127.7</div><div>97.92 -23.4 110.5 -99.6</div><div>97.16 -34.9 70.5 -28.7</div><div>96.40 -39.2 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></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></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></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></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></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></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></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></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></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></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></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></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></div><div></div><div></div></div><div><div>103.72</div><div>-67.5</div><div>-115.9</div><div>-99.5</div><div>-137.6</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-67.5</div><div>21.7</div><div>-99.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.60</div><div>-70.5</div><div>16.8</div><div>-97.2</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.47</div><div>-73.9</div><div>10.6</div><div>-95.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.46</div><div>-74.4</div><div>9.5</div><div>-95.3</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.35</div><div>-77.8</div><div>2.4</div><div>-94.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.31</div><div>-79.0</div><div>-0.3</div><div>-94.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.23</div><div>-81.9</div><div>-7.2</div><div>-94.9</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.21</div><div>-82.6</div><div>-8.8</div><div>-95.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.20</div><div>-82.9</div><div>-9.5</div><div>-95.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.10</div><div>-86.6</div><div>-18.6</div><div>-96.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.98</div><div>-91.4</div><div>-31.0</div><div>-99.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.95</div><div>-92.6</div><div>-34.1</div><div>-100.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.94</div><div>-93.2</div><div>-35.6</div><div>-101.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.85</div><div>-96.6</div><div>-44.8</div><div>-104.3</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.65</div><div>-105.7</div><div>-69.8</div><div>-115.8</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.62</div><div>-107.2</div><div>-74.1</div><div>-118.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.55</div><div>-110.6</div><div>-81.5</div><div>-123.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.54</div><div>-110.9</div><div>-82.0</div><div>-124.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.35</div><div>-112.6</div><div>-92.4</div><div>-140.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.17</div><div>-113.4</div><div>-100.8</div><div>-158.8</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.12</div><div>-113.4</div><div>-102.5</div><div>-163.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.07</div><div>-113.4</div><div>-104.1</div><div>-168.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.06</div><div>-113.3</div><div>-104.5</div><div>-170.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.76</div><div>-111.6</div><div>-109.3</div><div>-201.9</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.60</div><div>-109.8</div><div>-108.2</div><div>-219.2</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.18</div><div>-101.6</div><div>-91.8</div><div>-261.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.13</div><div>-100.2</div><div>-88.5</div><div>-266.3</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.85</div><div>-91.7</div><div>-66.2</div><div>-288.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.68</div><div>-85.5</div><div>-49.5</div><div>-298.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.66</div><div>-84.7</div><div>-47.3</div><div>-299.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.26</div><div>-66.5</div><div>1.3</div><div>-308.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.16</div><div>-61.4</div><div>15.0</div><div>-307.8</div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>		
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/35
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11/35
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	
<div><div><div><div><div>99.60</div><div>-38.6</div><div>74.5</div><div>-281.6</div></div><div><div>99.16</div><div>-27.6</div><div>103.2</div><div>-241.5</div></div><div><div>98.17</div><div>-21.5</div><div>116.6</div><div>-127.7</div></div><div><div>97.92</div><div>-23.4</div><div>110.5</div><div>-99.6</div></div><div><div>97.16</div><div>-34.9</div><div>70.5</div><div>-28.7</div></div><div><div>96.40</div><div>-39.2</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>106.20</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>-109.2</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>100.26</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><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>106.20</div><div>-20.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.19</div><div>-20.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.19</div><div>-20.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.14</div><div>-20.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.70</div><div>-18.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.65</div><div>-18.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.65</div><div>-18.7</div><div>-</div><div>-</div><div>-</div></div></div>					
Schnitt: Anlage M1 Schnitt 4L				Seite Anlage M1/36	
Kapitel: 4 LF 4 (BS-P)				Archiv Nr.: 11/36	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			

statisch geprüft

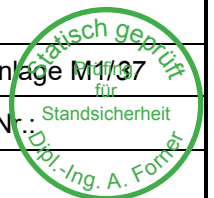
für

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>105.60</div> <div>-18.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.55</div> <div>-18.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-18.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.50</div> <div>-18.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.45</div> <div>-18.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.36</div> <div>-17.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.32</div> <div>-17.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.32</div> <div>-17.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.26</div> <div>-17.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.20</div> <div>-17.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.15</div> <div>-17.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>105.15</div> <div>-17.1</div> 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<div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.15</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-10.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-10.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-10.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-10.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.94</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.94</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.89</div> <div>-10.2</div> <div>-</div> <div>-</div> <div>-</div> </div>		
Schnitt:	Anlage M1 Schnitt 4L	Seite Anlage M1/37
Kapitel:	4 LF 4 (BS-P)	Archiv Nr.: 11/13
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> <div>102.89</div> <div>-10.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.85</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.85</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.80</div> <div>-10.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.70</div> <div>-9.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-9.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-9.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.62</div> <div>-9.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.62</div> <div>-9.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-9.3</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-9.3</div> <div>0.00</div> <div>0.00</div> <div>19.82</div> </div> <div> <div>102.54</div> 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<div>45.59</div> <div>49.56</div> </div> <div> <div>102.12</div> <div>-8.1</div> <div>6.14</div> <div>49.56</div> <div>49.56</div> </div> <div> <div>102.07</div> <div>-7.9</div> <div>6.14</div> <div>48.78</div> <div>52.81</div> </div> <div> <div>102.07</div> <div>-7.9</div> <div>6.65</div> <div>52.81</div> <div>52.81</div> </div> <div> <div>102.06</div> <div>-7.9</div> <div>6.65</div> <div>52.54</div> <div>53.85</div> </div> <div> <div>102.06</div> <div>-7.9</div> <div>6.81</div> <div>53.85</div> <div>53.85</div> </div> <div> <div>102.01</div> <div>-7.8</div> <div>6.81</div> <div>52.94</div> <div>57.27</div> </div> <div> <div>101.81</div> <div>-7.2</div> <div>9.79</div> <div>70.96</div> <div>70.95</div> </div> <div> <div>101.76</div> <div>-7.1</div> <div>9.79</div> <div>69.69</div> <div>74.38</div> </div> <div> <div>101.76</div> <div>-7.1</div> <div>10.45</div> <div>74.38</div> <div>74.38</div> </div> <div> <div>101.71</div> <div>-7.0</div> <div>10.45</div> <div>72.95</div> <div>78.01</div> </div> <div> <div>101.65</div> <div>-6.8</div> <div>11.93</div> <div>81.65</div> <div>81.65</div> </div> <div> <div>101.60</div> <div>-6.7</div> <div>11.93</div> <div>80.05</div> <div>85.29</div> </div> <div> <div>101.60</div> <div>-6.7</div> <div>12.71</div> <div>85.29</div> <div>85.29</div> </div> <div> <div>101.55</div> <div>-6.6</div> <div>12.71</div> <div>83.61</div> <div>88.90</div> </div> <div> <div>101.24</div> <div>-5.8</div> <div>19.04</div> <div>110.55</div> <div>110.55</div> </div> <div> <div>101.18</div> <div>-5.7</div> <div>19.04</div> <div>108.18</div> <div>114.16</div> </div> <div> <div>101.18</div> <div>-5.7</div> <div>20.09</div> <div>114.16</div> <div>114.16</div> </div> <div> <div>101.13</div> <div>-5.6</div> <div>20.09</div> <div>111.68</div> <div>117.77</div> </div> <div> <div>101.13</div> <div>-5.6</div> <div>21.19</div> <div>117.77</div> <div>117.77</div> </div> <div> <div>101.09</div> <div>-5.4</div> <div>21.19</div> <div>115.45</div> <div>120.99</div> </div> <div> <div>100.90</div> <div>-5.0</div> <div>26.66</div> <div>133.91</div> <div>133.90</div> </div> <div> <div>100.85</div> <div>-4.9</div> <div>26.66</div> <div>131.13</div> <div>137.13</div> </div> <div> <div>100.85</div> <div>-4.9</div> <div>27.88</div> <div>137.14</div> <div>137.13</div> </div> <div> <div>100.79</div> <div>-4.8</div> <div>27.88</div> <div>133.66</div> <div>141.04</div> </div> <div> <div>100.74</div> <div>-4.7</div> <div>31.04</div> <div>144.95</div> <div>144.94</div> </div> <div> <div>100.68</div> <div>-4.5</div> <div>31.04</div> <div>141.18</div> <div>148.85</div> </div> <div> <div>100.68</div> <div>-4.5</div> <div>32.72</div> <div>148.85</div> <div>148.85</div> </div> <div> <div>100.66</div> <div>-4.5</div> <div>32.72</div> <div>147.44</div> <div>150.25</div> </div> <div> <div>100.66</div> <div>-4.5</div> <div>33.35</div> <div>150.25</div> <div>150.25</div> </div> <div> <div>100.61</div> <div>-4.4</div> <div>33.35</div> <div>146.69</div> <div>153.73</div> </div> <div> <div>100.31</div> <div>-3.8</div> <div>46.13</div> <div>174.68</div> <div>174.67</div> </div> <div> <div>100.26</div> <div>-3.7</div> <div>46.13</div> <div>170.18</div> <div>178.16</div> </div> <div> <div>100.26</div> <div>-3.7</div> <div>48.29</div> <div>178.16</div> <div>178.16</div> </div> <div> <div>100.21</div> <div>-3.6</div> <div>48.29</div> <div>173.53</div> <div>181.65</div> </div> <div> <div>100.21</div> <div>-3.6</div> <div>50.00</div> <div>179.66</div> <div>181.65</div> </div> <div> <div>100.16</div> <div>-3.5</div> <div>50.00</div> <div>174.93</div> <div>185.14</div> </div> <div> <div>100.16</div> <div>-3.5</div> <div>50.00</div> <div>174.93</div> <div>185.14</div> </div> <div> <div>100.11</div> <div>-3.4</div> <div>50.00</div> <div>170.26</div> <div>188.63</div> </div> <div> <div>99.65</div> <div>-2.6</div> <div>50.00</div> <div>131.19</div> <div>220.03</div> </div> <div> <div>99.60</div> <div>-2.5</div> <div>50.00</div> <div>127.17</div> <div>223.52</div> </div> <div> <div>99.60</div> <div>-2.5</div> <div>50.00</div> <div>127.17</div> <div>223.52</div> </div> <div> <div>99.55</div> <div>-2.5</div> <div>50.00</div> <div>123.29</div> <div>226.93</div> </div> <div> <div>99.21</div> <div>-2.0</div> <div>50.00</div> <div>97.73</div> <div>250.82</div> </div> <div> <div>99.16</div> <div>-1.9</div> <div>50.00</div> <div>94.29</div> <div>254.23</div> </div> <div> <div>99.16</div> <div>-1.9</div> <div>50.00</div> <div>94.29</div> <div>254.23</div> </div> <div> <div>99.11</div> <div>-1.8</div> <div>50.00</div> <div>90.90</div> <div>257.64</div> </div> <div> <div>98.22</div> <div>-0.7</div> <div>50.00</div> <div>37.14</div> <div>319.06</div> </div> <div> <div>98.17</div> <div>-0.7</div> <div>50.00</div> <div>34.48</div> <div>322.47</div> </div> <div> <div>98.17</div> <div>-0.7</div> <div>50.00</div> <div>34.48</div> <div>322.47</div> </div>		
Schnitt:	Anlage M1 Schnitt 4L	Seite Anlage M1/38
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																																																							
<table><tr><td>98.12</td><td>-0.6</td><td>50.00</td><td>31.85</td><td>325.88</td></tr><tr><td>97.97</td><td>-0.5</td><td>50.00</td><td>24.10</td><td>336.12</td></tr><tr><td>97.92</td><td>-0.4</td><td>50.00</td><td>21.56</td><td>339.53</td></tr><tr><td>97.92</td><td>-0.4</td><td>50.00</td><td>21.56</td><td>339.53</td></tr><tr><td>97.87</td><td>-0.4</td><td>50.00</td><td>18.98</td><td>343.04</td></tr><tr><td>97.21</td><td>0.3</td><td>50.00</td><td>-13.17</td><td>388.59</td></tr><tr><td>97.16</td><td>0.3</td><td>50.00</td><td>-15.56</td><td>392.10</td></tr><tr><td>97.16</td><td>0.3</td><td>50.00</td><td>-15.56</td><td>392.10</td></tr><tr><td>97.11</td><td>0.4</td><td>50.00</td><td>-17.95</td><td>395.60</td></tr><tr><td>96.45</td><td>1.0</td><td>50.00</td><td>-48.74</td><td>441.16</td></tr><tr><td>96.40</td><td>1.0</td><td>50.00</td><td>-51.11</td><td>444.66</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.05332592 Theoretischer Fußpunkt = 96.399 m</p> <p>Einbindetiefe tg = 6.15 m Profillänge = 9.80 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 185.44 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 20.50 \text{ kN/m}</math> <math>E_{av,k} = 77.19 \text{ kN/m}</math> (<math>E_{ah,k} = 421.52 \text{ kN/m}</math>) <math>B_{v,k} = 176.84</math> Summe <math>V_{,k} = 106.30 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 97.28 bis 93.76 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 96.40 55.00 s3: Flussskies, -sand Mantelfläche bis 96.40 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math> <math>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}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 1106.66 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 250.35 - 0.00 + 98.42 + 27.68 = 376.44 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 376.44 / 1106.66 = 0.34</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			98.12	-0.6	50.00	31.85	325.88	97.97	-0.5	50.00	24.10	336.12	97.92	-0.4	50.00	21.56	339.53	97.92	-0.4	50.00	21.56	339.53	97.87	-0.4	50.00	18.98	343.04	97.21	0.3	50.00	-13.17	388.59	97.16	0.3	50.00	-15.56	392.10	97.16	0.3	50.00	-15.56	392.10	97.11	0.4	50.00	-17.95	395.60	96.45	1.0	50.00	-48.74	441.16	96.40	1.0	50.00	-51.11	444.66
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97.21	0.3	50.00	-13.17	388.59																																																					
97.16	0.3	50.00	-15.56	392.10																																																					
97.16	0.3	50.00	-15.56	392.10																																																					
97.11	0.4	50.00	-17.95	395.60																																																					
96.45	1.0	50.00	-48.74	441.16																																																					
96.40	1.0	50.00	-51.11	444.66																																																					
Schnitt: Anlage M1 Schnitt 4L		Seite Anlage M1/39																																																							
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11139																																																							
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 N1 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: 01_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 N1 Schnitt 5L		Seite Anlage N1/1
Kapitel: 1 LF 1 (BS-T)		Archiv Nr. 1119
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

Art des Fußlagers:

Profillänge automatisch und Fuß gebettet

Profillänge = 6.20 m

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 450.645 / 460.374 = 0.979$

Bettungslager  $B_{h,d} = 450.645 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 460.374 \text{ kN/m}$

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

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	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


  

Aktive Erddruckordinaten ([g+q],k)

mit Zusatzdrücke

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
106.150	106.090	0.000	0.000	0.00
106.090	105.810	0.000	2.821	0.00
105.810	105.750	2.821	3.425	0.00
105.750	105.500	3.425	5.944	0.00
105.500	105.150	5.944	9.470	0.00
105.150	105.000	9.470	10.981	3.50
105.000	104.750	10.981	13.500	5.00
104.750	104.420	0.000	0.000	5.00
104.420	104.111	0.000	0.000	5.00
104.111	103.750	0.000	0.000	5.00
103.750	103.748	0.000	21.374	5.00
103.748	103.655	21.374	21.769	5.00
103.655	103.560	21.769	39.135	5.00
103.560	103.530	39.135	37.716	5.00
103.530	103.461	37.716	40.523	5.00
103.461	103.406	40.523	45.553	5.00
103.406	103.309	45.553	60.521	5.00
103.309	103.282	60.521	60.538	5.00
103.282	103.158	60.538	66.500	5.00
103.158	103.083	66.500	72.924	5.00

Schnitt:	Anlage N1	Schnitt 5L	Seite Anlage N1/2
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
103.083	103.059	72.924	76.709	5.00	5.00
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	102.031	80.647	78.301	5.00	5.00
102.031	101.883	78.301	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	101.113	49.965	45.660	5.00	5.00
101.113	100.956	45.660	42.432	5.00	5.00
100.956	100.851	42.432	40.280	5.00	5.00
100.851	100.149	40.280	44.525	5.00	5.00
100.149	99.949	44.525	45.738	5.00	5.00
99.949	99.284	45.738	49.758	5.00	5.00
99.284	98.106	49.758	54.587	5.00	5.00
98.106	93.368	54.587	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 Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.15 105.75					
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 -50.90 103.75 103.65 -50.90 -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 N1 Schnitt 5L					Seite Anlage N1/3
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>102.13102.03-142.47-146.68</div><div>102.03101.88-146.68-153.00</div><div>101.88101.79-153.00-156.86</div><div>101.79101.32-156.86-176.85</div><div>101.32101.11-176.85-185.73</div><div>101.11100.96-185.73-192.40</div><div>100.96100.85-192.40-196.84</div><div>100.85100.15-196.84-226.68</div><div>100.1599.95-226.68-235.20</div><div>99.9599.28-235.20-263.46</div><div>99.2898.11-263.46-313.51</div><div>98.1193.37-313.51-514.89</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><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>-1.3</td><td>0.0</td><td>0.0</td></tr><tr><td>105.81</td><td>-7.4</td><td>-0.5</td><td>0.0</td></tr><tr><td>105.75</td><td>-8.7</td><td>-0.7</td><td>-0.1</td></tr><tr><td>105.50</td><td>-13.7</td><td>-0.5</td><td>-0.3</td></tr><tr><td>105.15</td><td>-19.1</td><td>4.1</td><td>0.2</td></tr><tr><td>105.00</td><td>-20.7</td><td>7.5</td><td>1.1</td></tr><tr><td>104.75</td><td>-23.0</td><td>14.6</td><td>3.8</td></tr><tr><td>104.42</td><td>-25.1</td><td>31.5</td><td>11.4</td></tr><tr><td>104.42</td><td>-25.1</td><td>-79.7</td><td>11.4</td></tr><tr><td>104.11</td><td>-26.5</td><td>-61.8</td><td>-10.5</td></tr><tr><td>103.75</td><td>-28.7</td><td>-42.8</td><td>-29.3</td></tr><tr><td>103.75</td><td>-28.7</td><td>-42.7</td><td>-29.4</td></tr><tr><td>103.65</td><td>-29.4</td><td>-40.5</td><td>-33.3</td></tr><tr><td>103.56</td><td>-30.1</td><td>-39.3</td><td>-37.0</td></tr><tr><td>103.53</td><td>-30.4</td><td>-39.3</td><td>-38.2</td></tr><tr><td>103.46</td><td>-30.9</td><td>-39.3</td><td>-40.9</td></tr><tr><td>103.41</td><td>-31.4</td><td>-39.6</td><td>-43.1</td></tr><tr><td>103.31</td><td>-32.2</td><td>-41.5</td><td>-47.0</td></tr><tr><td>103.28</td><td>-32.5</td><td>-42.2</td><td>-48.2</td></tr><tr><td>103.16</td><td>-33.7</td><td>-46.4</td><td>-53.7</td></tr><tr><td>103.08</td><td>-34.4</td><td>-49.5</td><td>-57.2</td></tr><tr><td>103.06</td><td>-34.7</td><td>-50.8</td><td>-58.4</td></tr><tr><td>103.03</td><td>-35.0</td><td>-52.1</td><td>-59.7</td></tr><tr><td>102.91</td><td>-36.3</td><td>-59.5</td><td>-66.7</td></tr><tr><td>102.77</td><td>-37.8</td><td>-69.5</td><td>-75.3</td></tr><tr><td>102.71</td><td>-38.6</td><td>-75.3</td><td>-80.3</td></tr><tr><td>102.60</td><td>-40.0</td><td>-84.7</td><td>-88.8</td></tr><tr><td>102.48</td><td>-31.3</td><td>-68.1</td><td>-98.1</td></tr><tr><td>102.44</td><td>-28.4</td><td>-62.6</td><td>-100.7</td></tr><tr><td>102.26</td><td>-14.9</td><td>-36.1</td><td>-109.4</td></tr><tr><td>102.18</td><td>-8.2</td><td>-23.0</td><td>-111.8</td></tr><tr><td>102.13</td><td>-4.1</td><td>-14.8</td><td>-112.8</td></tr><tr><td>102.03</td><td>3.6</td><td>0.3</td><td>-113.5</td></tr><tr><td>101.88</td><td>13.8</td><td>20.3</td><td>-111.9</td></tr><tr><td>101.79</td><td>19.3</td><td>31.2</td><td>-109.6</td></tr><tr><td>101.32</td><td>38.8</td><td>71.1</td><td>-84.4</td></tr><tr><td>101.11</td><td>42.6</td><td>79.6</td><td>-68.6</td></tr><tr><td>100.96</td><td>43.7</td><td>81.9</td><td>-55.9</td></tr><tr><td>100.85</td><td>43.5</td><td>81.4</td><td>-47.3</td></tr><tr><td>100.15</td><td>37.4</td><td>30.2</td><td>-3.1</td></tr><tr><td>99.95</td><td>40.4</td><td>0.0</td><td>0.0</td></tr></table></div></div>			Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/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	105.75	-8.7	-0.7	-0.1	105.50	-13.7	-0.5	-0.3	105.15	-19.1	4.1	0.2	105.00	-20.7	7.5	1.1	104.75	-23.0	14.6	3.8	104.42	-25.1	31.5	11.4	104.42	-25.1	-79.7	11.4	104.11	-26.5	-61.8	-10.5	103.75	-28.7	-42.8	-29.3	103.75	-28.7	-42.7	-29.4	103.65	-29.4	-40.5	-33.3	103.56	-30.1	-39.3	-37.0	103.53	-30.4	-39.3	-38.2	103.46	-30.9	-39.3	-40.9	103.41	-31.4	-39.6	-43.1	103.31	-32.2	-41.5	-47.0	103.28	-32.5	-42.2	-48.2	103.16	-33.7	-46.4	-53.7	103.08	-34.4	-49.5	-57.2	103.06	-34.7	-50.8	-58.4	103.03	-35.0	-52.1	-59.7	102.91	-36.3	-59.5	-66.7	102.77	-37.8	-69.5	-75.3	102.71	-38.6	-75.3	-80.3	102.60	-40.0	-84.7	-88.8	102.48	-31.3	-68.1	-98.1	102.44	-28.4	-62.6	-100.7	102.26	-14.9	-36.1	-109.4	102.18	-8.2	-23.0	-111.8	102.13	-4.1	-14.8	-112.8	102.03	3.6	0.3	-113.5	101.88	13.8	20.3	-111.9	101.79	19.3	31.2	-109.6	101.32	38.8	71.1	-84.4	101.11	42.6	79.6	-68.6	100.96	43.7	81.9	-55.9	100.85	43.5	81.4	-47.3	100.15	37.4	30.2	-3.1	99.95	40.4	0.0	0.0
Tiefe	N	Q	M																																																																																																																																																																															
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]																																																																																																																																																																															
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105.75	-8.7	-0.7	-0.1																																																																																																																																																																															
105.50	-13.7	-0.5	-0.3																																																																																																																																																																															
105.15	-19.1	4.1	0.2																																																																																																																																																																															
105.00	-20.7	7.5	1.1																																																																																																																																																																															
104.75	-23.0	14.6	3.8																																																																																																																																																																															
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104.42	-25.1	-79.7	11.4																																																																																																																																																																															
104.11	-26.5	-61.8	-10.5																																																																																																																																																																															
103.75	-28.7	-42.8	-29.3																																																																																																																																																																															
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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>106.15</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>-20.1</td><td>12.2</td><td>3.2</td></tr> <tr><td>104.42</td><td>-22.1</td><td>26.5</td><td>9.5</td></tr> <tr><td>104.42</td><td>-22.1</td><td>-66.2</td><td>9.5</td></tr> <tr><td>104.11</td><td>-23.4</td><td>-51.0</td><td>-8.6</td></tr> <tr><td>103.75</td><td>-25.4</td><td>-34.8</td><td>-24.0</td></tr> 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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	-20.1	12.2	3.2																																																																																																																																																																																																																																																																																
104.42	-22.1	26.5	9.5																																																																																																																																																																																																																																																																																
104.42	-22.1	-66.2	9.5																																																																																																																																																																																																																																																																																
104.11	-23.4	-51.0	-8.6																																																																																																																																																																																																																																																																																
103.75	-25.4	-34.8	-24.0																																																																																																																																																																																																																																																																																
103.75	-25.5	-34.7	-24.1																																																																																																																																																																																																																																																																																
103.65	-26.1	-32.9	-27.3																																																																																																																																																																																																																																																																																
103.56	-26.7	-32.0	-30.3																																																																																																																																																																																																																																																																																
103.53	-26.9	-32.0	-31.3																																																																																																																																																																																																																																																																																
103.46	-27.4	-32.0	-33.5																																																																																																																																																																																																																																																																																
103.41	-27.9	-32.4	-35.3																																																																																																																																																																																																																																																																																
103.31	-28.6	-34.0	-38.5																																																																																																																																																																																																																																																																																
103.28	-28.9	-34.7	-39.4																																																																																																																																																																																																																																																																																
103.16	-29.9	-38.4	-43.9																																																																																																																																																																																																																																																																																
103.08	-30.6	-41.2	-46.9																																																																																																																																																																																																																																																																																
Schnitt:	Anlage N1	Schnitt 5L	Seite Anlage N1/5																																																																																																																																																																																																																																																																																
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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>103.06</div><div>-30.8</div><div>-42.3</div><div>-47.9</div></div><div><div>103.03</div><div>-31.0</div><div>-43.5</div><div>-49.0</div></div><div><div>102.91</div><div>-32.2</div><div>-50.0</div><div>-54.8</div></div><div><div>102.77</div><div>-33.6</div><div>-58.8</div><div>-62.1</div></div><div><div>102.71</div><div>-34.3</div><div>-63.8</div><div>-66.3</div></div><div><div>102.60</div><div>-35.5</div><div>-72.1</div><div>-73.5</div></div><div><div>102.48</div><div>-28.1</div><div>-58.1</div><div>-81.5</div></div><div><div>102.44</div><div>-25.7</div><div>-53.5</div><div>-83.7</div></div><div><div>102.26</div><div>-14.2</div><div>-31.3</div><div>-91.2</div></div><div><div>102.18</div><div>-8.5</div><div>-20.2</div><div>-93.3</div></div><div><div>102.13</div><div>-5.0</div><div>-13.3</div><div>-94.1</div></div><div><div>102.03</div><div>1.5</div><div>-0.6</div><div>-94.8</div></div><div><div>101.88</div><div>10.2</div><div>16.3</div><div>-93.6</div></div><div><div>101.79</div><div>14.9</div><div>25.5</div><div>-91.7</div></div><div><div>101.32</div><div>31.5</div><div>59.3</div><div>-70.8</div></div><div><div>101.11</div><div>34.9</div><div>66.6</div><div>-57.6</div></div><div><div>100.96</div><div>35.7</div><div>68.6</div><div>-46.9</div></div><div><div>100.85</div><div>35.5</div><div>68.3</div><div>-39.8</div></div><div><div>100.15</div><div>29.7</div><div>25.5</div><div>-2.7</div></div><div><div>99.95</div><div>32.0</div><div>0.0</div><div>0.0</div></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><div>106.15</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>106.09</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>105.75</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>105.15</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>104.75</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.42</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>104.11</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.75</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.75</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.65</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.56</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.53</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.46</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>103.31</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.28</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.16</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.08</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.06</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.03</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.91</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.77</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.71</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>102.48</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>102.26</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.18</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.13</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.03</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.88</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>101.32</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.11</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.96</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.85</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.15</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.95</div><div>0.0</div><div>0.0</div><div>0.0</div></div></div>					
Schnitt:		Anlage N1    Schnitt 5L		Seite Anlage N116	
Kapitel:		1                    LF 1 (BS-T)		Archiv Nr.: 116	
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>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>106.15</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-15.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-15.7</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-15.6</td><td>0.00</td><td>0.00</td><td>2.58</td></tr><tr><td>105.55</td><td>-15.1</td><td>0.68</td><td>10.31</td><td>10.31</td></tr><tr><td>105.50</td><td>-14.9</td><td>0.68</td><td>10.21</td><td>12.89</td></tr><tr><td>105.50</td><td>-14.9</td><td>0.86</td><td>12.89</td><td>12.89</td></tr><tr><td>105.45</td><td>-14.8</td><td>0.86</td><td>12.76</td><td>15.47</td></tr><tr><td>105.20</td><td>-14.0</td><td>2.03</td><td>28.37</td><td>28.36</td></tr><tr><td>105.15</td><td>-13.8</td><td>2.03</td><td>28.05</td><td>30.94</td></tr><tr><td>105.15</td><td>-13.8</td><td>2.24</td><td>30.94</td><td>30.94</td></tr><tr><td>105.10</td><td>-13.7</td><td>2.24</td><td>30.59</td><td>33.52</td></tr><tr><td>105.05</td><td>-13.5</td><td>2.67</td><td>36.10</td><td>36.10</td></tr><tr><td>105.00</td><td>-13.3</td><td>2.67</td><td>35.68</td><td>38.68</td></tr><tr><td>105.00</td><td>-13.3</td><td>2.90</td><td>38.68</td><td>38.68</td></tr><tr><td>104.95</td><td>-13.2</td><td>2.90</td><td>38.22</td><td>39.97</td></tr><tr><td>104.80</td><td>-12.7</td><td>3.45</td><td>43.84</td><td>43.84</td></tr><tr><td>104.75</td><td>-12.6</td><td>3.45</td><td>43.30</td><td>45.12</td></tr><tr><td>104.75</td><td>-12.6</td><td>3.59</td><td>45.13</td><td>45.12</td></tr><tr><td>104.70</td><td>-12.4</td><td>3.59</td><td>44.59</td><td>46.34</td></tr><tr><td>104.47</td><td>-11.7</td><td>4.49</td><td>52.42</td><td>52.42</td></tr><tr><td>104.42</td><td>-11.5</td><td>4.49</td><td>51.75</td><td>53.63</td></tr><tr><td>104.42</td><td>-11.5</td><td>4.66</td><td>53.64</td><td>53.63</td></tr><tr><td>104.37</td><td>-11.4</td><td>4.66</td><td>52.88</td><td>54.96</td></tr><tr><td>104.16</td><td>-10.7</td><td>5.00</td><td>53.54</td><td>60.28</td></tr><tr><td>104.11</td><td>-10.5</td><td>5.00</td><td>52.73</td><td>61.61</td></tr><tr><td>104.11</td><td>-10.5</td><td>5.00</td><td>52.73</td><td>61.61</td></tr><tr><td>104.06</td><td>-10.4</td><td>5.00</td><td>51.91</td><td>62.94</td></tr><tr><td>103.80</td><td>-9.6</td><td>5.00</td><td>47.86</td><td>69.58</td></tr><tr><td>103.75</td><td>-9.4</td><td>5.00</td><td>47.04</td><td>70.91</td></tr><tr><td>103.75</td><td>-9.4</td><td>5.00</td><td>47.04</td><td>82.64</td></tr><tr><td>103.75</td><td>-9.4</td><td>5.00</td><td>47.01</td><td>82.71</td></tr><tr><td>103.75</td><td>-9.4</td><td>5.00</td><td>47.01</td><td>82.71</td></tr><tr><td>103.70</td><td>-9.3</td><td>5.00</td><td>46.28</td><td>83.90</td></tr><tr><td>103.70</td><td>-9.3</td><td>5.00</td><td>46.28</td><td>83.90</td></tr><tr><td>103.65</td><td>-9.1</td><td>5.00</td><td>45.55</td><td>85.10</td></tr><tr><td>103.65</td><td>-9.1</td><td>5.00</td><td>45.55</td><td>85.10</td></tr><tr><td>103.61</td><td>-9.0</td><td>5.00</td><td>44.81</td><td>86.32</td></tr><tr><td>103.61</td><td>-9.0</td><td>5.00</td><td>44.81</td><td>86.32</td></tr><tr><td>103.56</td><td>-8.8</td><td>5.00</td><td>44.07</td><td>87.54</td></tr><tr><td>103.56</td><td>-8.8</td><td>5.00</td><td>44.07</td><td>87.54</td></tr><tr><td>103.53</td><td>-8.7</td><td>5.00</td><td>43.60</td><td>88.30</td></tr><tr><td>103.53</td><td>-8.7</td><td>5.00</td><td>43.60</td><td>88.30</td></tr><tr><td>103.46</td><td>-8.5</td><td>5.00</td><td>42.51</td><td>90.10</td></tr><tr><td>103.46</td><td>-8.5</td><td>5.00</td><td>42.51</td><td>90.10</td></tr><tr><td>103.41</td><td>-8.3</td><td>5.00</td><td>41.66</td><td>91.51</td></tr><tr><td>103.41</td><td>-8.3</td><td>5.00</td><td>41.66</td><td>91.51</td></tr><tr><td>103.36</td><td>-8.2</td><td>5.00</td><td>40.90</td><td>92.75</td></tr><tr><td>103.36</td><td>-8.2</td><td>5.00</td><td>40.90</td><td>92.75</td></tr><tr><td>103.31</td><td>-8.0</td><td>5.00</td><td>40.15</td><td>94.00</td></tr><tr><td>103.31</td><td>-8.0</td><td>5.00</td><td>40.15</td><td>94.00</td></tr><tr><td>103.28</td><td>-7.9</td><td>5.00</td><td>39.72</td><td>94.71</td></tr><tr><td>103.28</td><td>-7.9</td><td>5.00</td><td>39.72</td><td>94.71</td></tr><tr><td>103.22</td><td>-7.7</td><td>5.00</td><td>38.75</td><td>96.31</td></tr><tr><td>103.22</td><td>-7.7</td><td>5.00</td><td>38.75</td><td>96.31</td></tr><tr><td>103.16</td><td>-7.6</td><td>5.00</td><td>37.78</td><td>97.92</td></tr><tr><td>103.16</td><td>-7.6</td><td>5.00</td><td>37.78</td><td>97.92</td></tr><tr><td>103.08</td><td>-7.3</td><td>5.00</td><td>36.63</td><td>99.83</td></tr><tr><td>103.08</td><td>-7.3</td><td>5.00</td><td>36.63</td><td>99.83</td></tr><tr><td>103.06</td><td>-7.2</td><td>5.00</td><td>36.24</td><td>100.47</td></tr><tr><td>103.06</td><td>-7.2</td><td>5.00</td><td>36.24</td><td>100.47</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.15	-17.0	-	-	-	106.09	-16.8	-	-	-	106.09	-16.8	-	-	-	106.04	-16.6	-	-	-	105.86	-16.0	-	-	-	105.81	-15.9	-	-	-	105.81	-15.9	-	-	-	105.75	-15.7	0.00	0.00	0.00	105.75	-15.7	0.00	0.00	0.00	105.70	-15.6	0.00	0.00	2.58	105.55	-15.1	0.68	10.31	10.31	105.50	-14.9	0.68	10.21	12.89	105.50	-14.9	0.86	12.89	12.89	105.45	-14.8	0.86	12.76	15.47	105.20	-14.0	2.03	28.37	28.36	105.15	-13.8	2.03	28.05	30.94	105.15	-13.8	2.24	30.94	30.94	105.10	-13.7	2.24	30.59	33.52	105.05	-13.5	2.67	36.10	36.10	105.00	-13.3	2.67	35.68	38.68	105.00	-13.3	2.90	38.68	38.68	104.95	-13.2	2.90	38.22	39.97	104.80	-12.7	3.45	43.84	43.84	104.75	-12.6	3.45	43.30	45.12	104.75	-12.6	3.59	45.13	45.12	104.70	-12.4	3.59	44.59	46.34	104.47	-11.7	4.49	52.42	52.42	104.42	-11.5	4.49	51.75	53.63	104.42	-11.5	4.66	53.64	53.63	104.37	-11.4	4.66	52.88	54.96	104.16	-10.7	5.00	53.54	60.28	104.11	-10.5	5.00	52.73	61.61	104.11	-10.5	5.00	52.73	61.61	104.06	-10.4	5.00	51.91	62.94	103.80	-9.6	5.00	47.86	69.58	103.75	-9.4	5.00	47.04	70.91	103.75	-9.4	5.00	47.04	82.64	103.75	-9.4	5.00	47.01	82.71	103.75	-9.4	5.00	47.01	82.71	103.70	-9.3	5.00	46.28	83.90	103.70	-9.3	5.00	46.28	83.90	103.65	-9.1	5.00	45.55	85.10	103.65	-9.1	5.00	45.55	85.10	103.61	-9.0	5.00	44.81	86.32	103.61	-9.0	5.00	44.81	86.32	103.56	-8.8	5.00	44.07	87.54	103.56	-8.8	5.00	44.07	87.54	103.53	-8.7	5.00	43.60	88.30	103.53	-8.7	5.00	43.60	88.30	103.46	-8.5	5.00	42.51	90.10	103.46	-8.5	5.00	42.51	90.10	103.41	-8.3	5.00	41.66	91.51	103.41	-8.3	5.00	41.66	91.51	103.36	-8.2	5.00	40.90	92.75	103.36	-8.2	5.00	40.90	92.75	103.31	-8.0	5.00	40.15	94.00	103.31	-8.0	5.00	40.15	94.00	103.28	-7.9	5.00	39.72	94.71	103.28	-7.9	5.00	39.72	94.71	103.22	-7.7	5.00	38.75	96.31	103.22	-7.7	5.00	38.75	96.31	103.16	-7.6	5.00	37.78	97.92	103.16	-7.6	5.00	37.78	97.92	103.08	-7.3	5.00	36.63	99.83	103.08	-7.3	5.00	36.63	99.83	103.06	-7.2	5.00	36.24	100.47	103.06	-7.2	5.00	36.24	100.47
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103.31	-8.0	5.00	40.15	94.00																																																																																																																																																																																																																																																																																																																																																							
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103.28	-7.9	5.00	39.72	94.71																																																																																																																																																																																																																																																																																																																																																							
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103.22	-7.7	5.00	38.75	96.31																																																																																																																																																																																																																																																																																																																																																							
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103.16	-7.6	5.00	37.78	97.92																																																																																																																																																																																																																																																																																																																																																							
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103.08	-7.3	5.00	36.63	99.83																																																																																																																																																																																																																																																																																																																																																							
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103.06	-7.2	5.00	36.24	100.47																																																																																																																																																																																																																																																																																																																																																							
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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>103.03</td><td>-7.2</td><td>5.00</td><td>35.85</td><td>101.12</td></tr><tr><td>103.03</td><td>-7.2</td><td>5.00</td><td>35.85</td><td>101.12</td></tr><tr><td>102.97</td><td>-7.0</td><td>5.00</td><td>34.89</td><td>102.72</td></tr><tr><td>102.97</td><td>-7.0</td><td>5.00</td><td>34.89</td><td>102.72</td></tr><tr><td>102.91</td><td>-6.8</td><td>5.00</td><td>33.93</td><td>104.32</td></tr><tr><td>102.91</td><td>-6.8</td><td>5.00</td><td>33.93</td><td>104.32</td></tr><tr><td>102.86</td><td>-6.6</td><td>5.00</td><td>33.24</td><td>105.48</td></tr><tr><td>102.82</td><td>-6.5</td><td>5.00</td><td>32.55</td><td>106.64</td></tr><tr><td>102.77</td><td>-6.4</td><td>5.00</td><td>31.86</td><td>107.80</td></tr><tr><td>102.77</td><td>-6.4</td><td>5.00</td><td>31.86</td><td>107.80</td></tr><tr><td>102.71</td><td>-6.2</td><td>5.00</td><td>30.81</td><td>109.56</td></tr><tr><td>102.71</td><td>-6.2</td><td>5.00</td><td>30.81</td><td>109.56</td></tr><tr><td>102.65</td><td>-6.0</td><td>5.00</td><td>29.99</td><td>110.93</td></tr><tr><td>102.65</td><td>-6.0</td><td>5.00</td><td>29.99</td><td>110.93</td></tr><tr><td>102.60</td><td>-5.8</td><td>5.00</td><td>29.18</td><td>112.30</td></tr><tr><td>102.60</td><td>-5.8</td><td>34.12</td><td>199.10</td><td>199.09</td></tr><tr><td>102.54</td><td>-5.6</td><td>34.12</td><td>192.72</td><td>203.33</td></tr><tr><td>102.54</td><td>-5.6</td><td>36.00</td><td>203.34</td><td>203.33</td></tr><tr><td>102.48</td><td>-5.5</td><td>36.00</td><td>196.62</td><td>207.57</td></tr><tr><td>102.48</td><td>-5.5</td><td>38.00</td><td>207.58</td><td>207.57</td></tr><tr><td>102.44</td><td>-5.3</td><td>38.00</td><td>203.09</td><td>210.25</td></tr><tr><td>102.44</td><td>-5.3</td><td>39.35</td><td>210.26</td><td>210.25</td></tr><tr><td>102.39</td><td>-5.2</td><td>39.35</td><td>205.01</td><td>213.29</td></tr><tr><td>102.31</td><td>-4.9</td><td>44.37</td><td>219.39</td><td>219.38</td></tr><tr><td>102.26</td><td>-4.8</td><td>44.37</td><td>213.51</td><td>222.42</td></tr><tr><td>102.26</td><td>-4.8</td><td>46.23</td><td>222.44</td><td>222.42</td></tr><tr><td>102.22</td><td>-4.7</td><td>46.23</td><td>216.74</td><td>225.26</td></tr><tr><td>102.22</td><td>-4.7</td><td>48.05</td><td>225.27</td><td>225.26</td></tr><tr><td>102.18</td><td>-4.6</td><td>48.05</td><td>219.36</td><td>228.10</td></tr><tr><td>102.18</td><td>-4.6</td><td>49.97</td><td>228.11</td><td>228.10</td></tr><tr><td>102.13</td><td>-4.4</td><td>49.97</td><td>220.71</td><td>231.52</td></tr><tr><td>102.13</td><td>-4.4</td><td>50.00</td><td>220.85</td><td>231.52</td></tr><tr><td>102.08</td><td>-4.3</td><td>50.00</td><td>213.46</td><td>234.94</td></tr><tr><td>102.08</td><td>-4.3</td><td>50.00</td><td>213.46</td><td>234.94</td></tr><tr><td>102.03</td><td>-4.1</td><td>50.00</td><td>206.09</td><td>238.36</td></tr><tr><td>102.03</td><td>-4.1</td><td>50.00</td><td>206.09</td><td>238.36</td></tr><tr><td>101.98</td><td>-4.0</td><td>50.00</td><td>198.74</td><td>241.78</td></tr><tr><td>101.93</td><td>-3.8</td><td>50.00</td><td>191.41</td><td>245.21</td></tr><tr><td>101.88</td><td>-3.7</td><td>50.00</td><td>184.11</td><td>248.63</td></tr><tr><td>101.88</td><td>-3.7</td><td>50.00</td><td>184.11</td><td>248.63</td></tr><tr><td>101.84</td><td>-3.5</td><td>50.00</td><td>177.42</td><td>251.77</td></tr><tr><td>101.84</td><td>-3.5</td><td>50.00</td><td>177.42</td><td>251.77</td></tr><tr><td>101.79</td><td>-3.4</td><td>50.00</td><td>170.75</td><td>254.90</td></tr><tr><td>101.79</td><td>-3.4</td><td>50.00</td><td>170.75</td><td>254.90</td></tr><tr><td>101.74</td><td>-3.3</td><td>50.00</td><td>163.10</td><td>258.51</td></tr><tr><td>101.37</td><td>-2.2</td><td>50.00</td><td>110.10</td><td>283.77</td></tr><tr><td>101.32</td><td>-2.1</td><td>50.00</td><td>102.61</td><td>287.38</td></tr><tr><td>101.32</td><td>-2.1</td><td>50.00</td><td>102.61</td><td>287.38</td></tr><tr><td>101.27</td><td>-1.9</td><td>50.00</td><td>95.12</td><td>290.99</td></tr><tr><td>101.16</td><td>-1.6</td><td>50.00</td><td>80.21</td><td>298.21</td></tr><tr><td>101.11</td><td>-1.5</td><td>50.00</td><td>72.77</td><td>301.82</td></tr><tr><td>101.11</td><td>-1.5</td><td>50.00</td><td>72.77</td><td>301.82</td></tr><tr><td>101.06</td><td>-1.3</td><td>50.00</td><td>65.35</td><td>305.43</td></tr><tr><td>101.01</td><td>-1.2</td><td>50.00</td><td>57.94</td><td>309.03</td></tr><tr><td>100.96</td><td>-1.0</td><td>50.00</td><td>50.54</td><td>312.64</td></tr><tr><td>100.96</td><td>-1.0</td><td>50.00</td><td>50.54</td><td>312.64</td></tr><tr><td>100.90</td><td>-0.9</td><td>50.00</td><td>43.15</td><td>316.25</td></tr><tr><td>100.90</td><td>-0.9</td><td>50.00</td><td>43.15</td><td>316.25</td></tr><tr><td>100.85</td><td>-0.7</td><td>50.00</td><td>35.78</td><td>319.86</td></tr><tr><td>100.85</td><td>-0.7</td><td>50.00</td><td>35.78</td><td>319.86</td></tr><tr><td>100.80</td><td>-0.6</td><td>50.00</td><td>28.70</td><td>323.32</td></tr><tr><td>100.20</td><td>1.1</td><td>50.00</td><td>-55.74</td><td>364.89</td></tr><tr><td>100.15</td><td>1.3</td><td>50.00</td><td>-62.76</td><td>368.35</td></tr><tr><td>100.15</td><td>1.3</td><td>50.00</td><td>-62.76</td><td>368.35</td></tr><tr><td>100.10</td><td>1.4</td><td>50.00</td><td>-69.78</td><td>371.81</td></tr><tr><td>100.00</td><td>1.7</td><td>50.00</td><td>-83.82</td><td>378.74</td></tr><tr><td>99.95</td><td>1.8</td><td>50.00</td><td>-90.84</td><td>382.20</td></tr></table>							103.03	-7.2	5.00	35.85	101.12	103.03	-7.2	5.00	35.85	101.12	102.97	-7.0	5.00	34.89	102.72	102.97	-7.0	5.00	34.89	102.72	102.91	-6.8	5.00	33.93	104.32	102.91	-6.8	5.00	33.93	104.32	102.86	-6.6	5.00	33.24	105.48	102.82	-6.5	5.00	32.55	106.64	102.77	-6.4	5.00	31.86	107.80	102.77	-6.4	5.00	31.86	107.80	102.71	-6.2	5.00	30.81	109.56	102.71	-6.2	5.00	30.81	109.56	102.65	-6.0	5.00	29.99	110.93	102.65	-6.0	5.00	29.99	110.93	102.60	-5.8	5.00	29.18	112.30	102.60	-5.8	34.12	199.10	199.09	102.54	-5.6	34.12	192.72	203.33	102.54	-5.6	36.00	203.34	203.33	102.48	-5.5	36.00	196.62	207.57	102.48	-5.5	38.00	207.58	207.57	102.44	-5.3	38.00	203.09	210.25	102.44	-5.3	39.35	210.26	210.25	102.39	-5.2	39.35	205.01	213.29	102.31	-4.9	44.37	219.39	219.38	102.26	-4.8	44.37	213.51	222.42	102.26	-4.8	46.23	222.44	222.42	102.22	-4.7	46.23	216.74	225.26	102.22	-4.7	48.05	225.27	225.26	102.18	-4.6	48.05	219.36	228.10	102.18	-4.6	49.97	228.11	228.10	102.13	-4.4	49.97	220.71	231.52	102.13	-4.4	50.00	220.85	231.52	102.08	-4.3	50.00	213.46	234.94	102.08	-4.3	50.00	213.46	234.94	102.03	-4.1	50.00	206.09	238.36	102.03	-4.1	50.00	206.09	238.36	101.98	-4.0	50.00	198.74	241.78	101.93	-3.8	50.00	191.41	245.21	101.88	-3.7	50.00	184.11	248.63	101.88	-3.7	50.00	184.11	248.63	101.84	-3.5	50.00	177.42	251.77	101.84	-3.5	50.00	177.42	251.77	101.79	-3.4	50.00	170.75	254.90	101.79	-3.4	50.00	170.75	254.90	101.74	-3.3	50.00	163.10	258.51	101.37	-2.2	50.00	110.10	283.77	101.32	-2.1	50.00	102.61	287.38	101.32	-2.1	50.00	102.61	287.38	101.27	-1.9	50.00	95.12	290.99	101.16	-1.6	50.00	80.21	298.21	101.11	-1.5	50.00	72.77	301.82	101.11	-1.5	50.00	72.77	301.82	101.06	-1.3	50.00	65.35	305.43	101.01	-1.2	50.00	57.94	309.03	100.96	-1.0	50.00	50.54	312.64	100.96	-1.0	50.00	50.54	312.64	100.90	-0.9	50.00	43.15	316.25	100.90	-0.9	50.00	43.15	316.25	100.85	-0.7	50.00	35.78	319.86	100.85	-0.7	50.00	35.78	319.86	100.80	-0.6	50.00	28.70	323.32	100.20	1.1	50.00	-55.74	364.89	100.15	1.3	50.00	-62.76	368.35	100.15	1.3	50.00	-62.76	368.35	100.10	1.4	50.00	-69.78	371.81	100.00	1.7	50.00	-83.82	378.74	99.95	1.8	50.00	-90.84	382.20
103.03	-7.2	5.00	35.85	101.12																																																																																																																																																																																																																																																																																																																																																	
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102.97	-7.0	5.00	34.89	102.72																																																																																																																																																																																																																																																																																																																																																	
102.97	-7.0	5.00	34.89	102.72																																																																																																																																																																																																																																																																																																																																																	
102.91	-6.8	5.00	33.93	104.32																																																																																																																																																																																																																																																																																																																																																	
102.91	-6.8	5.00	33.93	104.32																																																																																																																																																																																																																																																																																																																																																	
102.86	-6.6	5.00	33.24	105.48																																																																																																																																																																																																																																																																																																																																																	
102.82	-6.5	5.00	32.55	106.64																																																																																																																																																																																																																																																																																																																																																	
102.77	-6.4	5.00	31.86	107.80																																																																																																																																																																																																																																																																																																																																																	
102.77	-6.4	5.00	31.86	107.80																																																																																																																																																																																																																																																																																																																																																	
102.71	-6.2	5.00	30.81	109.56																																																																																																																																																																																																																																																																																																																																																	
102.71	-6.2	5.00	30.81	109.56																																																																																																																																																																																																																																																																																																																																																	
102.65	-6.0	5.00	29.99	110.93																																																																																																																																																																																																																																																																																																																																																	
102.65	-6.0	5.00	29.99	110.93																																																																																																																																																																																																																																																																																																																																																	
102.60	-5.8	5.00	29.18	112.30																																																																																																																																																																																																																																																																																																																																																	
102.60	-5.8	34.12	199.10	199.09																																																																																																																																																																																																																																																																																																																																																	
102.54	-5.6	34.12	192.72	203.33																																																																																																																																																																																																																																																																																																																																																	
102.54	-5.6	36.00	203.34	203.33																																																																																																																																																																																																																																																																																																																																																	
102.48	-5.5	36.00	196.62	207.57																																																																																																																																																																																																																																																																																																																																																	
102.48	-5.5	38.00	207.58	207.57																																																																																																																																																																																																																																																																																																																																																	
102.44	-5.3	38.00	203.09	210.25																																																																																																																																																																																																																																																																																																																																																	
102.44	-5.3	39.35	210.26	210.25																																																																																																																																																																																																																																																																																																																																																	
102.39	-5.2	39.35	205.01	213.29																																																																																																																																																																																																																																																																																																																																																	
102.31	-4.9	44.37	219.39	219.38																																																																																																																																																																																																																																																																																																																																																	
102.26	-4.8	44.37	213.51	222.42																																																																																																																																																																																																																																																																																																																																																	
102.26	-4.8	46.23	222.44	222.42																																																																																																																																																																																																																																																																																																																																																	
102.22	-4.7	46.23	216.74	225.26																																																																																																																																																																																																																																																																																																																																																	
102.22	-4.7	48.05	225.27	225.26																																																																																																																																																																																																																																																																																																																																																	
102.18	-4.6	48.05	219.36	228.10																																																																																																																																																																																																																																																																																																																																																	
102.18	-4.6	49.97	228.11	228.10																																																																																																																																																																																																																																																																																																																																																	
102.13	-4.4	49.97	220.71	231.52																																																																																																																																																																																																																																																																																																																																																	
102.13	-4.4	50.00	220.85	231.52																																																																																																																																																																																																																																																																																																																																																	
102.08	-4.3	50.00	213.46	234.94																																																																																																																																																																																																																																																																																																																																																	
102.08	-4.3	50.00	213.46	234.94																																																																																																																																																																																																																																																																																																																																																	
102.03	-4.1	50.00	206.09	238.36																																																																																																																																																																																																																																																																																																																																																	
102.03	-4.1	50.00	206.09	238.36																																																																																																																																																																																																																																																																																																																																																	
101.98	-4.0	50.00	198.74	241.78																																																																																																																																																																																																																																																																																																																																																	
101.93	-3.8	50.00	191.41	245.21																																																																																																																																																																																																																																																																																																																																																	
101.88	-3.7	50.00	184.11	248.63																																																																																																																																																																																																																																																																																																																																																	
101.88	-3.7	50.00	184.11	248.63																																																																																																																																																																																																																																																																																																																																																	
101.84	-3.5	50.00	177.42	251.77																																																																																																																																																																																																																																																																																																																																																	
101.84	-3.5	50.00	177.42	251.77																																																																																																																																																																																																																																																																																																																																																	
101.79	-3.4	50.00	170.75	254.90																																																																																																																																																																																																																																																																																																																																																	
101.79	-3.4	50.00	170.75	254.90																																																																																																																																																																																																																																																																																																																																																	
101.74	-3.3	50.00	163.10	258.51																																																																																																																																																																																																																																																																																																																																																	
101.37	-2.2	50.00	110.10	283.77																																																																																																																																																																																																																																																																																																																																																	
101.32	-2.1	50.00	102.61	287.38																																																																																																																																																																																																																																																																																																																																																	
101.32	-2.1	50.00	102.61	287.38																																																																																																																																																																																																																																																																																																																																																	
101.27	-1.9	50.00	95.12	290.99																																																																																																																																																																																																																																																																																																																																																	
101.16	-1.6	50.00	80.21	298.21																																																																																																																																																																																																																																																																																																																																																	
101.11	-1.5	50.00	72.77	301.82																																																																																																																																																																																																																																																																																																																																																	
101.11	-1.5	50.00	72.77	301.82																																																																																																																																																																																																																																																																																																																																																	
101.06	-1.3	50.00	65.35	305.43																																																																																																																																																																																																																																																																																																																																																	
101.01	-1.2	50.00	57.94	309.03																																																																																																																																																																																																																																																																																																																																																	
100.96	-1.0	50.00	50.54	312.64																																																																																																																																																																																																																																																																																																																																																	
100.96	-1.0	50.00	50.54	312.64																																																																																																																																																																																																																																																																																																																																																	
100.90	-0.9	50.00	43.15	316.25																																																																																																																																																																																																																																																																																																																																																	
100.90	-0.9	50.00	43.15	316.25																																																																																																																																																																																																																																																																																																																																																	
100.85	-0.7	50.00	35.78	319.86																																																																																																																																																																																																																																																																																																																																																	
100.85	-0.7	50.00	35.78	319.86																																																																																																																																																																																																																																																																																																																																																	
100.80	-0.6	50.00	28.70	323.32																																																																																																																																																																																																																																																																																																																																																	
100.20	1.1	50.00	-55.74	364.89																																																																																																																																																																																																																																																																																																																																																	
100.15	1.3	50.00	-62.76	368.35																																																																																																																																																																																																																																																																																																																																																	
100.15	1.3	50.00	-62.76	368.35																																																																																																																																																																																																																																																																																																																																																	
100.10	1.4	50.00	-69.78	371.81																																																																																																																																																																																																																																																																																																																																																	
100.00	1.7	50.00	-83.82	378.74																																																																																																																																																																																																																																																																																																																																																	
99.95	1.8	50.00	-90.84	382.20																																																																																																																																																																																																																																																																																																																																																	
Schnitt:		Anlage N1 Schnitt 5L			Seite Anlage N1/8																																																																																																																																																																																																																																																																																																																																																
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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>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.16039976 Theoretischer Fußpunkt = 99.949 m  Einbindetiefe tg = 5.80 m Profillänge = 6.20 m  Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{k} - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_{k} = 117.32 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 40.23 \text{ kN/m}</math> (<math>E_{ah,k} = 236.01 \text{ kN/m}</math>) <math>B_{v,k} = 137.61</math> Summe <math>V_{k} = 19.95 \text{ kN/m}</math> (Druck)  Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.83 bis 97.31 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math>  Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>105.75</td><td>103.75</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>103.75</td><td>102.60</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.60</td><td>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m/m} \implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 145.75 / 1.40 = 104.11 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 969.16 \text{ kN/m}</math>  Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 140.79 - 0.00 + 46.27 + 0.00 = 187.06 \text{ kN/m}</math> <math>\implies \mu = V_{d} / R_{d} = 187.06 / 969.16 = 0.19</math>  Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.75	103.75	0.00	S2: Auelehm (über GS)	103.75	102.60	0.00	S2: Auelehm (unter GS)	102.60	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
105.75	103.75	0.00	S2: Auelehm (über GS)															
103.75	102.60	0.00	S2: Auelehm (unter GS)															
102.60	99.95	55.00	s3: Flussskies, -sand															
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/9																
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 119																
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

## 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: 02\_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

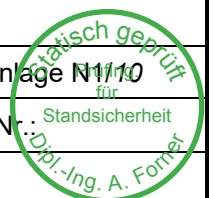
Steuerparameter = 0.50

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 N1	Schnitt 5L	Seite Anlage N1/10
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>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>1 104.42 0.00 0.00 -92.70 0.00 0.00 0.00</div> <div>Erddruckumlagerung in 2 Rechtecke (Tiefe Teilung = 104.35 m / eaho/eahu = 1.5)</div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 9.00 m</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 mue = 457.313 / 458.455 = 0.998</div> <div>Bettungslager Bh,d = 457.313 kN/m</div> <div>Erdwiderstand Eph,d = 458.455 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>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>1 105.00 0.00 1.00 -166.44 -144.17 -144.17 -89.22 6.900E+4 2.100E+7 -183.81 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>-1.00 105.00 -15.4 0.0 -170.25 0.00 0.00</div> <div>-0.90 105.00 -15.6 0.0 -170.25 0.00 0.00</div> <div>-0.90 105.00 -15.6 0.0 -170.25 0.00 0.00</div> <div>-0.80 105.00 -15.8 0.0 -170.25 0.00 0.00</div> <div>-0.70 105.00 -16.1 0.0 -170.25 0.00 0.00</div> <div>-0.60 105.00 -16.3 0.0 -170.25 0.00 0.00</div> <div>-0.50 105.00 -16.6 0.0 -170.25 0.00 0.00</div> <div>-0.40 105.00 -16.8 0.0 -170.25 0.00 0.00</div> <div>-0.30 105.00 -17.1 0.0 -170.25 0.00 0.00</div> <div>-0.20 105.00 -17.3 0.0 -170.25 0.00 0.00</div> <div>-0.10 105.00 -17.6 0.0 -170.25 0.00 0.00</div> <div>0.00 105.00 -17.8 0.0 -170.25 0.00 0.00</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 5\Linkes Ufer\01_BS 5_LF1.vrb</div> <div>eingelesen.</div> <div>Anker/Steife Tiefe Vorverformung</div> <div>[-] [m] [m]</div> <div>1 105.00 -0.0133</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>1 105.81 19.00/0.00 10.00/0.00 30.00/0.00 0.00/0.00 -0.667 0.667</div> <div>2 103.75 17.00/0.00 8.50/0.00 22.50/0.00 0.00/0.00 -0.667 0.667</div> <div>3 102.60 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>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/11
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 1111
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>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>97.149</td><td>54.587</td><td>58.538</td><td>5.00</td><td>5.00</td></tr><tr><td>97.149</td><td>93.368</td><td>58.538</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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	97.149	54.587	58.538	5.00	5.00	97.149	93.368	58.538	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																																										
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																																										
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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																																																																																																																																																																																																																																																																																																																																																										
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103.750	103.655	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																												
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103.461	103.406	19.618	19.618	5.00	5.00																																																																																																																																																																																																																																																																																																																																																												
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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																																																																																																																																																																																																																																																																																																																																																												
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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	97.149	54.587	58.538	5.00	5.00																																																																																																																																																																																																																																																																																																																																																												
97.149	93.368	58.538	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 N1 Schnitt 5L		Seite Anlage N1/12																																																																																																																																																																																																																																																																																																																																																													
Kapitel:		2 LF 2 (BS-T)		Archiv Nr.:																																																																																																																																																																																																																																																																																																																																																													
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																																																																																																													

statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Fomser



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 97.15 -188.87 -229.57 97.15 93.37 -229.57 -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 -170.3 105.00 -25.0 129.8 -22.6 104.75 -30.5 119.9 8.6 104.42 -37.6 106.7 46.0 104.42 -37.6 -4.5 46.0 104.35 -39.2 -6.5 45.6 104.15 -43.5 -12.2 43.7 103.75 -52.2 -23.6 36.5 103.65 -54.9 -26.4 34.2 103.56 -57.5 -29.1 31.5 103.53 -58.3 -29.9 30.7 103.46 -60.3 -31.9 28.5 103.41 -61.8 -33.5 26.7 103.31 -64.5 -36.2 23.4 103.28 -65.2 -37.0 22.3 103.16 -68.7 -40.6 17.5 103.15 -68.9 -40.8 17.2 103.08 -70.8 -42.7 14.4 103.06 -71.5 -43.4 13.4 103.03 -72.2 -44.1 12.3 102.91 -75.6 -47.7 6.6 102.77 -79.4 -51.5 -0.1 102.71 -81.3 -53.5 -3.7</div>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 11113
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>102.60</td><td>-84.2</td><td>-56.5</td><td>-9.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-85.7</td><td>-57.9</td><td>-12.4</td><td></td><td></td></tr><tr><td>102.48</td><td>-89.9</td><td>-65.1</td><td>-16.9</td><td></td><td></td></tr><tr><td>102.44</td><td>-90.6</td><td>-68.7</td><td>-19.5</td><td></td><td></td></tr><tr><td>102.26</td><td>-93.5</td><td>-83.7</td><td>-32.9</td><td></td><td></td></tr><tr><td>102.18</td><td>-94.5</td><td>-89.8</td><td>-40.1</td><td></td><td></td></tr><tr><td>102.13</td><td>-95.0</td><td>-93.3</td><td>-44.6</td><td></td><td></td></tr><tr><td>101.88</td><td>-96.3</td><td>-106.7</td><td>-69.5</td><td></td><td></td></tr><tr><td>101.84</td><td>-96.4</td><td>-108.4</td><td>-74.4</td><td></td><td></td></tr><tr><td>101.79</td><td>-96.3</td><td>-109.8</td><td>-79.3</td><td></td><td></td></tr><tr><td>101.32</td><td>-92.3</td><td>-108.8</td><td>-131.8</td><td></td><td></td></tr><tr><td>101.11</td><td>-88.3</td><td>-100.0</td><td>-153.7</td><td></td><td></td></tr><tr><td>100.85</td><td>-81.3</td><td>-82.7</td><td>-177.7</td><td></td><td></td></tr><tr><td>100.14</td><td>-51.8</td><td>-8.2</td><td>-212.0</td><td></td><td></td></tr><tr><td>100.09</td><td>-49.1</td><td>-1.5</td><td>-212.2</td><td></td><td></td></tr><tr><td>99.28</td><td>-12.0</td><td>87.6</td><td>-172.9</td><td></td><td></td></tr><tr><td>99.14</td><td>-8.1</td><td>96.2</td><td>-159.3</td><td></td><td></td></tr><tr><td>98.11</td><td>-4.2</td><td>94.3</td><td>-52.1</td><td></td><td></td></tr><tr><td>97.15</td><td>-13.4</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>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>-1.1</td><td>-1.8</td><td>-0.1</td><td></td><td></td></tr><tr><td>105.81</td><td>-6.4</td><td>-10.0</td><td>-1.7</td><td></td><td></td></tr><tr><td>105.50</td><td>-12.3</td><td>-19.1</td><td>-6.2</td><td></td><td></td></tr><tr><td>105.15</td><td>-18.9</td><td>-30.0</td><td>-14.8</td><td></td><td></td></tr><tr><td>105.00</td><td>-21.8</td><td>-35.1</td><td>-19.7</td><td>-144.2</td><td></td></tr><tr><td>105.00</td><td>-21.8</td><td>109.1</td><td>-19.7</td><td></td><td></td></tr><tr><td>104.75</td><td>-26.5</td><td>100.5</td><td>6.5</td><td></td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>89.1</td><td>37.8</td><td></td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>-3.6</td><td>37.8</td><td></td><td></td></tr><tr><td>104.35</td><td>-34.1</td><td>-5.3</td><td>37.5</td><td></td><td></td></tr><tr><td>104.15</td><td>-37.8</td><td>-10.2</td><td>35.9</td><td></td><td></td></tr><tr><td>103.75</td><td>-45.4</td><td>-20.1</td><td>29.9</td><td></td><td></td></tr><tr><td>103.65</td><td>-47.7</td><td>-22.4</td><td>27.9</td><td></td><td></td></tr><tr><td>103.56</td><td>-50.0</td><td>-24.8</td><td>25.6</td><td></td><td></td></tr><tr><td>103.53</td><td>-50.7</td><td>-25.5</td><td>24.9</td><td></td><td></td></tr><tr><td>103.46</td><td>-52.4</td><td>-27.2</td><td>23.0</td><td></td><td></td></tr><tr><td>103.41</td><td>-53.7</td><td>-28.5</td><td>21.5</td><td></td><td></td></tr><tr><td>103.31</td><td>-56.1</td><td>-30.9</td><td>18.6</td><td></td><td></td></tr><tr><td>103.28</td><td>-56.7</td><td>-31.6</td><td>17.8</td><td></td><td></td></tr><tr><td>103.16</td><td>-59.7</td><td>-34.7</td><td>13.7</td><td></td><td></td></tr><tr><td>103.15</td><td>-59.9</td><td>-34.9</td><td>13.4</td><td></td><td></td></tr><tr><td>103.08</td><td>-61.5</td><td>-36.5</td><td>11.0</td><td></td><td></td></tr><tr><td>103.06</td><td>-62.1</td><td>-37.1</td><td>10.1</td><td></td><td></td></tr><tr><td>103.03</td><td>-62.7</td><td>-37.7</td><td>9.2</td><td></td><td></td></tr><tr><td>102.91</td><td>-65.7</td><td>-40.8</td><td>4.3</td><td></td><td></td></tr><tr><td>102.77</td><td>-69.0</td><td>-44.1</td><td>-1.4</td><td></td><td></td></tr><tr><td>102.71</td><td>-70.7</td><td>-45.8</td><td>-4.5</td><td></td><td></td></tr><tr><td>102.60</td><td>-73.2</td><td>-48.4</td><td>-9.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-74.6</td><td>-49.6</td><td>-11.9</td><td></td><td></td></tr><tr><td>102.48</td><td>-78.2</td><td>-55.8</td><td>-15.8</td><td></td><td></td></tr><tr><td>102.44</td><td>-78.9</td><td>-59.0</td><td>-18.0</td><td></td><td></td></tr><tr><td>102.26</td><td>-81.4</td><td>-72.0</td><td>-29.6</td><td></td><td></td></tr><tr><td>102.18</td><td>-82.2</td><td>-77.3</td><td>-35.7</td><td></td><td></td></tr><tr><td>102.13</td><td>-82.7</td><td>-80.3</td><td>-39.6</td><td></td><td></td></tr><tr><td>101.88</td><td>-83.8</td><td>-92.0</td><td>-61.1</td><td></td><td></td></tr><tr><td>101.84</td><td>-83.9</td><td>-93.5</td><td>-65.3</td><td></td><td></td></tr><tr><td>101.79</td><td>-83.8</td><td>-94.7</td><td>-69.6</td><td></td><td></td></tr><tr><td>101.32</td><td>-80.4</td><td>-93.9</td><td>-114.8</td><td></td><td></td></tr><tr><td>101.11</td><td>-76.9</td><td>-86.2</td><td>-133.7</td><td></td><td></td></tr><tr><td>100.85</td><td>-70.9</td><td>-71.2</td><td>-154.4</td><td></td><td></td></tr><tr><td>100.14</td><td>-45.3</td><td>-6.8</td><td>-183.8</td><td></td><td></td></tr><tr><td>100.09</td><td>-43.0</td><td>-1.1</td><td>-184.0</td><td></td><td></td></tr><tr><td>99.28</td><td>-10.9</td><td>76.0</td><td>-149.8</td><td></td><td></td></tr><tr><td>99.14</td><td>-7.5</td><td>83.4</td><td>-138.1</td><td></td><td></td></tr><tr><td>98.11</td><td>-4.1</td><td>81.7</td><td>-45.1</td><td></td><td></td></tr><tr><td>97.15</td><td>-12.2</td><td>0.0</td><td>0.0</td><td></td><td></td></tr></table>						102.60	-84.2	-56.5	-9.5			102.55	-85.7	-57.9	-12.4			102.48	-89.9	-65.1	-16.9			102.44	-90.6	-68.7	-19.5			102.26	-93.5	-83.7	-32.9			102.18	-94.5	-89.8	-40.1			102.13	-95.0	-93.3	-44.6			101.88	-96.3	-106.7	-69.5			101.84	-96.4	-108.4	-74.4			101.79	-96.3	-109.8	-79.3			101.32	-92.3	-108.8	-131.8			101.11	-88.3	-100.0	-153.7			100.85	-81.3	-82.7	-177.7			100.14	-51.8	-8.2	-212.0			100.09	-49.1	-1.5	-212.2			99.28	-12.0	87.6	-172.9			99.14	-8.1	96.2	-159.3			98.11	-4.2	94.3	-52.1			97.15	-13.4	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	-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	-144.2		105.00	-21.8	109.1	-19.7			104.75	-26.5	100.5	6.5			104.42	-32.7	89.1	37.8			104.42	-32.7	-3.6	37.8			104.35	-34.1	-5.3	37.5			104.15	-37.8	-10.2	35.9			103.75	-45.4	-20.1	29.9			103.65	-47.7	-22.4	27.9			103.56	-50.0	-24.8	25.6			103.53	-50.7	-25.5	24.9			103.46	-52.4	-27.2	23.0			103.41	-53.7	-28.5	21.5			103.31	-56.1	-30.9	18.6			103.28	-56.7	-31.6	17.8			103.16	-59.7	-34.7	13.7			103.15	-59.9	-34.9	13.4			103.08	-61.5	-36.5	11.0			103.06	-62.1	-37.1	10.1			103.03	-62.7	-37.7	9.2			102.91	-65.7	-40.8	4.3			102.77	-69.0	-44.1	-1.4			102.71	-70.7	-45.8	-4.5			102.60	-73.2	-48.4	-9.5			102.55	-74.6	-49.6	-11.9			102.48	-78.2	-55.8	-15.8			102.44	-78.9	-59.0	-18.0			102.26	-81.4	-72.0	-29.6			102.18	-82.2	-77.3	-35.7			102.13	-82.7	-80.3	-39.6			101.88	-83.8	-92.0	-61.1			101.84	-83.9	-93.5	-65.3			101.79	-83.8	-94.7	-69.6			101.32	-80.4	-93.9	-114.8			101.11	-76.9	-86.2	-133.7			100.85	-70.9	-71.2	-154.4			100.14	-45.3	-6.8	-183.8			100.09	-43.0	-1.1	-184.0			99.28	-10.9	76.0	-149.8			99.14	-7.5	83.4	-138.1			98.11	-4.1	81.7	-45.1			97.15	-12.2	0.0	0.0		
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103.08	-61.5	-36.5	11.0																																																																																																																																																																																																																																																																																																																																																																																																																										
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102.77	-69.0	-44.1	-1.4																																																																																																																																																																																																																																																																																																																																																																																																																										
102.71	-70.7	-45.8	-4.5																																																																																																																																																																																																																																																																																																																																																																																																																										
102.60	-73.2	-48.4	-9.5																																																																																																																																																																																																																																																																																																																																																																																																																										
102.55	-74.6	-49.6	-11.9																																																																																																																																																																																																																																																																																																																																																																																																																										
102.48	-78.2	-55.8	-15.8																																																																																																																																																																																																																																																																																																																																																																																																																										
102.44	-78.9	-59.0	-18.0																																																																																																																																																																																																																																																																																																																																																																																																																										
102.26	-81.4	-72.0	-29.6																																																																																																																																																																																																																																																																																																																																																																																																																										
102.18	-82.2	-77.3	-35.7																																																																																																																																																																																																																																																																																																																																																																																																																										
102.13	-82.7	-80.3	-39.6																																																																																																																																																																																																																																																																																																																																																																																																																										
101.88	-83.8	-92.0	-61.1																																																																																																																																																																																																																																																																																																																																																																																																																										
101.84	-83.9	-93.5	-65.3																																																																																																																																																																																																																																																																																																																																																																																																																										
101.79	-83.8	-94.7	-69.6																																																																																																																																																																																																																																																																																																																																																																																																																										
101.32	-80.4	-93.9	-114.8																																																																																																																																																																																																																																																																																																																																																																																																																										
101.11	-76.9	-86.2	-133.7																																																																																																																																																																																																																																																																																																																																																																																																																										
100.85	-70.9	-71.2	-154.4																																																																																																																																																																																																																																																																																																																																																																																																																										
100.14	-45.3	-6.8	-183.8																																																																																																																																																																																																																																																																																																																																																																																																																										
100.09	-43.0	-1.1	-184.0																																																																																																																																																																																																																																																																																																																																																																																																																										
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<div><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><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>106.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>106.09</td><td>-1.1</td><td>-1.8</td><td>-0.1</td><td></td><td></td></tr><tr><td>105.81</td><td>-6.4</td><td>-10.0</td><td>-1.7</td><td></td><td></td></tr><tr><td>105.50</td><td>-12.3</td><td>-19.1</td><td>-6.2</td><td></td><td></td></tr><tr><td>105.15</td><td>-18.9</td><td>-30.0</td><td>-14.8</td><td></td><td></td></tr><tr><td>105.00</td><td>-21.8</td><td>-35.1</td><td>-19.7</td><td>-144.2</td><td></td></tr><tr><td>105.00</td><td>-21.8</td><td>109.1</td><td>-19.7</td><td></td><td></td></tr><tr><td>104.75</td><td>-26.5</td><td>100.5</td><td>6.5</td><td></td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>89.1</td><td>37.8</td><td></td><td></td></tr><tr><td>104.42</td><td>-32.7</td><td>-3.6</td><td>37.8</td><td></td><td></td></tr><tr><td>104.35</td><td>-34.1</td><td>-5.3</td><td>37.5</td><td></td><td></td></tr><tr><td>104.15</td><td>-37.8</td><td>-10.2</td><td>35.9</td><td></td><td></td></tr><tr><td>103.75</td><td>-45.4</td><td>-20.1</td><td>29.9</td><td></td><td></td></tr><tr><td>103.65</td><td>-47.7</td><td>-22.4</td><td>27.9</td><td></td><td></td></tr><tr><td>103.56</td><td>-50.0</td><td>-24.8</td><td>25.6</td><td></td><td></td></tr><tr><td>103.53</td><td>-50.7</td><td>-25.5</td><td>24.9</td><td></td><td></td></tr><tr><td>103.46</td><td>-52.4</td><td>-27.2</td><td>23.0</td><td></td><td></td></tr><tr><td>103.41</td><td>-53.7</td><td>-28.5</td><td>21.5</td><td></td><td></td></tr><tr><td>103.31</td><td>-56.1</td><td>-30.9</td><td>18.6</td><td></td><td></td></tr><tr><td>103.28</td><td>-56.7</td><td>-31.6</td><td>17.8</td><td></td><td></td></tr><tr><td>103.16</td><td>-59.7</td><td>-34.7</td><td>13.7</td><td></td><td></td></tr><tr><td>103.15</td><td>-59.9</td><td>-34.9</td><td>13.4</td><td></td><td></td></tr><tr><td>103.08</td><td>-61.5</td><td>-36.5</td><td>11.0</td><td></td><td></td></tr><tr><td>103.06</td><td>-62.1</td><td>-37.1</td><td>10.1</td><td></td><td></td></tr><tr><td>103.03</td><td>-62.7</td><td>-37.7</td><td>9.2</td><td></td><td></td></tr><tr><td>102.91</td><td>-65.7</td><td>-40.8</td><td>4.3</td><td></td><td></td></tr><tr><td>102.77</td><td>-69.0</td><td>-44.1</td><td>-1.4</td><td></td><td></td></tr><tr><td>102.71</td><td>-70.7</td><td>-45.8</td><td>-4.5</td><td></td><td></td></tr><tr><td>102.60</td><td>-73.2</td><td>-48.4</td><td>-9.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-74.6</td><td>-49.6</td><td>-11.9</td><td></td><td></td></tr><tr><td>102.48</td><td>-78.2</td><td>-55.8</td><td>-15.8</td><td></td><td></td></tr><tr><td>102.44</td><td>-78.9</td><td>-59.0</td><td>-18.0</td><td></td><td></td></tr><tr><td>102.26</td><td>-81.4</td><td>-72.0</td><td>-29.6</td><td></td><td></td></tr><tr><td>102.18</td><td>-82.2</td><td>-77.3</td><td>-35.7</td><td></td><td></td></tr><tr><td>102.13</td><td>-82.7</td><td>-80.3</td><td>-39.6</td><td></td><td></td></tr><tr><td>101.88</td><td>-83.8</td><td>-92.0</td><td>-61.1</td><td></td><td></td></tr><tr><td>101.84</td><td>-83.9</td><td>-93.5</td><td>-65.3</td><td></td><td></td></tr><tr><td>101.79</td><td>-83.8</td><td>-94.7</td><td>-69.6</td><td></td><td></td></tr><tr><td>101.32</td><td>-80.4</td><td>-93.9</td><td>-114.8</td><td></td><td></td></tr><tr><td>101.11</td><td>-76.9</td><td>-86.2</td><td>-133.7</td><td></td><td></td></tr><tr><td>100.85</td><td>-70.9</td><td>-71.2</td><td>-154.4</td><td></td><td></td></tr><tr><td>100.14</td><td>-45.3</td><td>-6.8</td><td>-183.8</td><td></td><td></td></tr><tr><td>100.09</td><td>-43.0</td><td>-1.1</td><td>-184.0</td><td></td><td></td></tr><tr><td>99.28</td><td>-10.9</td><td>76.0</td><td>-149.8</td><td></td><td></td></tr><tr><td>99.14</td><td>-7.5</td><td>83.4</td><td>-138.1</td><td></td><td></td></tr><tr><td>98.11</td><td>-4.1</td><td>81.7</td><td>-45.1</td><td></td><td></td></tr><tr><td>97.15</td><td>-12.2</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>106.15</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>105.81</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>105.15</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>-76.3</td><td></td></tr><tr><td>104.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>104.42</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>104.15</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.75</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.65</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.56</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.53</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.46</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.41</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>103.31</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]		106.15	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	-144.2		105.00	-21.8	109.1	-19.7			104.75	-26.5	100.5	6.5			104.42	-32.7	89.1	37.8			104.42	-32.7	-3.6	37.8			104.35	-34.1	-5.3	37.5			104.15	-37.8	-10.2	35.9			103.75	-45.4	-20.1	29.9			103.65	-47.7	-22.4	27.9			103.56	-50.0	-24.8	25.6			103.53	-50.7	-25.5	24.9			103.46	-52.4	-27.2	23.0			103.41	-53.7	-28.5	21.5			103.31	-56.1	-30.9	18.6			103.28	-56.7	-31.6	17.8			103.16	-59.7	-34.7	13.7			103.15	-59.9	-34.9	13.4			103.08	-61.5	-36.5	11.0			103.06	-62.1	-37.1	10.1			103.03	-62.7	-37.7	9.2			102.91	-65.7	-40.8	4.3			102.77	-69.0	-44.1	-1.4			102.71	-70.7	-45.8	-4.5			102.60	-73.2	-48.4	-9.5			102.55	-74.6	-49.6	-11.9			102.48	-78.2	-55.8	-15.8			102.44	-78.9	-59.0	-18.0			102.26	-81.4	-72.0	-29.6			102.18	-82.2	-77.3	-35.7			102.13	-82.7	-80.3	-39.6			101.88	-83.8	-92.0	-61.1			101.84	-83.9	-93.5	-65.3			101.79	-83.8	-94.7	-69.6			101.32	-80.4	-93.9	-114.8			101.11	-76.9	-86.2	-133.7			100.85	-70.9	-71.2	-154.4			100.14	-45.3	-6.8	-183.8			100.09	-43.0	-1.1	-184.0			99.28	-10.9	76.0	-149.8			99.14	-7.5	83.4	-138.1			98.11	-4.1	81.7	-45.1			97.15	-12.2	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	-76.3		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			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>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-17.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-15.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-15.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.4</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	103.15	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	97.15	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.15	-18.2	-	-	-	106.09	-18.1	-	-	-	106.09	-18.1	-	-	-	106.04	-18.0	-	-	-	105.86	-17.5	-	-	-	105.81	-17.4	-	-	-	105.81	-17.4	-	-	-	105.76	-17.3	-	-	-	105.55	-16.8	-	-	-	105.50	-16.6	-	-	-	105.50	-16.6	-	-	-	105.45	-16.5	-	-	-	105.20	-15.9	-	-	-	105.15	-15.8	-	-	-	105.15	-15.8	-	-	-	105.10	-15.7	-	-	-	105.05	-15.6	-	-	-	105.00	-15.4	-	-	-	105.00	-15.4	-	-	-	104.95	-15.3	-	-	-	104.80	-15.0	-	-	-	104.75	-14.8	-	-	-	104.75	-14.8	-	-	-	104.70	-14.7	-	-	-	104.47	-14.2	-	-	-	104.42	-14.0	-	-	-	104.42	-14.0	-	-	-	104.35	-13.9	-	-	-	104.35	-13.9	-	-	-	104.30	-13.8	-	-	-	104.20	-13.5	-	-	-	104.15	-13.4	-	-	-	104.15	-13.4	-	-	-	104.10	-13.3	-	-	-	103.80	-12.5	-	-	-	103.75	-12.4	-	-	-	103.75	-12.4	-	-	-	103.75	-12.4	-	-	-
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r><td>101.37</td><td>-6.6</td><td>12.32</td><td>81.23</td><td>81.23</td></tr></table>							103.70	-12.3	-	-	-	103.65	-12.2	-	-	-	103.65	-12.2	-	-	-	103.65	-12.2	-	-	-	103.61	-12.1	-	-	-	103.56	-12.0	-	-	-	103.56	-12.0	-	-	-	103.53	-11.9	-	-	-	103.53	-11.9	-	-	-	103.46	-11.7	-	-	-	103.46	-11.7	-	-	-	103.41	-11.6	-	-	-	103.41	-11.6	-	-	-	103.36	-11.5	-	-	-	103.36	-11.5	-	-	-	103.31	-11.3	-	-	-	103.31	-11.3	-	-	-	103.28	-11.3	-	-	-	103.28	-11.3	-	-	-	103.22	-11.1	-	-	-	103.22	-11.1	-	-	-	103.16	-11.0	-	-	-	103.16	-11.0	-	-	-	103.15	-10.9	-	-	-	103.15	-10.9	-	-	-	103.08	-10.8	-	-	-	103.08	-10.8	-	-	-	103.06	-10.7	-	-	-	103.06	-10.7	-	-	-	103.03	-10.7	-	-	-	103.03	-10.7	-	-	-	102.97	-10.5	-	-	-	102.97	-10.5	-	-	-	102.91	-10.3	-	-	-	102.91	-10.3	-	-	-	102.86	-10.2	-	-	-	102.82	-10.1	-	-	-	102.77	-10.0	-	-	-	102.77	-10.0	-	-	-	102.71	-9.8	-	-	-	102.71	-9.8	-	-	-	102.65	-9.7	-	-	-	102.65	-9.7	-	-	-	102.60	-9.6	-	-	-	102.60	-9.6	-	-	-	102.55	-9.5	0.00	0.00	0.00	102.55	-9.5	0.00	0.00	0.00	102.48	-9.3	0.00	0.00	5.02	102.48	-9.3	0.54	5.02	5.02	102.44	-9.2	0.54	4.97	7.71	102.44	-9.2	0.84	7.71	7.71	102.39	-9.1	0.84	7.62	10.75	102.31	-8.9	1.90	16.84	16.84	102.26	-8.7	1.90	16.63	19.88	102.26	-8.7	2.27	19.88	19.88	102.22	-8.6	2.27	19.65	22.72	102.22	-8.6	2.63	22.72	22.72	102.18	-8.5	2.63	22.45	25.55	102.18	-8.5	2.99	25.55	25.55	102.13	-8.4	2.99	25.19	28.97	102.13	-8.4	3.44	28.98	28.97	102.08	-8.3	3.44	28.56	32.40	101.93	-7.9	5.37	42.66	42.66	101.88	-7.8	5.37	42.01	46.08	101.88	-7.8	5.90	46.09	46.08	101.84	-7.7	5.90	45.43	49.22	101.84	-7.7	6.39	49.22	49.22	101.79	-7.6	6.39	48.52	52.36	101.79	-7.6	6.89	52.36	52.36	101.74	-7.5	6.89	51.49	55.97	101.37	-6.6	12.32	81.23	81.23
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102.60	-9.6	-	-	-																																																																																																																																																																																																																																																																																																																																																																					
102.55	-9.5	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																					
102.55	-9.5	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																																					
102.48	-9.3	0.00	0.00	5.02																																																																																																																																																																																																																																																																																																																																																																					
102.48	-9.3	0.54	5.02	5.02																																																																																																																																																																																																																																																																																																																																																																					
102.44	-9.2	0.54	4.97	7.71																																																																																																																																																																																																																																																																																																																																																																					
102.44	-9.2	0.84	7.71	7.71																																																																																																																																																																																																																																																																																																																																																																					
102.39	-9.1	0.84	7.62	10.75																																																																																																																																																																																																																																																																																																																																																																					
102.31	-8.9	1.90	16.84	16.84																																																																																																																																																																																																																																																																																																																																																																					
102.26	-8.7	1.90	16.63	19.88																																																																																																																																																																																																																																																																																																																																																																					
102.26	-8.7	2.27	19.88	19.88																																																																																																																																																																																																																																																																																																																																																																					
102.22	-8.6	2.27	19.65	22.72																																																																																																																																																																																																																																																																																																																																																																					
102.22	-8.6	2.63	22.72	22.72																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.5	2.63	22.45	25.55																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.5	2.99	25.55	25.55																																																																																																																																																																																																																																																																																																																																																																					
102.13	-8.4	2.99	25.19	28.97																																																																																																																																																																																																																																																																																																																																																																					
102.13	-8.4	3.44	28.98	28.97																																																																																																																																																																																																																																																																																																																																																																					
102.08	-8.3	3.44	28.56	32.40																																																																																																																																																																																																																																																																																																																																																																					
101.93	-7.9	5.37	42.66	42.66																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.8	5.37	42.01	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.8	5.90	46.09	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.7	5.90	45.43	49.22																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.7	6.39	49.22	49.22																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.6	6.39	48.52	52.36																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.6	6.89	52.36	52.36																																																																																																																																																																																																																																																																																																																																																																					
101.74	-7.5	6.89	51.49	55.97																																																																																																																																																																																																																																																																																																																																																																					
101.37	-6.6	12.32	81.23	81.23																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage N1    Schnitt 5L			Seite Anlage N1/17																																																																																																																																																																																																																																																																																																																																																																				
Kapitel:		2                    LF 2 (BS-T)			Archiv Nr.: 1117																																																																																																																																																																																																																																																																																																																																																																				
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>101.32</td><td>-6.5</td><td>12.32</td><td>79.72</td><td>84.84</td></tr><tr><td>101.32</td><td>-6.5</td><td>13.11</td><td>84.84</td><td>84.84</td></tr><tr><td>101.27</td><td>-6.3</td><td>13.11</td><td>83.24</td><td>88.45</td></tr><tr><td>101.16</td><td>-6.1</td><td>15.67</td><td>95.67</td><td>95.66</td></tr><tr><td>101.11</td><td>-6.0</td><td>15.67</td><td>93.78</td><td>99.27</td></tr><tr><td>101.11</td><td>-6.0</td><td>16.59</td><td>99.28</td><td>99.27</td></tr><tr><td>101.06</td><td>-5.9</td><td>16.59</td><td>97.29</td><td>102.88</td></tr><tr><td>100.90</td><td>-5.5</td><td>20.64</td><td>113.72</td><td>113.71</td></tr><tr><td>100.85</td><td>-5.4</td><td>20.64</td><td>111.29</td><td>117.32</td></tr><tr><td>100.85</td><td>-5.4</td><td>21.76</td><td>117.32</td><td>117.32</td></tr><tr><td>100.80</td><td>-5.3</td><td>21.76</td><td>114.87</td><td>120.81</td></tr><tr><td>100.19</td><td>-4.0</td><td>40.90</td><td>162.73</td><td>162.72</td></tr><tr><td>100.14</td><td>-3.9</td><td>40.90</td><td>158.51</td><td>166.21</td></tr><tr><td>100.14</td><td>-3.9</td><td>42.89</td><td>166.22</td><td>166.21</td></tr><tr><td>100.09</td><td>-3.8</td><td>42.89</td><td>161.83</td><td>169.70</td></tr><tr><td>100.09</td><td>-3.8</td><td>44.98</td><td>169.72</td><td>169.70</td></tr><tr><td>100.04</td><td>-3.7</td><td>44.98</td><td>165.14</td><td>173.19</td></tr><tr><td>99.33</td><td>-2.3</td><td>50.00</td><td>116.48</td><td>222.09</td></tr><tr><td>99.28</td><td>-2.2</td><td>50.00</td><td>111.96</td><td>225.58</td></tr><tr><td>99.28</td><td>-2.2</td><td>50.00</td><td>111.96</td><td>225.58</td></tr><tr><td>99.23</td><td>-2.2</td><td>50.00</td><td>107.61</td><td>228.97</td></tr><tr><td>99.19</td><td>-2.1</td><td>50.00</td><td>103.28</td><td>232.36</td></tr><tr><td>99.14</td><td>-2.0</td><td>50.00</td><td>98.98</td><td>235.74</td></tr><tr><td>99.14</td><td>-2.0</td><td>50.00</td><td>98.98</td><td>235.74</td></tr><tr><td>99.09</td><td>-1.9</td><td>50.00</td><td>94.71</td><td>239.13</td></tr><tr><td>98.16</td><td>-0.4</td><td>50.00</td><td>17.78</td><td>303.52</td></tr><tr><td>98.11</td><td>-0.3</td><td>50.00</td><td>13.88</td><td>306.91</td></tr><tr><td>98.11</td><td>-0.3</td><td>50.00</td><td>13.88</td><td>306.91</td></tr><tr><td>98.06</td><td>-0.2</td><td>50.00</td><td>9.89</td><td>310.39</td></tr><tr><td>97.20</td><td>1.1</td><td>50.00</td><td>-57.18</td><td>369.56</td></tr><tr><td>97.15</td><td>1.2</td><td>50.00</td><td>-61.11</td><td>373.04</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08935603 Theoretischer Fußpunkt = 97.149 m</p> <p>Einbindetiefe tg = 5.40 m Profillänge = 9.00 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k G,k = 170.31 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 69.52 kN/m (Eah,k = 383.36 kN/m) Bv,k = 157.26 Summe V,k = 82.56 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 98.03 bis 94.51 m) ==&gt; 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 97.15 55.00 s3: Flussskies, -sand Mantelfläche bis 97.15 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 297.00 / 1.40 = 212.14 kN/m R,d = Rb,d + R,s1,d = 1077.19 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 204.37 - 0.00 + 79.95 + 0.00 = 284.31 kN/m ==&gt; µ = V,d / R,d = 284.31 / 1077.19 = 0.26</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			101.32	-6.5	12.32	79.72	84.84	101.32	-6.5	13.11	84.84	84.84	101.27	-6.3	13.11	83.24	88.45	101.16	-6.1	15.67	95.67	95.66	101.11	-6.0	15.67	93.78	99.27	101.11	-6.0	16.59	99.28	99.27	101.06	-5.9	16.59	97.29	102.88	100.90	-5.5	20.64	113.72	113.71	100.85	-5.4	20.64	111.29	117.32	100.85	-5.4	21.76	117.32	117.32	100.80	-5.3	21.76	114.87	120.81	100.19	-4.0	40.90	162.73	162.72	100.14	-3.9	40.90	158.51	166.21	100.14	-3.9	42.89	166.22	166.21	100.09	-3.8	42.89	161.83	169.70	100.09	-3.8	44.98	169.72	169.70	100.04	-3.7	44.98	165.14	173.19	99.33	-2.3	50.00	116.48	222.09	99.28	-2.2	50.00	111.96	225.58	99.28	-2.2	50.00	111.96	225.58	99.23	-2.2	50.00	107.61	228.97	99.19	-2.1	50.00	103.28	232.36	99.14	-2.0	50.00	98.98	235.74	99.14	-2.0	50.00	98.98	235.74	99.09	-1.9	50.00	94.71	239.13	98.16	-0.4	50.00	17.78	303.52	98.11	-0.3	50.00	13.88	306.91	98.11	-0.3	50.00	13.88	306.91	98.06	-0.2	50.00	9.89	310.39	97.20	1.1	50.00	-57.18	369.56	97.15	1.2	50.00	-61.11	373.04
101.32	-6.5	12.32	79.72	84.84																																																																																																																																																									
101.32	-6.5	13.11	84.84	84.84																																																																																																																																																									
101.27	-6.3	13.11	83.24	88.45																																																																																																																																																									
101.16	-6.1	15.67	95.67	95.66																																																																																																																																																									
101.11	-6.0	15.67	93.78	99.27																																																																																																																																																									
101.11	-6.0	16.59	99.28	99.27																																																																																																																																																									
101.06	-5.9	16.59	97.29	102.88																																																																																																																																																									
100.90	-5.5	20.64	113.72	113.71																																																																																																																																																									
100.85	-5.4	20.64	111.29	117.32																																																																																																																																																									
100.85	-5.4	21.76	117.32	117.32																																																																																																																																																									
100.80	-5.3	21.76	114.87	120.81																																																																																																																																																									
100.19	-4.0	40.90	162.73	162.72																																																																																																																																																									
100.14	-3.9	40.90	158.51	166.21																																																																																																																																																									
100.14	-3.9	42.89	166.22	166.21																																																																																																																																																									
100.09	-3.8	42.89	161.83	169.70																																																																																																																																																									
100.09	-3.8	44.98	169.72	169.70																																																																																																																																																									
100.04	-3.7	44.98	165.14	173.19																																																																																																																																																									
99.33	-2.3	50.00	116.48	222.09																																																																																																																																																									
99.28	-2.2	50.00	111.96	225.58																																																																																																																																																									
99.28	-2.2	50.00	111.96	225.58																																																																																																																																																									
99.23	-2.2	50.00	107.61	228.97																																																																																																																																																									
99.19	-2.1	50.00	103.28	232.36																																																																																																																																																									
99.14	-2.0	50.00	98.98	235.74																																																																																																																																																									
99.14	-2.0	50.00	98.98	235.74																																																																																																																																																									
99.09	-1.9	50.00	94.71	239.13																																																																																																																																																									
98.16	-0.4	50.00	17.78	303.52																																																																																																																																																									
98.11	-0.3	50.00	13.88	306.91																																																																																																																																																									
98.11	-0.3	50.00	13.88	306.91																																																																																																																																																									
98.06	-0.2	50.00	9.89	310.39																																																																																																																																																									
97.20	1.1	50.00	-57.18	369.56																																																																																																																																																									
97.15	1.2	50.00	-61.11	373.04																																																																																																																																																									
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/18																																																																																																																																																											
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 11118																																																																																																																																																											
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

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Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 5  
Datei: 03\_BS 5\_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 = 106.15 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-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
2	0.00	29.50	105.50	102.55	Wasserdruck

Schnitt:	Anlage N1	Schnitt 5L	Seite Anlage N1/19
Kapitel:	3	LF 3 (BS-T)	Archiv Nr. 1119
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	105.60	-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 automatisch und Fuß gebettet

Profillänge = 8.90 m

Bettungsmodule

von bis ks(oben) ks(unten)

[mNHN] [mNHN] [MN/m³] [MN/m³]

102.55 80.00 50.000 50.000

Ausnutzungsgrad mue = 412.362 / 419.517 = 0.983

Bettungslager Bh,d = 412.362 kN/m

Erdwiderstand Eph,d = 419.517 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	-216.48	-186.44	-186.44	-153.76	3.900E+7	2.100E+7	-237.71

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	-14.2	0.0	-222.10	0.00	0.00
-7.47	103.72	-14.2	0.0	-222.10	0.00	0.00
-7.47	103.72	-14.2	0.0	-222.10	0.00	0.00
-6.64	103.72	-14.2	0.0	-222.10	0.00	0.00
-5.81	103.72	-14.2	0.0	-222.10	0.00	0.00
-4.98	103.72	-14.2	0.0	-222.10	0.00	0.00
-4.15	103.72	-14.2	0.0	-222.10	0.00	0.00
-3.32	103.72	-14.2	0.0	-222.10	0.00	0.00
-2.49	103.72	-14.2	0.0	-222.10	0.00	0.00
-1.66	103.72	-14.2	0.0	-222.10	0.00	0.00
-0.83	103.72	-14.2	0.0	-222.10	0.00	0.00
0.00	103.72	-14.2	0.0	-222.10	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\02\_BS 5\_LF2.vrb

eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0123

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 N1	Schnitt 5L	Seite Anlage N1/20
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 &lt;&gt; 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>100.851 100.295 40.280 43.643 0.00 0.00</div> <div>100.295 100.143 43.643 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 97.249 54.587 58.126 0.00 0.00</div> <div>97.249 93.368 58.126 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 N1 Schnitt 5L		Seite Anlage N1/21
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 -72.19 100.85 100.30 -72.19 -95.83 100.30 100.14 -95.83 -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 97.25 -188.87 -225.32 97.25 93.37 -225.32 -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 -222.1 103.72 -77.1 80.7 -119.9 103.65 -78.9 77.7 -114.7 103.56 -81.9 72.2 -107.6 103.53 -82.9 70.2 -105.5 103.46 -85.2 65.4 -100.8 103.41 -87.1 61.4 -97.3 103.31 -90.8 53.0 -91.8 103.28 -91.9 50.3 -90.3 103.16 -97.1 37.8 -84.8 103.08 -100.3 29.8 -82.3 103.06 -101.4 26.9 -81.6 103.03 -102.5 23.9 -81.0 102.91 -108.4 8.4 -79.0 102.77 -115.2 -10.3 -79.1 102.71 -118.8 -20.4 -80.1</div>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/22
Kapitel: 3 LF 3 (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):																																																																																																																																																																																																																																																					
Auftraggeber: Stadtverwaltung Leipzig																																																																																																																																																																																																																																																							
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																					
<div><div><div>102.60 -124.5 -36.7 -83.1</div><div>102.55 -127.3 -42.9 -85.1</div><div>102.48 -131.5 -49.6 -88.5</div><div>102.44 -132.2 -53.0 -90.5</div><div>102.26 -135.1 -66.9 -101.1</div><div>102.18 -136.1 -72.6 -106.8</div><div>102.13 -136.6 -75.8 -110.5</div><div>101.88 -138.0 -87.8 -130.9</div><div>101.84 -138.0 -89.2 -134.9</div><div>101.79 -138.0 -90.4 -139.0</div><div>101.32 -134.0 -86.8 -181.7</div><div>101.11 -130.0 -76.9 -198.9</div><div>100.85 -123.1 -58.2 -216.7</div><div>100.30 -101.3 0.0 -233.9</div><div>100.14 -93.6 19.6 -232.4</div><div>99.28 -60.2 103.7 -173.5</div><div>99.14 -57.5 109.9 -157.7</div><div>98.11 -62.0 92.3 -44.5</div><div>97.25 -66.0 0.0 0.0</div></div><div><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>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>-186.4</td></tr><tr><td>103.72</td><td>-66.1</td><td>68.2</td><td>-100.5</td><td></td></tr><tr><td>103.65</td><td>-67.8</td><td>65.6</td><td>-96.1</td><td></td></tr><tr><td>103.56</td><td>-70.3</td><td>61.0</td><td>-90.1</td><td></td></tr><tr><td>103.53</td><td>-71.2</td><td>59.3</td><td>-88.3</td><td></td></tr><tr><td>103.46</td><td>-73.2</td><td>55.1</td><td>-84.3</td><td></td></tr><tr><td>103.41</td><td>-74.9</td><td>51.7</td><td>-81.4</td><td></td></tr><tr><td>103.31</td><td>-78.1</td><td>44.5</td><td>-76.7</td><td></td></tr><tr><td>103.28</td><td>-79.1</td><td>42.2</td><td>-75.5</td><td></td></tr><tr><td>103.16</td><td>-83.5</td><td>31.5</td><td>-71.0</td><td></td></tr><tr><td>103.08</td><td>-86.3</td><td>24.5</td><td>-68.9</td><td></td></tr><tr><td>103.06</td><td>-87.3</td><td>22.1</td><td>-68.3</td><td></td></tr><tr><td>103.03</td><td>-88.3</td><td>19.5</td><td>-67.8</td><td></td></tr><tr><td>102.91</td><td>-93.4</td><td>6.1</td><td>-66.2</td><td></td></tr><tr><td>102.77</td><td>-99.3</td><td>-10.0</td><td>-66.4</td><td></td></tr><tr><td>102.71</td><td>-102.4</td><td>-18.7</td><td>-67.4</td><td></td></tr><tr><td>102.60</td><td>-107.4</td><td>-32.7</td><td>-70.1</td><td></td></tr><tr><td>102.55</td><td>-109.9</td><td>-38.0</td><td>-71.9</td><td></td></tr><tr><td>102.48</td><td>-113.5</td><td>-43.9</td><td>-74.9</td><td></td></tr><tr><td>102.44</td><td>-114.2</td><td>-46.9</td><td>-76.6</td><td></td></tr><tr><td>102.26</td><td>-116.7</td><td>-59.0</td><td>-86.0</td><td></td></tr><tr><td>102.18</td><td>-117.5</td><td>-63.9</td><td>-91.0</td><td></td></tr><tr><td>102.13</td><td>-118.0</td><td>-66.6</td><td>-94.3</td><td></td></tr><tr><td>101.88</td><td>-119.1</td><td>-77.1</td><td>-112.2</td><td></td></tr><tr><td>101.84</td><td>-119.2</td><td>-78.3</td><td>-115.7</td><td></td></tr><tr><td>101.79</td><td>-119.2</td><td>-79.3</td><td>-119.3</td><td></td></tr><tr><td>101.32</td><td>-115.7</td><td>-76.2</td><td>-156.8</td><td></td></tr><tr><td>101.11</td><td>-112.2</td><td>-67.5</td><td>-171.9</td><td></td></tr><tr><td>100.85</td><td>-106.2</td><td>-51.2</td><td>-187.5</td><td></td></tr><tr><td>100.30</td><td>-87.3</td><td>-0.5</td><td>-202.8</td><td></td></tr><tr><td>100.14</td><td>-80.7</td><td>16.6</td><td>-201.6</td><td></td></tr><tr><td>99.28</td><td>-51.7</td><td>89.9</td><td>-150.7</td><td></td></tr><tr><td>99.14</td><td>-49.4</td><td>95.4</td><td>-137.0</td><td></td></tr><tr><td>98.11</td><td>-53.4</td><td>80.2</td><td>-38.7</td><td></td></tr><tr><td>97.25</td><td>-56.9</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]	106.15	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	-186.4	103.72	-66.1	68.2	-100.5		103.65	-67.8	65.6	-96.1		103.56	-70.3	61.0	-90.1		103.53	-71.2	59.3	-88.3		103.46	-73.2	55.1	-84.3		103.41	-74.9	51.7	-81.4		103.31	-78.1	44.5	-76.7		103.28	-79.1	42.2	-75.5		103.16	-83.5	31.5	-71.0		103.08	-86.3	24.5	-68.9		103.06	-87.3	22.1	-68.3		103.03	-88.3	19.5	-67.8		102.91	-93.4	6.1	-66.2		102.77	-99.3	-10.0	-66.4		102.71	-102.4	-18.7	-67.4		102.60	-107.4	-32.7	-70.1		102.55	-109.9	-38.0	-71.9		102.48	-113.5	-43.9	-74.9		102.44	-114.2	-46.9	-76.6		102.26	-116.7	-59.0	-86.0		102.18	-117.5	-63.9	-91.0		102.13	-118.0	-66.6	-94.3		101.88	-119.1	-77.1	-112.2		101.84	-119.2	-78.3	-115.7		101.79	-119.2	-79.3	-119.3		101.32	-115.7	-76.2	-156.8		101.11	-112.2	-67.5	-171.9		100.85	-106.2	-51.2	-187.5		100.30	-87.3	-0.5	-202.8		100.14	-80.7	16.6	-201.6		99.28	-51.7	89.9	-150.7		99.14	-49.4	95.4	-137.0		98.11	-53.4	80.2	-38.7		97.25	-56.9	0.0	0.0	
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																			
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<div>Schnittgrößen (g+w,k)</div> 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103.08	-86.3	24.5	-68.9																																																																																																																																																																																																																																																																																																																																																			
103.06	-87.3	22.1	-68.3																																																																																																																																																																																																																																																																																																																																																			
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102.55	-109.9	-38.0	-71.9																																																																																																																																																																																																																																																																																																																																																			
102.48	-113.5	-43.9	-74.9																																																																																																																																																																																																																																																																																																																																																			
102.44	-114.2	-46.9	-76.6																																																																																																																																																																																																																																																																																																																																																			
102.26	-116.7	-59.0	-86.0																																																																																																																																																																																																																																																																																																																																																			
102.18	-117.5	-63.9	-91.0																																																																																																																																																																																																																																																																																																																																																			
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<table><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>102.55</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>101.84</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>101.32</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>100.30</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><tr><td>98.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.25</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>106.15</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-18.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-18.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-17.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.37</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-13.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-12.4</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	101.84	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	100.30	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	97.25	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m²]	[kN/m²]	[kN/m²]	106.15	-19.3	-	-	-	106.09	-19.2	-	-	-	106.09	-19.2	-	-	-	106.04	-19.0	-	-	-	105.86	-18.5	-	-	-	105.81	-18.4	-	-	-	105.81	-18.4	-	-	-	105.76	-18.2	-	-	-	105.65	-17.9	-	-	-	105.60	-17.8	-	-	-	105.60	-17.8	-	-	-	105.55	-17.6	-	-	-	105.55	-17.6	-	-	-	105.50	-17.5	-	-	-	105.50	-17.5	-	-	-	105.45	-17.3	-	-	-	105.20	-16.6	-	-	-	105.15	-16.5	-	-	-	105.15	-16.5	-	-	-	105.10	-16.3	-	-	-	104.80	-15.5	-	-	-	104.75	-15.3	-	-	-	104.75	-15.3	-	-	-	104.70	-15.2	-	-	-	104.47	-14.5	-	-	-	104.42	-14.4	-	-	-	104.42	-14.4	-	-	-	104.37	-14.2	-	-	-	104.15	-13.6	-	-	-	104.10	-13.5	-	-	-	104.10	-13.5	-	-	-	104.05	-13.3	-	-	-	103.80	-12.6	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.72	-12.4	-	-	-	103.72	-12.4	-	-	-
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102.48	-9.0	0.00	0.00	5.02																																																																																																																																																																																																																																																																																																																																																																					
102.48	-9.0	0.56	5.02	5.02																																																																																																																																																																																																																																																																																																																																																																					
102.44	-8.9	0.56	4.97	7.71																																																																																																																																																																																																																																																																																																																																																																					
102.44	-8.9	0.86	7.71	7.71																																																																																																																																																																																																																																																																																																																																																																					
102.39	-8.8	0.86	7.61	10.75																																																																																																																																																																																																																																																																																																																																																																					
102.31	-8.6	1.96	16.84	16.84																																																																																																																																																																																																																																																																																																																																																																					
102.26	-8.5	1.96	16.61	19.88																																																																																																																																																																																																																																																																																																																																																																					
102.26	-8.5	2.35	19.88	19.88																																																																																																																																																																																																																																																																																																																																																																					
102.22	-8.4	2.35	19.63	22.72																																																																																																																																																																																																																																																																																																																																																																					
102.22	-8.4	2.72	22.72	22.72																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.3	2.72	22.43	25.55																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.3	3.10	25.55	25.55																																																																																																																																																																																																																																																																																																																																																																					
102.13	-8.1	3.10	25.16	28.97																																																																																																																																																																																																																																																																																																																																																																					
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102.08	-8.0	3.56	28.52	32.40																																																																																																																																																																																																																																																																																																																																																																					
101.93	-7.6	5.60	42.66	42.66																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.5	5.60	41.96	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.5	6.15	46.08	46.08																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.4	6.15	45.38	49.22																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.4	6.67	49.22	49.22																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.3	6.67	48.46	52.36																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.3	7.21	52.36	52.36																																																																																																																																																																																																																																																																																																																																																																					
101.74	-7.1	7.21	51.42	55.97																																																																																																																																																																																																																																																																																																																																																																					
101.37	-6.2	13.03	81.23	81.23																																																																																																																																																																																																																																																																																																																																																																					
101.32	-6.1	13.03	79.59	84.84																																																																																																																																																																																																																																																																																																																																																																					
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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																																																																																																																																																												
<table><tr><td>101.32</td><td>-6.1</td><td>13.89</td><td>84.84</td><td>84.84</td></tr><tr><td>101.27</td><td>-6.0</td><td>13.89</td><td>83.10</td><td>88.45</td></tr><tr><td>101.16</td><td>-5.7</td><td>16.68</td><td>95.66</td><td>95.66</td></tr><tr><td>101.11</td><td>-5.6</td><td>16.68</td><td>93.61</td><td>99.27</td></tr><tr><td>101.11</td><td>-5.6</td><td>17.69</td><td>99.27</td><td>99.27</td></tr><tr><td>101.06</td><td>-5.5</td><td>17.69</td><td>97.11</td><td>102.88</td></tr><tr><td>100.90</td><td>-5.1</td><td>22.17</td><td>113.71</td><td>113.71</td></tr><tr><td>100.85</td><td>-5.0</td><td>22.17</td><td>111.08</td><td>117.32</td></tr><tr><td>100.85</td><td>-5.0</td><td>23.42</td><td>117.32</td><td>117.32</td></tr><tr><td>100.80</td><td>-4.9</td><td>23.42</td><td>114.65</td><td>120.81</td></tr><tr><td>100.35</td><td>-3.9</td><td>38.96</td><td>152.24</td><td>152.24</td></tr><tr><td>100.30</td><td>-3.8</td><td>40.97</td><td>155.73</td><td>155.73</td></tr><tr><td>100.24</td><td>-3.7</td><td>40.97</td><td>151.45</td><td>159.22</td></tr><tr><td>100.19</td><td>-3.6</td><td>45.29</td><td>162.72</td><td>162.72</td></tr><tr><td>100.14</td><td>-3.5</td><td>45.29</td><td>158.06</td><td>166.21</td></tr><tr><td>100.14</td><td>-3.5</td><td>47.62</td><td>166.21</td><td>166.21</td></tr><tr><td>100.09</td><td>-3.4</td><td>47.62</td><td>161.35</td><td>169.70</td></tr><tr><td>99.33</td><td>-2.0</td><td>50.00</td><td>97.85</td><td>222.09</td></tr><tr><td>99.28</td><td>-1.9</td><td>50.00</td><td>93.38</td><td>225.58</td></tr><tr><td>99.28</td><td>-1.9</td><td>50.00</td><td>93.38</td><td>225.58</td></tr><tr><td>99.23</td><td>-1.8</td><td>50.00</td><td>89.07</td><td>228.97</td></tr><tr><td>99.19</td><td>-1.7</td><td>50.00</td><td>84.80</td><td>232.36</td></tr><tr><td>99.14</td><td>-1.6</td><td>50.00</td><td>80.55</td><td>235.74</td></tr><tr><td>99.14</td><td>-1.6</td><td>50.00</td><td>80.55</td><td>235.74</td></tr><tr><td>99.09</td><td>-1.5</td><td>50.00</td><td>76.33</td><td>239.13</td></tr><tr><td>98.16</td><td>0.0</td><td>50.00</td><td>0.17</td><td>303.52</td></tr><tr><td>98.11</td><td>0.1</td><td>50.00</td><td>-3.70</td><td>306.91</td></tr><tr><td>98.11</td><td>0.1</td><td>50.00</td><td>-3.70</td><td>306.91</td></tr><tr><td>98.06</td><td>0.2</td><td>50.00</td><td>-7.67</td><td>310.39</td></tr><tr><td>97.30</td><td>1.3</td><td>50.00</td><td>-66.65</td><td>362.65</td></tr><tr><td>97.25</td><td>1.4</td><td>50.00</td><td>-70.57</td><td>366.14</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08905558 Theoretischer Fußpunkt = 97.249 m</p> <p>Einbindetiefe tg = 5.30 m Profillänge = 8.90 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 168.41 kN/m G',k = 0.00 kN/m Pv,k = 20.00 kN/m Eav,k = 68.36 kN/m (Eah,k = 377.52 kN/m) Bv,k = 142.81 Summe V,k = 113.96 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 98.13 bis 94.61 m) ==&gt; 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 97.25 55.00 s3: Flussskies, -sand Mantelfläche bis 97.25 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 291.50 / 1.40 = 208.21 kN/m Rd = Rb,d + Rs1,d = 1073.26 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 202.10 - 0.00 + 78.61 + 24.00 = 304.71 kN/m ==&gt; µ = V,d / Rd = 304.71 / 1073.26 = 0.28</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						101.32	-6.1	13.89	84.84	84.84	101.27	-6.0	13.89	83.10	88.45	101.16	-5.7	16.68	95.66	95.66	101.11	-5.6	16.68	93.61	99.27	101.11	-5.6	17.69	99.27	99.27	101.06	-5.5	17.69	97.11	102.88	100.90	-5.1	22.17	113.71	113.71	100.85	-5.0	22.17	111.08	117.32	100.85	-5.0	23.42	117.32	117.32	100.80	-4.9	23.42	114.65	120.81	100.35	-3.9	38.96	152.24	152.24	100.30	-3.8	40.97	155.73	155.73	100.24	-3.7	40.97	151.45	159.22	100.19	-3.6	45.29	162.72	162.72	100.14	-3.5	45.29	158.06	166.21	100.14	-3.5	47.62	166.21	166.21	100.09	-3.4	47.62	161.35	169.70	99.33	-2.0	50.00	97.85	222.09	99.28	-1.9	50.00	93.38	225.58	99.28	-1.9	50.00	93.38	225.58	99.23	-1.8	50.00	89.07	228.97	99.19	-1.7	50.00	84.80	232.36	99.14	-1.6	50.00	80.55	235.74	99.14	-1.6	50.00	80.55	235.74	99.09	-1.5	50.00	76.33	239.13	98.16	0.0	50.00	0.17	303.52	98.11	0.1	50.00	-3.70	306.91	98.11	0.1	50.00	-3.70	306.91	98.06	0.2	50.00	-7.67	310.39	97.30	1.3	50.00	-66.65	362.65	97.25	1.4	50.00	-70.57	366.14
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101.11	-5.6	16.68	93.61	99.27																																																																																																																																																												
101.11	-5.6	17.69	99.27	99.27																																																																																																																																																												
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100.30	-3.8	40.97	155.73	155.73																																																																																																																																																												
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100.14	-3.5	45.29	158.06	166.21																																																																																																																																																												
100.14	-3.5	47.62	166.21	166.21																																																																																																																																																												
100.09	-3.4	47.62	161.35	169.70																																																																																																																																																												
99.33	-2.0	50.00	97.85	222.09																																																																																																																																																												
99.28	-1.9	50.00	93.38	225.58																																																																																																																																																												
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99.23	-1.8	50.00	89.07	228.97																																																																																																																																																												
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99.14	-1.6	50.00	80.55	235.74																																																																																																																																																												
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99.09	-1.5	50.00	76.33	239.13																																																																																																																																																												
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98.11	0.1	50.00	-3.70	306.91																																																																																																																																																												
98.11	0.1	50.00	-3.70	306.91																																																																																																																																																												
98.06	0.2	50.00	-7.67	310.39																																																																																																																																																												
97.30	1.3	50.00	-66.65	362.65																																																																																																																																																												
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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>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 5 Datei: 04_BS 5_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 = 106.15 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-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 74.40 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>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 13.50 106.09 104.75 Ständig 2 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/28
Kapitel: 4 LF 4 (BS-P)		Archiv Nr. 28
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]	[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 automatisch und Fuß gebettet

Profillänge = 9.70 m

Bettungsmodule

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

Ausnutzungsgrad  $\mu_e = 561.551 / 569.380 = 0.986$

Bettungslager  $B_{h,d} = 561.551 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 569.380 \text{ kN/m}$

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	-187.75	-144.83	-144.83	-154.45	3.900E+7	2.100E+7	-184.66

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	-15.7	0.0	-196.24	0.00	0.00
-7.47	103.72	-15.7	0.0	-196.24	0.00	0.00
-7.47	103.72	-15.7	0.0	-196.24	0.00	0.00
-6.64	103.72	-15.7	0.0	-196.24	0.00	0.00
-5.81	103.72	-15.8	0.0	-196.24	0.00	0.00
-4.98	103.72	-15.8	0.0	-196.24	0.00	0.00
-4.15	103.72	-15.8	0.0	-196.24	0.00	0.00
-3.32	103.72	-15.8	0.0	-196.24	0.00	0.00
-2.49	103.72	-15.8	0.0	-196.24	0.00	0.00
-1.66	103.72	-15.8	0.0	-196.24	0.00	0.00
-0.83	103.72	-15.8	0.0	-196.24	0.00	0.00
0.00	103.72	-15.8	0.0	-196.24	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\02\_BS 5\_LF2.vrb

eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0123


  

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c_k$	$d(p)/\phi$	$d(a)/\phi$
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 N1	Schnitt 5L	Seite Anlage N1/29
Kapitel:	4	LF 4 (BS-P)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025



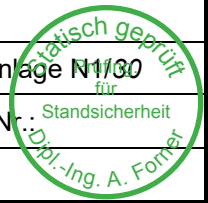
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: (1 - Faktor) · kah + Faktor · k0</div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit phi = 40 °</div> <div>Ersatzerddruck-Beiwert kah wird angewendet, wenn Kohäsion &lt;&gt; 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>101.883 101.792 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>100.851 100.295 40.280 43.643 0.00 0.00</div> <div>100.295 100.143 43.643 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 96.449 58.732 61.427 0.00 0.00</div> <div>96.449 93.368 61.427 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 N1 Schnitt 5L		Seite Anlage N1/30
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>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 -78.36 100.85 100.30 -78.36 -100.31 100.30 100.14 -100.31 -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 -226.35 97.10 96.45 -226.35 -252.12 96.45 93.37 -252.12 -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 -196.2 103.72 -85.8 37.4 -134.6 103.65 -87.9 34.0 -132.3 103.56 -91.2 27.9 -129.3 103.53 -92.3 25.7 -128.5 103.46 -94.9 20.3 -126.9 103.41 -97.0 15.8 -126.0 103.31 -101.1 6.5 -124.9 103.28 -102.3 3.5 -124.7 103.16 -108.0 -10.4 -125.1 103.08 -111.6 -19.4 -126.2 103.06 -112.8 -22.5 -126.8 103.03 -114.1 -25.9 -127.4 102.91 -120.6 -43.2 -131.6 102.77 -128.1 -64.0 -138.8 102.71 -132.1 -75.2 -143.6</div>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/31
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 Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																					
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<div><div><div>102.60 -138.4 -93.3 -152.5</div><div>102.55 -141.6 -100.2 -157.4</div><div>102.48 -145.3 -107.6 -164.9</div><div>102.44 -145.7 -110.5 -169.2</div><div>102.26 -147.1 -121.5 -189.6</div><div>102.18 -147.4 -125.7 -199.8</div><div>102.13 -147.5 -128.0 -206.1</div><div>101.88 -146.5 -135.1 -238.8</div><div>101.79 -145.6 -135.7 -251.1</div><div>101.32 -136.5 -120.0 -312.4</div><div>101.11 -130.0 -103.8 -335.9</div><div>100.85 -119.7 -76.6 -359.6</div><div>100.30 -90.0 1.7 -381.5</div><div>100.14 -80.2 26.8 -379.4</div><div>99.28 -41.9 122.7 -309.3</div><div>99.14 -38.2 131.5 -290.6</div><div>98.11 -31.3 141.7 -142.5</div><div>97.10 -48.9 77.4 -26.8</div><div>96.45 -53.7 0.0 0.0</div></div><div><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>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>-144.8</td></tr><tr><td>103.72</td><td>-66.1</td><td>26.6</td><td>-100.5</td><td></td></tr><tr><td>103.65</td><td>-67.8</td><td>24.0</td><td>-98.8</td><td></td></tr><tr><td>103.56</td><td>-70.3</td><td>19.4</td><td>-96.7</td><td></td></tr><tr><td>103.53</td><td>-71.2</td><td>17.6</td><td>-96.2</td><td></td></tr><tr><td>103.46</td><td>-73.2</td><td>13.5</td><td>-95.1</td><td></td></tr><tr><td>103.41</td><td>-74.9</td><td>10.0</td><td>-94.5</td><td></td></tr><tr><td>103.31</td><td>-78.1</td><td>2.8</td><td>-93.8</td><td></td></tr><tr><td>103.28</td><td>-79.1</td><td>0.6</td><td>-93.8</td><td></td></tr><tr><td>103.16</td><td>-83.5</td><td>-10.2</td><td>-94.4</td><td></td></tr><tr><td>103.08</td><td>-86.3</td><td>-17.1</td><td>-95.4</td><td></td></tr><tr><td>103.06</td><td>-87.3</td><td>-19.6</td><td>-95.8</td><td></td></tr><tr><td>103.03</td><td>-88.3</td><td>-22.1</td><td>-96.3</td><td></td></tr><tr><td>102.91</td><td>-93.4</td><td>-35.5</td><td>-99.9</td><td></td></tr><tr><td>102.77</td><td>-99.3</td><td>-51.6</td><td>-105.8</td><td></td></tr><tr><td>102.71</td><td>-102.4</td><td>-60.3</td><td>-109.6</td><td></td></tr><tr><td>102.60</td><td>-107.4</td><td>-74.3</td><td>-116.7</td><td></td></tr><tr><td>102.55</td><td>-109.9</td><td>-79.7</td><td>-120.6</td><td></td></tr><tr><td>102.48</td><td>-113.2</td><td>-85.5</td><td>-126.6</td><td></td></tr><tr><td>102.44</td><td>-113.5</td><td>-87.7</td><td>-130.0</td><td></td></tr><tr><td>102.26</td><td>-114.7</td><td>-96.3</td><td>-146.2</td><td></td></tr><tr><td>102.18</td><td>-114.9</td><td>-99.6</td><td>-154.3</td><td></td></tr><tr><td>102.13</td><td>-114.9</td><td>-101.4</td><td>-159.2</td><td></td></tr><tr><td>101.88</td><td>-114.2</td><td>-107.0</td><td>-185.2</td><td></td></tr><tr><td>101.79</td><td>-113.5</td><td>-107.5</td><td>-194.9</td><td></td></tr><tr><td>101.32</td><td>-106.3</td><td>-95.1</td><td>-243.5</td><td></td></tr><tr><td>101.11</td><td>-101.3</td><td>-82.4</td><td>-262.1</td><td></td></tr><tr><td>100.85</td><td>-93.2</td><td>-60.9</td><td>-280.9</td><td></td></tr><tr><td>100.30</td><td>-70.0</td><td>0.7</td><td>-298.6</td><td></td></tr><tr><td>100.14</td><td>-62.3</td><td>20.4</td><td>-297.0</td><td></td></tr><tr><td>99.28</td><td>-32.5</td><td>95.9</td><td>-242.4</td><td></td></tr><tr><td>99.14</td><td>-29.6</td><td>102.9</td><td>-227.7</td><td></td></tr><tr><td>98.11</td><td>-24.3</td><td>111.1</td><td>-111.8</td><td></td></tr><tr><td>97.10</td><td>-38.1</td><td>60.7</td><td>-21.0</td><td></td></tr><tr><td>96.45</td><td>-41.9</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]	106.15	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	-144.8	103.72	-66.1	26.6	-100.5		103.65	-67.8	24.0	-98.8		103.56	-70.3	19.4	-96.7		103.53	-71.2	17.6	-96.2		103.46	-73.2	13.5	-95.1		103.41	-74.9	10.0	-94.5		103.31	-78.1	2.8	-93.8		103.28	-79.1	0.6	-93.8		103.16	-83.5	-10.2	-94.4		103.08	-86.3	-17.1	-95.4		103.06	-87.3	-19.6	-95.8		103.03	-88.3	-22.1	-96.3		102.91	-93.4	-35.5	-99.9		102.77	-99.3	-51.6	-105.8		102.71	-102.4	-60.3	-109.6		102.60	-107.4	-74.3	-116.7		102.55	-109.9	-79.7	-120.6		102.48	-113.2	-85.5	-126.6		102.44	-113.5	-87.7	-130.0		102.26	-114.7	-96.3	-146.2		102.18	-114.9	-99.6	-154.3		102.13	-114.9	-101.4	-159.2		101.88	-114.2	-107.0	-185.2		101.79	-113.5	-107.5	-194.9		101.32	-106.3	-95.1	-243.5		101.11	-101.3	-82.4	-262.1		100.85	-93.2	-60.9	-280.9		100.30	-70.0	0.7	-298.6		100.14	-62.3	20.4	-297.0		99.28	-32.5	95.9	-242.4		99.14	-29.6	102.9	-227.7		98.11	-24.3	111.1	-111.8		97.10	-38.1	60.7	-21.0		96.45	-41.9	0.0	0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Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																			
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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>106.15</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>-144.8</td></tr><tr><td>103.72</td><td>-66.1</td><td>26.6</td><td>-100.5</td><td></td></tr><tr><td>103.65</td><td>-67.8</td><td>24.0</td><td>-98.8</td><td></td></tr><tr><td>103.56</td><td>-70.3</td><td>19.4</td><td>-96.7</td><td></td></tr><tr><td>103.53</td><td>-71.2</td><td>17.6</td><td>-96.2</td><td></td></tr><tr><td>103.46</td><td>-73.2</td><td>13.5</td><td>-95.1</td><td></td></tr><tr><td>103.41</td><td>-74.9</td><td>10.0</td><td>-94.5</td><td></td></tr><tr><td>103.31</td><td>-78.1</td><td>2.8</td><td>-93.8</td><td></td></tr><tr><td>103.28</td><td>-79.1</td><td>0.6</td><td>-93.8</td><td></td></tr><tr><td>103.16</td><td>-83.5</td><td>-10.2</td><td>-94.4</td><td></td></tr><tr><td>103.08</td><td>-86.3</td><td>-17.1</td><td>-95.4</td><td></td></tr><tr><td>103.06</td><td>-87.3</td><td>-19.6</td><td>-95.8</td><td></td></tr><tr><td>103.03</td><td>-88.3</td><td>-22.1</td><td>-96.3</td><td></td></tr><tr><td>102.91</td><td>-93.4</td><td>-35.5</td><td>-99.9</td><td></td></tr><tr><td>102.77</td><td>-99.3</td><td>-51.6</td><td>-105.8</td><td></td></tr><tr><td>102.71</td><td>-102.4</td><td>-60.3</td><td>-109.6</td><td></td></tr><tr><td>102.60</td><td>-107.4</td><td>-74.3</td><td>-116.7</td><td></td></tr><tr><td>102.55</td><td>-109.9</td><td>-79.7</td><td>-120.6</td><td></td></tr><tr><td>102.48</td><td>-113.2</td><td>-85.5</td><td>-126.6</td><td></td></tr><tr><td>102.44</td><td>-113.5</td><td>-87.7</td><td>-130.0</td><td></td></tr><tr><td>102.26</td><td>-114.7</td><td>-96.3</td><td>-146.2</td><td></td></tr><tr><td>102.18</td><td>-114.9</td><td>-99.6</td><td>-154.3</td><td></td></tr><tr><td>102.13</td><td>-114.9</td><td>-101.4</td><td>-159.2</td><td></td></tr><tr><td>101.88</td><td>-114.2</td><td>-107.0</td><td>-185.2</td><td></td></tr><tr><td>101.79</td><td>-113.5</td><td>-107.5</td><td>-194.9</td><td></td></tr><tr><td>101.32</td><td>-106.3</td><td>-95.1</td><td>-243.5</td><td></td></tr><tr><td>101.11</td><td>-101.3</td><td>-82.4</td><td>-262.1</td><td></td></tr><tr><td>100.85</td><td>-93.2</td><td>-60.9</td><td>-280.9</td><td></td></tr><tr><td>100.30</td><td>-70.0</td><td>0.7</td><td>-298.6</td><td></td></tr><tr><td>100.14</td><td>-62.3</td><td>20.4</td><td>-297.0</td><td></td></tr><tr><td>99.28</td><td>-32.5</td><td>95.9</td><td>-242.4</td><td></td></tr><tr><td>99.14</td><td>-29.6</td><td>102.9</td><td>-227.7</td><td></td></tr><tr><td>98.11</td><td>-24.3</td><td>111.1</td><td>-111.8</td><td></td></tr><tr><td>97.10</td><td>-38.1</td><td>60.7</td><td>-21.0</td><td></td></tr><tr><td>96.45</td><td>-41.9</td><td>0.0</td><td>0.0</td><td></td></tr></tbody></table> 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<table><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>102.55</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>101.11</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>100.30</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><tr><td>98.11</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>97.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>96.45</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>106.15</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.86</td><td>-18.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.81</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.76</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.65</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.80</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.75</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.70</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.47</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.42</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.37</td><td>-14.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-13.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-13.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.80</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.75</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-12.4</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	100.30	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	96.45	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m²]	[kN/m²]	[kN/m²]	106.15	-19.7	-	-	-	106.09	-19.5	-	-	-	106.09	-19.5	-	-	-	106.04	-19.4	-	-	-	105.86	-18.8	-	-	-	105.81	-18.7	-	-	-	105.81	-18.7	-	-	-	105.76	-18.5	-	-	-	105.65	-18.2	-	-	-	105.60	-18.0	-	-	-	105.60	-18.0	-	-	-	105.55	-17.9	-	-	-	105.55	-17.9	-	-	-	105.50	-17.7	-	-	-	105.50	-17.7	-	-	-	105.45	-17.6	-	-	-	105.20	-16.8	-	-	-	105.15	-16.7	-	-	-	105.15	-16.7	-	-	-	105.10	-16.5	-	-	-	104.80	-15.6	-	-	-	104.75	-15.5	-	-	-	104.75	-15.5	-	-	-	104.70	-15.3	-	-	-	104.47	-14.6	-	-	-	104.42	-14.5	-	-	-	104.42	-14.5	-	-	-	104.37	-14.3	-	-	-	104.15	-13.7	-	-	-	104.10	-13.5	-	-	-	104.10	-13.5	-	-	-	104.05	-13.4	-	-	-	103.80	-12.6	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.75	-12.5	-	-	-	103.72	-12.4	-	-	-	103.72	-12.4	-	-	-
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102.22	-8.2	4.80	39.17	42.54																																																																																																																																																																																																																																																																																																																																																																					
102.22	-8.2	5.21	42.54	42.54																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.0	5.21	41.97	45.37																																																																																																																																																																																																																																																																																																																																																																					
102.18	-8.0	5.64	45.37	45.37																																																																																																																																																																																																																																																																																																																																																																					
102.13	-7.9	5.64	44.63	48.79																																																																																																																																																																																																																																																																																																																																																																					
102.13	-7.9	6.16	48.79	48.79																																																																																																																																																																																																																																																																																																																																																																					
102.08	-7.8	6.16	47.99	52.21																																																																																																																																																																																																																																																																																																																																																																					
101.93	-7.4	8.45	62.48	62.48																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.3	8.45	61.40	65.90																																																																																																																																																																																																																																																																																																																																																																					
101.88	-7.3	9.07	65.90	65.90																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.2	9.07	64.85	69.04																																																																																																																																																																																																																																																																																																																																																																					
101.84	-7.2	9.65	69.04	69.04																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.0	9.65	67.92	72.18																																																																																																																																																																																																																																																																																																																																																																					
101.79	-7.0	10.26	72.18	72.18																																																																																																																																																																																																																																																																																																																																																																					
101.74	-6.9	10.26	70.82	75.79																																																																																																																																																																																																																																																																																																																																																																					
101.37	-6.0	16.83	101.05	101.05																																																																																																																																																																																																																																																																																																																																																																					
101.32	-5.9	16.83	98.96	104.66																																																																																																																																																																																																																																																																																																																																																																					
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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> 101.32   -5.9   17.79   104.66   104.66  101.27   -5.8   17.79   102.47   108.27  101.16   -5.5   20.94   115.48   115.48  101.11   -5.4   20.94   112.98   119.09  101.11   -5.4   22.07   119.09   119.09  101.06   -5.3   22.07   116.48   122.70  100.90   -4.9   27.08   133.53   133.53  100.85   -4.8   27.08   130.46   137.14  100.85   -4.8   28.47   137.14   137.14  100.80   -4.7   28.47   134.05   140.63  100.35   -3.8   45.40   172.06   172.06  100.30   -3.7   45.40   167.72   175.55  100.30   -3.7   47.52   175.56   175.55  100.24   -3.6   47.52   171.07   179.04  100.19   -3.5   50.00   175.32   182.54  100.14   -3.4   50.00   170.73   186.03  100.14   -3.4   50.00   170.73   186.03  100.09   -3.3   50.00   166.21   189.52  99.33   -2.1   50.00   105.74   241.90  99.28   -2.0   50.00   102.17   245.40  99.28   -2.0   50.00   102.17   245.40  99.23   -2.0   50.00   98.75   248.79  99.19   -1.9   50.00   95.39   252.17  99.14   -1.8   50.00   92.07   255.56  99.14   -1.8   50.00   92.07   255.56  99.09   -1.8   50.00   88.80   258.95  98.16   -0.7   50.00   34.05   323.34  98.11   -0.6   50.00   31.47   326.73  98.11   -0.6   50.00   31.47   326.73  98.06   -0.6   50.00   28.86   330.20  97.15   0.3   50.00   -15.30   392.64  97.10   0.4   50.00   -17.65   396.11  97.10   0.4   50.00   -17.65   396.11  97.05   0.4   50.00   -20.01   399.58  96.50   0.9   50.00   -45.75   437.74  96.45   1.0   50.00   -48.09   441.21 </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  phi,[g+q],k: -0.05329214  Theoretischer Fußpunkt = 96.449 m</p> <p>Einbindetiefe tg = 6.10 m  Profillänge = 9.70 m</p> </div> </div>		
Schnitt: Anlage N1   Schnitt 5L	Seite Anlage N1/36	
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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 183.55 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 20.00 \text{ kN/m}</math> <math>E_{av,k} = 77.86 \text{ kN/m}</math> (<math>E_{ah,k} = 425.34 \text{ kN/m}</math>) <math>B_{v,k} = 175.50</math> Summe <math>V_{,k} = 105.91 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 97.33 bis 93.81 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 96.45 55.00 s3: Flussskies, -sand Mantelfläche bis 96.45 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 335.50 / 1.40 = 239.64 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 1104.69 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 247.80 - 0.00 + 99.28 + 27.00 = 374.07 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 374.07 / 1104.69 = 0.34</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>		
Schnitt: Anlage N1 Schnitt 5L		Seite Anlage N1/37
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
<div>Anlage O1 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: 01_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 O1 Schnitt 6L		Seite Anlage O1/1
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 111
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>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>104.41</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></div> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 6.50 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>105.75</td><td>105.55</td><td>5.000</td><td>5.000</td></tr><tr><td>105.55</td><td>103.74</td><td>5.000</td><td>5.000</td></tr><tr><td>103.74</td><td>102.55</td><td>5.000</td><td>5.000</td></tr><tr><td>102.55</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table></div> <div>Ausnutzungsgrad <math>\mu_e = 512.611 / 515.686 = 0.994</math></div> <div>Bettungslager <math>B_{h,d} = 512.611</math> kN/m</div> <div>Erdwiderstand <math>E_{ph,d} = 515.686</math> kN/m</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>105.55</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> <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 &lt;&gt; 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 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>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>105.750</td><td>0.000</td><td>3.274</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.550</td><td>3.274</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>0.00</td></tr><tr><td>105.500</td><td>105.050</td><td>5.681</td><td>10.015</td><td>0.00</td><td>4.50</td></tr><tr><td>105.050</td><td>105.000</td><td>10.015</td><td>10.496</td><td>4.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.740</td><td>10.496</td><td>13.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.740</td><td>104.410</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.410</td><td>104.049</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.049</td><td>103.740</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>103.740</td><td>103.740</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>103.740</td><td>103.603</td><td>0.000</td><td>21.945</td><td>5.00</td><td>5.00</td></tr><tr><td>103.603</td><td>103.479</td><td>21.945</td><td>48.775</td><td>5.00</td><td>5.00</td></tr><tr><td>103.479</td><td>103.467</td><td>48.775</td><td>52.755</td><td>5.00</td><td>5.00</td></tr><tr><td>103.467</td><td>103.355</td><td>52.755</td><td>70.508</td><td>5.00</td><td>5.00</td></tr><tr><td>103.355</td><td>103.325</td><td>70.508</td><td>77.246</td><td>5.00</td><td>5.00</td></tr><tr><td>103.325</td><td>103.231</td><td>77.246</td><td>93.989</td><td>5.00</td><td>5.00</td></tr><tr><td>103.231</td><td>103.216</td><td>93.989</td><td>97.233</td><td>5.00</td><td>5.00</td></tr><tr><td>103.216</td><td>103.106</td><td>97.233</td><td>97.458</td><td>5.00</td><td>5.00</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	104.41	0.00	0.00	-101.70	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	105.75	105.55	5.000	5.000	105.55	103.74	5.000	5.000	103.74	102.55	5.000	5.000	102.55	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	105.55	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	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	105.750	0.000	3.274	0.00	0.00	105.750	105.550	3.274	5.200	0.00	0.00	105.550	105.500	5.200	5.681	0.00	0.00	105.500	105.050	5.681	10.015	0.00	4.50	105.050	105.000	10.015	10.496	4.50	5.00	105.000	104.740	10.496	13.000	5.00	5.00	104.740	104.410	0.000	0.000	5.00	5.00	104.410	104.049	0.000	0.000	5.00	5.00	104.049	103.740	0.000	0.000	5.00	5.00	103.740	103.740	0.000	0.000	5.00	5.00	103.740	103.603	0.000	21.945	5.00	5.00	103.603	103.479	21.945	48.775	5.00	5.00	103.479	103.467	48.775	52.755	5.00	5.00	103.467	103.355	52.755	70.508	5.00	5.00	103.355	103.325	70.508	77.246	5.00	5.00	103.325	103.231	77.246	93.989	5.00	5.00	103.231	103.216	93.989	97.233	5.00	5.00	103.216	103.106	97.233	97.458	5.00	5.00	<div>Schnitt: Anlage O1 Schnitt 6L</div> <div>Kapitel: 1 LF 1 (BS-T)</div> <div>Vorgang: Genehmigungstatik</div>	<div>Seite Anlage O1/2</div> <div>Archiv Nr.:</div> <div>Projekt-Nr.: 2004-0025</div>
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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																			
<table><tr><td>103.106</td><td>103.044</td><td>97.458</td><td>99.577</td><td>5.00</td><td>5.00</td></tr><tr><td>103.044</td><td>102.982</td><td>99.577</td><td>101.696</td><td>5.00</td><td>5.00</td></tr><tr><td>102.982</td><td>102.965</td><td>101.696</td><td>102.681</td><td>5.00</td><td>5.00</td></tr><tr><td>102.965</td><td>102.948</td><td>102.681</td><td>101.232</td><td>5.00</td><td>5.00</td></tr><tr><td>102.948</td><td>102.858</td><td>101.232</td><td>104.018</td><td>5.00</td><td>5.00</td></tr><tr><td>102.858</td><td>102.670</td><td>104.018</td><td>113.420</td><td>5.00</td><td>5.00</td></tr><tr><td>102.670</td><td>102.651</td><td>113.420</td><td>112.557</td><td>5.00</td><td>5.00</td></tr><tr><td>102.651</td><td>102.570</td><td>112.557</td><td>109.205</td><td>5.00</td><td>5.00</td></tr><tr><td>102.570</td><td>102.550</td><td>109.205</td><td>109.868</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>101.878</td><td>77.568</td><td>72.425</td><td>5.00</td><td>5.00</td></tr><tr><td>101.878</td><td>101.779</td><td>72.425</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>99.911</td><td>46.844</td><td>47.638</td><td>5.00</td><td>5.00</td></tr><tr><td>99.911</td><td>99.599</td><td>47.638</td><td>48.917</td><td>5.00</td><td>5.00</td></tr><tr><td>99.599</td><td>80.000</td><td>48.917</td><td>129.303</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>105.55</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>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>102.55</td><td>3.034</td><td>3.911</td><td>22.500</td><td>-15.01</td><td>23.23</td></tr><tr><td>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>105.55</td><td>0.00</td><td>-11.70</td></tr><tr><td>105.55</td><td>105.50</td><td>-7.09</td><td>-8.68</td></tr><tr><td>105.50</td><td>105.05</td><td>-8.68</td><td>-22.96</td></tr><tr><td>105.05</td><td>105.00</td><td>-22.96</td><td>-24.55</td></tr><tr><td>105.00</td><td>104.74</td><td>-24.55</td><td>-28.67</td></tr><tr><td>104.74</td><td>104.41</td><td>-28.67</td><td>-33.91</td></tr><tr><td>104.41</td><td>104.05</td><td>-33.91</td><td>-39.64</td></tr><tr><td>104.05</td><td>103.74</td><td>-39.64</td><td>-44.54</td></tr><tr><td>103.74</td><td>103.74</td><td>-51.76</td><td>-44.54</td></tr><tr><td>103.74</td><td>103.60</td><td>-51.76</td><td>-53.93</td></tr><tr><td>103.60</td><td>103.48</td><td>-53.93</td><td>-55.90</td></tr><tr><td>103.48</td><td>103.47</td><td>-55.90</td><td>-56.10</td></tr><tr><td>103.47</td><td>103.35</td><td>-56.10</td><td>-57.88</td></tr><tr><td>103.35</td><td>103.33</td><td>-57.88</td><td>-58.35</td></tr><tr><td>103.33</td><td>103.23</td><td>-58.35</td><td>-59.85</td></tr><tr><td>103.23</td><td>103.22</td><td>-59.85</td><td>-60.08</td></tr><tr><td>103.22</td><td>103.11</td><td>-60.08</td><td>-61.82</td></tr><tr><td>103.11</td><td>103.04</td><td>-61.82</td><td>-62.80</td></tr><tr><td>103.04</td><td>102.98</td><td>-62.80</td><td>-63.79</td></tr><tr><td>102.98</td><td>102.97</td><td>-63.79</td><td>-64.06</td></tr><tr><td>102.97</td><td>102.95</td><td>-64.06</td><td>-64.33</td></tr><tr><td>102.95</td><td>102.86</td><td>-64.33</td><td>-65.76</td></tr><tr><td>102.86</td><td>102.67</td><td>-65.76</td><td>-68.73</td></tr><tr><td>102.67</td><td>102.65</td><td>-68.73</td><td>-69.05</td></tr><tr><td>102.65</td><td>102.57</td><td>-69.05</td><td>-70.32</td></tr><tr><td>102.57</td><td>102.55</td><td>-70.32</td><td>-70.65</td></tr><tr><td>102.55</td><td>102.37</td><td>-125.57</td><td>-133.08</td></tr></table>								103.106	103.044	97.458	99.577	5.00	5.00	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	101.878	77.568	72.425	5.00	5.00	101.878	101.779	72.425	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	99.599	47.638	48.917	5.00	5.00	99.599	80.000	48.917	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	105.75	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	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	102.57	102.55	-70.32	-70.65	102.55	102.37	-125.57	-133.08
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102.948	102.858	101.232	104.018	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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102.105	102.076	77.247	77.568	5.00	5.00																																																																																																																																																																																																																																																																																																																				
102.076	101.878	77.568	72.425	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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101.635	101.165	61.954	48.084	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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99.911	99.599	47.638	48.917	5.00	5.00																																																																																																																																																																																																																																																																																																																				
99.599	80.000	48.917	129.303	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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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><div>102.37 102.11 -133.08 -144.47</div><div>102.11 102.08 -144.47 -145.72</div><div>102.08 101.88 -145.72 -154.14</div><div>101.88 101.78 -154.14 -158.35</div><div>101.78 101.64 -158.35 -164.46</div><div>101.64 101.16 -164.46 -184.44</div><div>101.16 101.06 -184.44 -188.88</div><div>101.06 100.69 -188.88 -204.43</div><div>100.69 100.06 -204.43 -231.49</div><div>100.06 99.91 -231.49 -237.74</div><div>99.91 99.60 -237.74 -251.00</div><div>99.60 80.00 -251.00 -1083.99</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>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 0.0 0.0</div><div>105.75 -7.6 -0.6 -0.1</div><div>105.55 -11.3 0.1 -0.2</div><div>105.50 -12.2 0.4 -0.2</div><div>105.05 -18.5 8.0 1.4</div><div>105.00 -19.0 9.4 1.9</div><div>104.74 -21.2 17.3 5.3</div><div>104.41 -23.2 34.7 13.8</div><div>104.41 -23.2 -87.3 13.8</div><div>104.05 -24.7 -65.6 -13.8</div><div>103.74 -26.3 -48.4 -31.4</div><div>103.74 -26.3 -48.4 -31.4</div><div>103.60 -27.2 -44.8 -37.7</div><div>103.48 -28.1 -43.8 -43.2</div><div>103.47 -28.2 -43.9 -43.7</div><div>103.35 -29.0 -46.6 -48.8</div><div>103.33 -29.3 -47.8 -50.2</div><div>103.23 -30.1 -52.9 -54.9</div><div>103.22 -30.2 -53.9 -55.7</div><div>103.11 -31.2 -61.6 -62.0</div><div>103.04 -31.8 -66.1 -66.0</div><div>102.98 -32.4 -70.9 -70.2</div><div>102.97 -32.5 -72.2 -71.5</div><div>102.95 -32.7 -73.6 -72.7</div><div>102.86 -33.6 -80.8 -79.7</div><div>102.67 -35.7 -97.8 -96.4</div><div>102.65 -35.9 -99.7 -98.3</div><div>102.57 -36.8 -107.3 -106.6</div><div>102.55 -37.1 -109.3 -108.8</div><div>102.37 -23.9 -84.1 -125.9</div><div>102.11 -2.3 -41.2 -142.9</div><div>102.08 0.3 -35.9 -144.0</div><div>101.88 16.9 -1.5 -147.6</div><div>101.78 24.2 13.8 -147.0</div><div>101.64 33.7 34.0 -143.6</div><div>101.16 55.3 81.6 -115.3</div><div>101.06 58.1 88.1 -106.4</div><div>100.69 62.6 98.2 -71.7</div><div>100.06 55.6 65.0 -16.2</div><div>99.91 55.7 47.9 -7.9</div><div>99.60 60.2 0.0 0.0</div></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>106.10 0.0 0.0 0.0</div><div>106.09 -0.2 0.0 0.0</div><div>105.75 -6.6 -0.6 -0.1</div><div>105.55 -9.9 0.0 -0.2</div><div>105.50 -10.7 0.3 -0.2</div><div>105.05 -16.2 6.7 1.2</div><div>105.00 -16.7 7.8 1.5</div><div>104.74 -18.7 14.5 4.4</div><div>104.41 -20.5 29.3 11.6</div></div></div>		
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/4
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 114
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



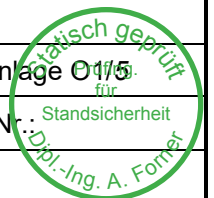
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<div><div>Schnittgrößen (g+w,k)</div><table><tr><td>Tiefe</td><td>N</td><td>Q</td><td>M</td></tr><tr><td>[mNHN]</td><td>[kN/m]</td><td>[kN/m]</td><td>[kN·m/m]</td></tr><tr><td>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>106.09</td><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>-18.7</td><td>14.5</td><td>4.4</td></tr><tr><td>104.41</td><td>-20.5</td><td>29.3</td><td>11.6</td></tr><tr><td>104.41</td><td>-20.5</td><td>-72.4</td><td>11.6</td></tr><tr><td>104.05</td><td>-21.9</td><td>-53.9</td><td>-11.2</td></tr><tr><td>103.74</td><td>-23.4</td><td>-39.4</td><td>-25.6</td></tr><tr><td>103.74</td><td>-23.4</td><td>-39.4</td><td>-25.6</td></tr><tr><td>103.60</td><td>-24.2</td><td>-36.3</td><td>-30.8</td></tr><tr><td>103.48</td><td>-25.0</td><td>-35.5</td><td>-35.2</td></tr><tr><td>103.47</td><td>-25.1</td><td>-35.7</td><td>-35.6</td></tr><tr><td>103.35</td><td>-25.9</td><td>-38.1</td><td>-39.8</td></tr><tr><td>103.33</td><td>-26.1</td><td>-39.2</td><td>-40.9</td></tr><tr><td>103.23</td><td>-26.8</td><td>-43.7</td><td>-44.8</td></tr><tr><td>103.22</td><td>-26.9</td><td>-44.6</td><td>-45.4</td></tr><tr><td>103.11</td><td>-27.8</td><td>-51.3</td><td>-50.7</td></tr><tr><td>103.04</td><td>-28.3</td><td>-55.3</td><td>-54.0</td></tr><tr><td>102.98</td><td>-28.8</td><td>-59.5</td><td>-57.6</td></tr><tr><td>102.97</td><td>-29.0</td><td>-60.6</td><td>-58.6</td></tr><tr><td>102.95</td><td>-29.1</td><td>-61.9</td><td>-59.7</td></tr><tr><td>102.86</td><td>-30.0</td><td>-68.2</td><td>-65.5</td></tr><tr><td>102.67</td><td>-31.8</td><td>-83.0</td><td>-79.6</td></tr><tr><td>102.65</td><td>-32.0</td><td>-84.7</td><td>-81.3</td></tr><tr><td>102.57</td><td>-32.8</td><td>-91.4</td><td>-88.4</td></tr><tr><td>102.55</td><td>-33.0</td><td>-93.1</td><td>-90.2</td></tr><tr><td>102.37</td><td>-21.8</td><td>-71.9</td><td>-104.9</td></tr><tr><td>102.11</td><td>-3.4</td><td>-35.8</td><td>-119.4</td></tr><tr><td>102.08</td><td>-1.3</td><td>-31.4</td><td>-120.4</td></tr><tr><td>101.88</td><td>12.9</td><td>-2.2</td><td>-123.7</td></tr></table></div>			104.41	-20.5	-72.4	11.6	104.05	-21.9	-53.9	-11.2	103.74	-23.4	-39.4	-25.6	103.74	-23.4	-39.4	-25.6	103.60	-24.2	-36.3	-30.8	103.48	-25.0	-35.5	-35.2	103.47	-25.1	-35.7	-35.6	103.35	-25.9	-38.1	-39.8	103.33	-26.1	-39.2	-40.9	103.23	-26.8	-43.7	-44.8	103.22	-26.9	-44.6	-45.4	103.11	-27.8	-51.3	-50.7	103.04	-28.3	-55.3	-54.0	102.98	-28.8	-59.5	-57.6	102.97	-29.0	-60.6	-58.6	102.95	-29.1	-61.9	-59.7	102.86	-30.0	-68.2	-65.5	102.67	-31.8	-83.0	-79.6	102.65	-32.0	-84.7	-81.3	102.57	-32.8	-91.4	-88.4	102.55	-33.0	-93.1	-90.2	102.37	-21.8	-71.9	-104.9	102.11	-3.4	-35.8	-119.4	102.08	-1.3	-31.4	-120.4	101.88	12.9	-2.2	-123.7	101.78	19.1	10.7	-123.3	101.64	27.2	27.8	-120.5	101.16	45.7	68.2	-96.9	101.06	48.1	73.8	-89.5	100.69	51.9	82.5	-60.4	100.06	45.4	54.8	-13.7	99.91	45.3	40.4	-6.6	99.60	48.9	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	-0.2	0.0	0.0	105.75	-6.6	-0.6	-0.1	105.55	-9.9	0.0	-0.2	105.50	-10.7	0.3	-0.2	105.05	-16.2	6.7	1.2	105.00	-16.7	7.8	1.5	104.74	-18.7	14.5	4.4	104.41	-20.5	29.3	11.6	104.41	-20.5	-72.4	11.6	104.05	-21.9	-53.9	-11.2	103.74	-23.4	-39.4	-25.6	103.74	-23.4	-39.4	-25.6	103.60	-24.2	-36.3	-30.8	103.48	-25.0	-35.5	-35.2	103.47	-25.1	-35.7	-35.6	103.35	-25.9	-38.1	-39.8	103.33	-26.1	-39.2	-40.9	103.23	-26.8	-43.7	-44.8	103.22	-26.9	-44.6	-45.4	103.11	-27.8	-51.3	-50.7	103.04	-28.3	-55.3	-54.0	102.98	-28.8	-59.5	-57.6	102.97	-29.0	-60.6	-58.6	102.95	-29.1	-61.9	-59.7	102.86	-30.0	-68.2	-65.5	102.67	-31.8	-83.0	-79.6	102.65	-32.0	-84.7	-81.3	102.57	-32.8	-91.4	-88.4	102.55	-33.0	-93.1	-90.2	102.37	-21.8	-71.9	-104.9	102.11	-3.4	-35.8	-119.4	102.08	-1.3	-31.4	-120.4	101.88	12.9	-2.2	-123.7
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104.41	-20.5	29.3	11.6																																																																																																																																																																																																																																																																																			
104.41	-20.5	-72.4	11.6																																																																																																																																																																																																																																																																																			
104.05	-21.9	-53.9	-11.2																																																																																																																																																																																																																																																																																			
103.74	-23.4	-39.4	-25.6																																																																																																																																																																																																																																																																																			
103.74	-23.4	-39.4	-25.6																																																																																																																																																																																																																																																																																			
103.60	-24.2	-36.3	-30.8																																																																																																																																																																																																																																																																																			
103.48	-25.0	-35.5	-35.2																																																																																																																																																																																																																																																																																			
103.47	-25.1	-35.7	-35.6																																																																																																																																																																																																																																																																																			
103.35	-25.9	-38.1	-39.8																																																																																																																																																																																																																																																																																			
103.33	-26.1	-39.2	-40.9																																																																																																																																																																																																																																																																																			
103.23	-26.8	-43.7	-44.8																																																																																																																																																																																																																																																																																			
103.22	-26.9	-44.6	-45.4																																																																																																																																																																																																																																																																																			
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102.86	-30.0	-68.2	-65.5																																																																																																																																																																																																																																																																																			
102.67	-31.8	-83.0	-79.6																																																																																																																																																																																																																																																																																			
102.65	-32.0	-84.7	-81.3																																																																																																																																																																																																																																																																																			
102.57	-32.8	-91.4	-88.4																																																																																																																																																																																																																																																																																			
102.55	-33.0	-93.1	-90.2																																																																																																																																																																																																																																																																																			
102.37	-21.8	-71.9	-104.9																																																																																																																																																																																																																																																																																			
102.11	-3.4	-35.8	-119.4																																																																																																																																																																																																																																																																																			
102.08	-1.3	-31.4	-120.4																																																																																																																																																																																																																																																																																			
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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>101.7819.110.7-123.3</div><div>101.6427.227.8-120.5</div><div>101.1645.768.2-96.9</div><div>101.0648.173.8-89.5</div><div>100.6951.982.5-60.4</div><div>100.0645.454.8-13.7</div><div>99.9145.340.4-6.6</div><div>99.6048.90.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><div><div>[mNHN]</div><div>[kN/m]</div><div>[kN/m]</div><div>[kN·m/m]</div></div></div><div><div>106.100.00.00.0</div><div>106.090.00.00.0</div><div>105.750.00.00.0</div><div>105.550.00.00.0</div><div>105.500.00.00.0</div><div>105.050.00.00.0</div><div>105.000.00.00.0</div><div>104.740.00.00.0</div><div>104.410.00.00.0</div><div>104.050.00.00.0</div><div>103.740.00.00.0</div><div>103.740.00.00.0</div><div>103.600.00.00.0</div><div>103.480.00.00.0</div><div>103.470.00.00.0</div><div>103.350.00.00.0</div><div>103.330.00.00.0</div><div>103.230.00.00.0</div><div>103.220.00.00.0</div><div>103.110.00.00.0</div><div>103.040.00.00.0</div><div>102.980.00.00.0</div><div>102.970.00.00.0</div><div>102.950.00.00.0</div><div>102.860.00.00.0</div><div>102.670.00.00.0</div><div>102.650.00.00.0</div><div>102.570.00.00.0</div><div>102.550.00.00.0</div><div>102.370.00.00.0</div><div>102.110.00.00.0</div><div>102.080.00.00.0</div><div>101.880.00.00.0</div><div>101.780.00.00.0</div><div>101.640.00.00.0</div><div>101.160.00.00.0</div><div>101.060.00.00.0</div><div>100.690.00.00.0</div><div>100.060.00.00.0</div><div>99.910.00.00.0</div><div>99.600.00.00.0</div></div></div><div><div>Weggrößen ([g+q],k)</div><div>berechnet mit EI = 5.887E+5 kN·m²/m</div><div><div><div>Tiefe</div><div>w</div><div>ks</div><div>sig,Bh,k</div><div>e<sub>ph,k</sub></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>106.10-17.4- - -</div><div>106.09-17.3- - -</div><div>106.09-17.3- - -</div><div>106.04-17.2- - -</div><div>105.80-16.4- - -</div><div>105.75-16.30.000.000.00</div><div>105.75-16.30.000.000.00</div><div>105.70-16.10.000.004.75</div><div>105.60-15.80.9014.2714.26</div><div>105.55-15.60.9014.1219.02</div><div>105.55-15.60.7411.5311.53</div><div>105.50-15.50.7411.4114.11</div><div>105.50-15.50.9114.1114.11</div></div></div></div>					
Schnitt: Anlage O1 Schnitt 6L				Seite Anlage O1/6	
Kapitel: 1 LF 1 (BS-T)				Archiv Nr.: 176	
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>105.45</td><td>-15.3</td><td>0.91</td><td>13.96</td><td>16.68</td></tr><tr><td>105.10</td><td>-14.2</td><td>2.44</td><td>34.74</td><td>34.73</td></tr><tr><td>105.05</td><td>-14.1</td><td>2.44</td><td>34.35</td><td>37.31</td></tr><tr><td>105.05</td><td>-14.1</td><td>2.65</td><td>37.32</td><td>37.31</td></tr><tr><td>105.00</td><td>-13.9</td><td>2.65</td><td>36.90</td><td>39.89</td></tr><tr><td>105.00</td><td>-13.9</td><td>2.87</td><td>39.89</td><td>39.89</td></tr><tr><td>104.95</td><td>-13.7</td><td>2.87</td><td>39.43</td><td>41.23</td></tr><tr><td>104.79</td><td>-13.3</td><td>3.41</td><td>45.26</td><td>45.26</td></tr><tr><td>104.74</td><td>-13.1</td><td>3.41</td><td>44.70</td><td>46.60</td></tr><tr><td>104.74</td><td>-13.1</td><td>3.56</td><td>46.60</td><td>46.60</td></tr><tr><td>104.69</td><td>-12.9</td><td>3.56</td><td>46.07</td><td>47.81</td></tr><tr><td>104.46</td><td>-12.2</td><td>4.41</td><td>53.89</td><td>53.89</td></tr><tr><td>104.41</td><td>-12.1</td><td>4.41</td><td>53.24</td><td>55.11</td></tr><tr><td>104.41</td><td>-12.1</td><td>4.57</td><td>55.11</td><td>55.11</td></tr><tr><td>104.36</td><td>-11.9</td><td>4.57</td><td>54.37</td><td>56.43</td></tr><tr><td>104.10</td><td>-11.1</td><td>5.00</td><td>55.44</td><td>63.08</td></tr><tr><td>104.05</td><td>-10.9</td><td>5.00</td><td>54.63</td><td>64.41</td></tr><tr><td>104.05</td><td>-10.9</td><td>5.00</td><td>54.63</td><td>64.41</td></tr><tr><td>104.00</td><td>-10.8</td><td>5.00</td><td>53.82</td><td>65.74</td></tr><tr><td>103.79</td><td>-10.1</td><td>5.00</td><td>50.59</td><td>71.05</td></tr><tr><td>103.74</td><td>-10.0</td><td>5.00</td><td>49.78</td><td>72.38</td></tr><tr><td>103.74</td><td>-10.0</td><td>5.00</td><td>49.78</td><td>84.11</td></tr><tr><td>103.74</td><td>-9.9</td><td>5.00</td><td>49.74</td><td>84.18</td></tr><tr><td>103.74</td><td>-9.9</td><td>5.00</td><td>49.74</td><td>84.18</td></tr><tr><td>103.69</td><td>-9.8</td><td>5.00</td><td>49.04</td><td>85.33</td></tr><tr><td>103.65</td><td>-9.7</td><td>5.00</td><td>48.34</td><td>86.49</td></tr><tr><td>103.60</td><td>-9.5</td><td>5.00</td><td>47.64</td><td>87.64</td></tr><tr><td>103.60</td><td>-9.5</td><td>5.00</td><td>47.64</td><td>87.64</td></tr><tr><td>103.54</td><td>-9.3</td><td>5.00</td><td>46.67</td><td>89.24</td></tr><tr><td>103.54</td><td>-9.3</td><td>5.00</td><td>46.67</td><td>89.24</td></tr><tr><td>103.48</td><td>-9.1</td><td>5.00</td><td>45.70</td><td>90.84</td></tr><tr><td>103.48</td><td>-9.1</td><td>5.00</td><td>45.70</td><td>90.84</td></tr><tr><td>103.47</td><td>-9.1</td><td>5.00</td><td>45.51</td><td>91.16</td></tr><tr><td>103.47</td><td>-9.1</td><td>5.00</td><td>45.51</td><td>91.16</td></tr><tr><td>103.41</td><td>-8.9</td><td>5.00</td><td>44.63</td><td>92.60</td></tr><tr><td>103.41</td><td>-8.9</td><td>5.00</td><td>44.63</td><td>92.60</td></tr><tr><td>103.35</td><td>-8.8</td><td>5.00</td><td>43.76</td><td>94.05</td></tr><tr><td>103.35</td><td>-8.8</td><td>5.00</td><td>43.76</td><td>94.05</td></tr><tr><td>103.33</td><td>-8.7</td><td>5.00</td><td>43.30</td><td>94.81</td></tr><tr><td>103.33</td><td>-8.7</td><td>5.00</td><td>43.30</td><td>94.81</td></tr><tr><td>103.28</td><td>-8.5</td><td>5.00</td><td>42.57</td><td>96.03</td></tr><tr><td>103.28</td><td>-8.5</td><td>5.00</td><td>42.57</td><td>96.03</td></tr><tr><td>103.23</td><td>-8.4</td><td>5.00</td><td>41.83</td><td>97.25</td></tr><tr><td>103.23</td><td>-8.4</td><td>5.00</td><td>41.83</td><td>97.25</td></tr><tr><td>103.22</td><td>-8.3</td><td>5.00</td><td>41.61</td><td>97.63</td></tr><tr><td>103.22</td><td>-8.3</td><td>5.00</td><td>41.61</td><td>97.63</td></tr><tr><td>103.16</td><td>-8.2</td><td>5.00</td><td>40.76</td><td>99.04</td></tr><tr><td>103.16</td><td>-8.2</td><td>5.00</td><td>40.76</td><td>99.04</td></tr><tr><td>103.11</td><td>-8.0</td><td>5.00</td><td>39.91</td><td>100.46</td></tr><tr><td>103.11</td><td>-8.0</td><td>5.00</td><td>39.91</td><td>100.46</td></tr><tr><td>103.04</td><td>-7.8</td><td>5.00</td><td>38.95</td><td>102.06</td></tr><tr><td>103.04</td><td>-7.8</td><td>5.00</td><td>38.95</td><td>102.06</td></tr><tr><td>102.98</td><td>-7.6</td><td>5.00</td><td>37.99</td><td>103.66</td></tr><tr><td>102.98</td><td>-7.6</td><td>5.00</td><td>37.99</td><td>103.66</td></tr><tr><td>102.97</td><td>-7.5</td><td>5.00</td><td>37.73</td><td>104.09</td></tr><tr><td>102.97</td><td>-7.5</td><td>5.00</td><td>37.73</td><td>104.09</td></tr><tr><td>102.95</td><td>-7.5</td><td>5.00</td><td>37.46</td><td>104.54</td></tr><tr><td>102.95</td><td>-7.5</td><td>5.00</td><td>37.46</td><td>104.54</td></tr><tr><td>102.90</td><td>-7.4</td><td>5.00</td><td>36.77</td><td>105.70</td></tr><tr><td>102.90</td><td>-7.4</td><td>5.00</td><td>36.77</td><td>105.70</td></tr><tr><td>102.86</td><td>-7.2</td><td>5.00</td><td>36.08</td><td>106.86</td></tr><tr><td>102.86</td><td>-7.2</td><td>5.00</td><td>36.08</td><td>106.86</td></tr><tr><td>102.81</td><td>-7.1</td><td>5.00</td><td>35.36</td><td>108.07</td></tr><tr><td>102.72</td><td>-6.8</td><td>5.00</td><td>33.93</td><td>110.49</td></tr><tr><td>102.67</td><td>-6.6</td><td>5.00</td><td>33.22</td><td>111.69</td></tr><tr><td>102.67</td><td>-6.6</td><td>5.00</td><td>33.22</td><td>111.69</td></tr><tr><td>102.65</td><td>-6.6</td><td>5.00</td><td>32.91</td><td>112.20</td></tr><tr><td>102.65</td><td>-6.6</td><td>5.00</td><td>32.91</td><td>112.20</td></tr><tr><td>102.61</td><td>-6.5</td><td>5.00</td><td>32.31</td><td>113.24</td></tr><tr><td>102.61</td><td>-6.5</td><td>5.00</td><td>32.31</td><td>113.24</td></tr><tr><td>102.57</td><td>-6.3</td><td>5.00</td><td>31.70</td><td>114.27</td></tr></table>							105.45	-15.3	0.91	13.96	16.68	105.10	-14.2	2.44	34.74	34.73	105.05	-14.1	2.44	34.35	37.31	105.05	-14.1	2.65	37.32	37.31	105.00	-13.9	2.65	36.90	39.89	105.00	-13.9	2.87	39.89	39.89	104.95	-13.7	2.87	39.43	41.23	104.79	-13.3	3.41	45.26	45.26	104.74	-13.1	3.41	44.70	46.60	104.74	-13.1	3.56	46.60	46.60	104.69	-12.9	3.56	46.07	47.81	104.46	-12.2	4.41	53.89	53.89	104.41	-12.1	4.41	53.24	55.11	104.41	-12.1	4.57	55.11	55.11	104.36	-11.9	4.57	54.37	56.43	104.10	-11.1	5.00	55.44	63.08	104.05	-10.9	5.00	54.63	64.41	104.05	-10.9	5.00	54.63	64.41	104.00	-10.8	5.00	53.82	65.74	103.79	-10.1	5.00	50.59	71.05	103.74	-10.0	5.00	49.78	72.38	103.74	-10.0	5.00	49.78	84.11	103.74	-9.9	5.00	49.74	84.18	103.74	-9.9	5.00	49.74	84.18	103.69	-9.8	5.00	49.04	85.33	103.65	-9.7	5.00	48.34	86.49	103.60	-9.5	5.00	47.64	87.64	103.60	-9.5	5.00	47.64	87.64	103.54	-9.3	5.00	46.67	89.24	103.54	-9.3	5.00	46.67	89.24	103.48	-9.1	5.00	45.70	90.84	103.48	-9.1	5.00	45.70	90.84	103.47	-9.1	5.00	45.51	91.16	103.47	-9.1	5.00	45.51	91.16	103.41	-8.9	5.00	44.63	92.60	103.41	-8.9	5.00	44.63	92.60	103.35	-8.8	5.00	43.76	94.05	103.35	-8.8	5.00	43.76	94.05	103.33	-8.7	5.00	43.30	94.81	103.33	-8.7	5.00	43.30	94.81	103.28	-8.5	5.00	42.57	96.03	103.28	-8.5	5.00	42.57	96.03	103.23	-8.4	5.00	41.83	97.25	103.23	-8.4	5.00	41.83	97.25	103.22	-8.3	5.00	41.61	97.63	103.22	-8.3	5.00	41.61	97.63	103.16	-8.2	5.00	40.76	99.04	103.16	-8.2	5.00	40.76	99.04	103.11	-8.0	5.00	39.91	100.46	103.11	-8.0	5.00	39.91	100.46	103.04	-7.8	5.00	38.95	102.06	103.04	-7.8	5.00	38.95	102.06	102.98	-7.6	5.00	37.99	103.66	102.98	-7.6	5.00	37.99	103.66	102.97	-7.5	5.00	37.73	104.09	102.97	-7.5	5.00	37.73	104.09	102.95	-7.5	5.00	37.46	104.54	102.95	-7.5	5.00	37.46	104.54	102.90	-7.4	5.00	36.77	105.70	102.90	-7.4	5.00	36.77	105.70	102.86	-7.2	5.00	36.08	106.86	102.86	-7.2	5.00	36.08	106.86	102.81	-7.1	5.00	35.36	108.07	102.72	-6.8	5.00	33.93	110.49	102.67	-6.6	5.00	33.22	111.69	102.67	-6.6	5.00	33.22	111.69	102.65	-6.6	5.00	32.91	112.20	102.65	-6.6	5.00	32.91	112.20	102.61	-6.5	5.00	32.31	113.24	102.61	-6.5	5.00	32.31	113.24	102.57	-6.3	5.00	31.70	114.27
105.45	-15.3	0.91	13.96	16.68																																																																																																																																																																																																																																																																																																																																																																					
105.10	-14.2	2.44	34.74	34.73																																																																																																																																																																																																																																																																																																																																																																					
105.05	-14.1	2.44	34.35	37.31																																																																																																																																																																																																																																																																																																																																																																					
105.05	-14.1	2.65	37.32	37.31																																																																																																																																																																																																																																																																																																																																																																					
105.00	-13.9	2.65	36.90	39.89																																																																																																																																																																																																																																																																																																																																																																					
105.00	-13.9	2.87	39.89	39.89																																																																																																																																																																																																																																																																																																																																																																					
104.95	-13.7	2.87	39.43	41.23																																																																																																																																																																																																																																																																																																																																																																					
104.79	-13.3	3.41	45.26	45.26																																																																																																																																																																																																																																																																																																																																																																					
104.74	-13.1	3.41	44.70	46.60																																																																																																																																																																																																																																																																																																																																																																					
104.74	-13.1	3.56	46.60	46.60																																																																																																																																																																																																																																																																																																																																																																					
104.69	-12.9	3.56	46.07	47.81																																																																																																																																																																																																																																																																																																																																																																					
104.46	-12.2	4.41	53.89	53.89																																																																																																																																																																																																																																																																																																																																																																					
104.41	-12.1	4.41	53.24	55.11																																																																																																																																																																																																																																																																																																																																																																					
104.41	-12.1	4.57	55.11	55.11																																																																																																																																																																																																																																																																																																																																																																					
104.36	-11.9	4.57	54.37	56.43																																																																																																																																																																																																																																																																																																																																																																					
104.10	-11.1	5.00	55.44	63.08																																																																																																																																																																																																																																																																																																																																																																					
104.05	-10.9	5.00	54.63	64.41																																																																																																																																																																																																																																																																																																																																																																					
104.05	-10.9	5.00	54.63	64.41																																																																																																																																																																																																																																																																																																																																																																					
104.00	-10.8	5.00	53.82	65.74																																																																																																																																																																																																																																																																																																																																																																					
103.79	-10.1	5.00	50.59	71.05																																																																																																																																																																																																																																																																																																																																																																					
103.74	-10.0	5.00	49.78	72.38																																																																																																																																																																																																																																																																																																																																																																					
103.74	-10.0	5.00	49.78	84.11																																																																																																																																																																																																																																																																																																																																																																					
103.74	-9.9	5.00	49.74	84.18																																																																																																																																																																																																																																																																																																																																																																					
103.74	-9.9	5.00	49.74	84.18																																																																																																																																																																																																																																																																																																																																																																					
103.69	-9.8	5.00	49.04	85.33																																																																																																																																																																																																																																																																																																																																																																					
103.65	-9.7	5.00	48.34	86.49																																																																																																																																																																																																																																																																																																																																																																					
103.60	-9.5	5.00	47.64	87.64																																																																																																																																																																																																																																																																																																																																																																					
103.60	-9.5	5.00	47.64	87.64																																																																																																																																																																																																																																																																																																																																																																					
103.54	-9.3	5.00	46.67	89.24																																																																																																																																																																																																																																																																																																																																																																					
103.54	-9.3	5.00	46.67	89.24																																																																																																																																																																																																																																																																																																																																																																					
103.48	-9.1	5.00	45.70	90.84																																																																																																																																																																																																																																																																																																																																																																					
103.48	-9.1	5.00	45.70	90.84																																																																																																																																																																																																																																																																																																																																																																					
103.47	-9.1	5.00	45.51	91.16																																																																																																																																																																																																																																																																																																																																																																					
103.47	-9.1	5.00	45.51	91.16																																																																																																																																																																																																																																																																																																																																																																					
103.41	-8.9	5.00	44.63	92.60																																																																																																																																																																																																																																																																																																																																																																					
103.41	-8.9	5.00	44.63	92.60																																																																																																																																																																																																																																																																																																																																																																					
103.35	-8.8	5.00	43.76	94.05																																																																																																																																																																																																																																																																																																																																																																					
103.35	-8.8	5.00	43.76	94.05																																																																																																																																																																																																																																																																																																																																																																					
103.33	-8.7	5.00	43.30	94.81																																																																																																																																																																																																																																																																																																																																																																					
103.33	-8.7	5.00	43.30	94.81																																																																																																																																																																																																																																																																																																																																																																					
103.28	-8.5	5.00	42.57	96.03																																																																																																																																																																																																																																																																																																																																																																					
103.28	-8.5	5.00	42.57	96.03																																																																																																																																																																																																																																																																																																																																																																					
103.23	-8.4	5.00	41.83	97.25																																																																																																																																																																																																																																																																																																																																																																					
103.23	-8.4	5.00	41.83	97.25																																																																																																																																																																																																																																																																																																																																																																					
103.22	-8.3	5.00	41.61	97.63																																																																																																																																																																																																																																																																																																																																																																					
103.22	-8.3	5.00	41.61	97.63																																																																																																																																																																																																																																																																																																																																																																					
103.16	-8.2	5.00	40.76	99.04																																																																																																																																																																																																																																																																																																																																																																					
103.16	-8.2	5.00	40.76	99.04																																																																																																																																																																																																																																																																																																																																																																					
103.11	-8.0	5.00	39.91	100.46																																																																																																																																																																																																																																																																																																																																																																					
103.11	-8.0	5.00	39.91	100.46																																																																																																																																																																																																																																																																																																																																																																					
103.04	-7.8	5.00	38.95	102.06																																																																																																																																																																																																																																																																																																																																																																					
103.04	-7.8	5.00	38.95	102.06																																																																																																																																																																																																																																																																																																																																																																					
102.98	-7.6	5.00	37.99	103.66																																																																																																																																																																																																																																																																																																																																																																					
102.98	-7.6	5.00	37.99	103.66																																																																																																																																																																																																																																																																																																																																																																					
102.97	-7.5	5.00	37.73	104.09																																																																																																																																																																																																																																																																																																																																																																					
102.97	-7.5	5.00	37.73	104.09																																																																																																																																																																																																																																																																																																																																																																					
102.95	-7.5	5.00	37.46	104.54																																																																																																																																																																																																																																																																																																																																																																					
102.95	-7.5	5.00	37.46	104.54																																																																																																																																																																																																																																																																																																																																																																					
102.90	-7.4	5.00	36.77	105.70																																																																																																																																																																																																																																																																																																																																																																					
102.90	-7.4	5.00	36.77	105.70																																																																																																																																																																																																																																																																																																																																																																					
102.86	-7.2	5.00	36.08	106.86																																																																																																																																																																																																																																																																																																																																																																					
102.86	-7.2	5.00	36.08	106.86																																																																																																																																																																																																																																																																																																																																																																					
102.81	-7.1	5.00	35.36	108.07																																																																																																																																																																																																																																																																																																																																																																					
102.72	-6.8	5.00	33.93	110.49																																																																																																																																																																																																																																																																																																																																																																					
102.67	-6.6	5.00	33.22	111.69																																																																																																																																																																																																																																																																																																																																																																					
102.67	-6.6	5.00	33.22	111.69																																																																																																																																																																																																																																																																																																																																																																					
102.65	-6.6	5.00	32.91	112.20																																																																																																																																																																																																																																																																																																																																																																					
102.65	-6.6	5.00	32.91	112.20																																																																																																																																																																																																																																																																																																																																																																					
102.61	-6.5	5.00	32.31	113.24																																																																																																																																																																																																																																																																																																																																																																					
102.61	-6.5	5.00	32.31	113.24																																																																																																																																																																																																																																																																																																																																																																					
102.57	-6.3	5.00	31.70	114.27																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage O1 Schnitt 6L			Seite Anlage O1/7																																																																																																																																																																																																																																																																																																																																																																				
Kapitel:		1 LF 1 (BS-T)			Archiv Nr.: 117																																																																																																																																																																																																																																																																																																																																																																				
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> 102.57 -6.3 5.00 31.70 114.27  102.55 -6.3 5.00 31.39 114.80  102.55 -6.3 32.51 204.06 204.05  102.51 -6.1 32.51 199.71 207.10  102.42 -5.9 36.28 213.22 213.21  102.37 -5.7 36.28 208.41 216.26  102.37 -5.7 37.65 216.28 216.26  102.32 -5.6 37.65 210.24 219.96  102.16 -5.1 45.25 231.08 231.06  102.11 -4.9 45.25 223.92 234.76  102.11 -4.9 47.45 234.78 234.76  102.08 -4.9 47.45 230.67 236.79  102.08 -4.9 48.71 236.81 236.79  102.03 -4.7 48.71 229.72 240.21  101.93 -4.4 50.00 221.34 247.06  101.88 -4.3 50.00 214.14 250.48  101.88 -4.3 50.00 214.14 250.48  101.83 -4.1 50.00 206.97 253.90  101.83 -4.1 50.00 206.97 253.90  101.78 -4.0 50.00 199.82 257.32  101.78 -4.0 50.00 199.82 257.32  101.73 -3.9 50.00 192.95 260.63  101.68 -3.7 50.00 186.09 263.93  101.64 -3.6 50.00 179.26 267.24  101.64 -3.6 50.00 179.26 267.24  101.58 -3.4 50.00 171.83 270.85  101.22 -2.4 50.00 120.56 296.11  101.16 -2.3 50.00 113.34 299.72  101.16 -2.3 50.00 113.34 299.72  101.11 -2.1 50.00 106.13 303.33  101.11 -2.1 50.00 106.13 303.33  101.06 -2.0 50.00 98.95 306.94  101.06 -2.0 50.00 98.95 306.94  101.01 -1.8 50.00 91.79 310.55  100.75 -1.1 50.00 56.27 328.59  100.69 -1.0 50.00 49.22 332.20  100.69 -1.0 50.00 49.22 332.20  100.65 -0.9 50.00 42.61 335.58  100.11 0.6 50.00 -29.42 372.80  100.06 0.7 50.00 -35.94 376.18  100.06 0.7 50.00 -35.94 376.18  100.01 0.8 50.00 -42.45 379.56  99.96 1.0 50.00 -48.96 382.95  99.91 1.1 50.00 -55.47 386.33  99.91 1.1 50.00 -55.47 386.33  99.86 1.2 50.00 -62.38 389.92  99.65 1.8 50.00 -90.00 404.29  99.60 1.9 50.00 -96.90 407.88 </div> </div> <div> <p>Verdrehung (Theoretischer Fußpunkt) [°]  phi,[g+q],k: -0.15216407  Theoretischer Fußpunkt = 99.599 m</p> <p>Einbindetiefe tg = 6.15 m  Profillänge = 6.50 m</p> </div>		
Schnitt: Anlage O1 Schnitt 6L	Seite Anlage O1/8	
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>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 123.00 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 46.22 \text{ kN/m}</math> (<math>E_{ah,k} = 272.59 \text{ kN/m}</math>) <math>B_{v,k} = 157.77</math> Summe <math>V_{,k} = 11.44 \text{ kN/m}</math> (Druck)  Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.48 bis 96.96 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math>  Mantelreibung <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>105.75</td><td>105.55</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.55</td><td>103.74</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>103.74</td><td>102.55</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.55</td><td>99.60</td><td>55.00</td><td>s3: Flusssandes, -sand</td></tr></tbody></table> Mantelfläche bis 99.60 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 162.25 / 1.40 = 115.89 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 980.94 \text{ kN/m}</math>  Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 147.60 - 0.00 + 53.15 + 0.00 = 200.75 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{,d} / R_{,d} = 200.75 / 980.94 = 0.20</math>  Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.60	55.00	s3: Flusssandes, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.60	55.00	s3: Flusssandes, -sand																			
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/9																				
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 119																				
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>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: 02_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 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 O1 Schnitt 6L		Seite Anlage 01/10
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 01110
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 automatisch und Fuß gebettet  
Profillänge = 9.20 m

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

Ausnutzungsgrad mue = 493.068 / 499.436 = 0.987  
Bettungslager Bh,d = 493.068 kN/m  
Erdwiderstand Eph,d = 499.436 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	-186.76	-161.83	-161.83	-96.35	6.900E+4	2.100E+7	-206.34 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]
-1.00	105.00	-16.0	0.0	-190.93	0.00	0.00
-0.90	105.00	-16.3	0.0	-190.93	0.00	0.00
-0.90	105.00	-16.3	0.0	-190.93	0.00	0.00
-0.80	105.00	-16.6	0.0	-190.93	0.00	0.00
-0.70	105.00	-16.8	0.0	-190.93	0.00	0.00
-0.60	105.00	-17.1	0.0	-190.93	0.00	0.00
-0.50	105.00	-17.4	0.0	-190.93	0.00	0.00
-0.40	105.00	-17.7	0.0	-190.93	0.00	0.00
-0.30	105.00	-17.9	0.0	-190.93	0.00	0.00
-0.20	105.00	-18.2	0.0	-190.93	0.00	0.00
-0.10	105.00	-18.5	0.0	-190.93	0.00	0.00
0.00	105.00	-18.8	0.0	-190.93	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\01\_BS 6\_LF1.vrb  
eingeliesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	105.00	-0.0139

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 O1	Schnitt 6L	Seite Anlage 01/11
Kapitel: 2	LF 2 (BS-T)	Archiv Nr.: 01/11
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 &lt;&gt; 0.0.</div> <div>Ersatzerddruck-Beiwert kah wird nur auf ständige Lasten angewendet.</div> <div>bestimmt nach:</div> <div>Wandreibung angepasst.</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>105.55</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>Aktive Erddruckkoordinaten ([g+q],k)</div> <div>mit Zusatzdrücke</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>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>99.057</td><td>47.638</td><td>51.138</td><td>5.00</td><td>5.00</td></tr><tr><td>99.057</td><td>98.053</td><td>51.138</td><td>55.256</td><td>5.00</td><td>5.00</td></tr><tr><td>98.053</td><td>97.100</td><td>55.256</td><td>59.168</td><td>5.00</td><td>5.00</td></tr><tr><td>97.100</td><td>96.899</td><td>59.168</td><td>59.992</td><td>5.00</td><td>5.00</td></tr><tr><td>96.899</td><td>80.000</td><td>59.992</td><td>129.303</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>106.10</td><td>102.55</td></tr></table>			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	99.057	47.638	51.138	5.00	5.00	99.057	98.053	51.138	55.256	5.00	5.00	98.053	97.100	55.256	59.168	5.00	5.00	97.100	96.899	59.168	59.992	5.00	5.00	96.899	80.000	59.992	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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[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	99.057	47.638	51.138	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
99.057	98.053	51.138	55.256	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
98.053	97.100	55.256	59.168	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
97.100	96.899	59.168	59.992	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
96.899	80.000	59.992	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																																																																																																																																																																																																																																																																																																																																									
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/12																																																																																																																																																																																																																																																																																																																																										
Kapitel: 2 LF 2 (BS-T)		Archiv Nr. 1112																																																																																																																																																																																																																																																																																																																																										
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] 102.57 102.55 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 -148.45 99.06 98.05 -148.45 -191.12 98.05 97.10 -191.12 -231.66 97.10 96.90 -231.66 -240.19 96.90 80.00 -240.19 -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 -190.9 105.00 -23.9 144.6 -24.9 104.74 -29.6 132.4 11.1 104.41 -36.8 117.0 52.3 104.41 -36.8 -5.0 52.3 104.05 -44.6 -17.7 48.1 103.74 -51.4 -27.9 41.0 103.60 -55.3 -32.5 36.9 103.48 -58.9 -36.6 32.6 103.47 -59.3 -37.0 32.1 103.35 -62.5 -40.7 27.8 103.33 -63.4 -41.7 26.6 103.23 -66.2 -44.8 22.5 103.22 -66.6 -45.3 21.8 103.11 -69.8 -49.0 16.6 103.10 -69.9 -49.2 16.3 102.98 -73.4 -53.1 10.3 102.97 -73.9 -53.6 9.4 102.95 -74.4 -54.2 8.5 102.86 -77.0 -57.2 3.5 102.67 -82.4 -63.4 -7.8 102.65 -83.0 -64.1 -9.1 102.57 -85.3 -66.7 -14.3 102.55 -85.9 -67.4 -15.7 102.37 -91.0 -84.1 -29.1 102.11 -94.4 -104.5 -54.6 102.08 -94.6 -106.3 -57.7 101.83 -95.6 -117.7 -85.5 101.78 -95.5 -119.2 -91.4 101.64 -94.9 -121.6 -108.7 101.16 -88.6 -112.4 -164.7 101.06 -86.2 -107.0 -176.2 100.69 -75.3 -80.7 -210.9</div>		
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 01113
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>100.06 -46.3 -9.5 -241.1</div><div>100.01 -43.5 -2.8 -241.4</div><div>99.91 -37.8 11.1 -241.0</div><div>99.06 0.4 100.6 -187.6</div><div>98.05 8.3 108.5 -74.4</div><div>97.10 -3.7 27.6 -2.8</div><div>96.90 -3.0 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</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>-0.4</div><div>0.0</div><div></div></div><div><div>105.55</div><div>-10.4</div><div>-19.5</div><div>-5.4</div><div></div></div><div><div>105.50</div><div>-11.4</div><div>-21.3</div><div>-6.4</div><div></div></div><div><div>105.05</div><div>-19.9</div><div>-38.2</div><div>-19.7</div><div></div></div><div><div>105.00</div><div>-20.8</div><div>-40.2</div><div>-21.6</div><div>-161.8</div></div><div><div>105.00</div><div>-20.8</div><div>121.6</div><div>-21.6</div><div></div></div><div><div>104.74</div><div>-25.7</div><div>111.1</div><div>8.6</div><div></div></div><div><div>104.41</div><div>-32.0</div><div>97.8</div><div>43.1</div><div></div></div><div><div>104.41</div><div>-32.0</div><div>-3.9</div><div>43.1</div><div></div></div><div><div>104.05</div><div>-38.8</div><div>-14.9</div><div>39.6</div><div></div></div><div><div>103.74</div><div>-44.7</div><div>-23.7</div><div>33.6</div><div></div></div><div><div>103.60</div><div>-48.1</div><div>-27.6</div><div>30.1</div><div></div></div><div><div>103.48</div><div>-51.2</div><div>-31.2</div><div>26.4</div><div></div></div><div><div>103.47</div><div>-51.6</div><div>-31.6</div><div>26.0</div><div></div></div><div><div>103.35</div><div>-54.4</div><div>-34.8</div><div>22.3</div><div></div></div><div><div>103.33</div><div>-55.1</div><div>-35.6</div><div>21.3</div><div></div></div><div><div>103.23</div><div>-57.5</div><div>-38.3</div><div>17.8</div><div></div></div><div><div>103.22</div><div>-57.9</div><div>-38.7</div><div>17.2</div><div></div></div><div><div>103.11</div><div>-60.7</div><div>-41.9</div><div>12.8</div><div></div></div><div><div>103.10</div><div>-60.8</div><div>-42.1</div><div>12.5</div><div></div></div><div><div>102.98</div><div>-63.8</div><div>-45.4</div><div>7.4</div><div></div></div><div><div>102.97</div><div>-64.2</div><div>-45.9</div><div>6.6</div><div></div></div><div><div>102.95</div><div>-64.7</div><div>-46.4</div><div>5.8</div><div></div></div><div><div>102.86</div><div>-66.9</div><div>-49.0</div><div>1.5</div><div></div></div><div><div>102.67</div><div>-71.7</div><div>-54.4</div><div>-8.2</div><div></div></div><div><div>102.65</div><div>-72.2</div><div>-54.9</div><div>-9.2</div><div></div></div><div><div>102.57</div><div>-74.2</div><div>-57.2</div><div>-13.7</div><div></div></div><div><div>102.55</div><div>-74.7</div><div>-57.8</div><div>-14.9</div><div></div></div><div><div>102.37</div><div>-79.1</div><div>-72.3</div><div>-26.4</div><div></div></div><div><div>102.11</div><div>-82.1</div><div>-90.0</div><div>-48.3</div><div></div></div><div><div>102.08</div><div>-82.3</div><div>-91.5</div><div>-51.0</div><div></div></div><div><div>101.83</div><div>-83.1</div><div>-101.4</div><div>-75.0</div><div></div></div><div><div>101.78</div><div>-83.1</div><div>-102.7</div><div>-80.1</div><div></div></div><div><div>101.64</div><div>-82.6</div><div>-104.8</div><div>-95.0</div><div></div></div><div><div>101.16</div><div>-77.1</div><div>-96.9</div><div>-143.3</div><div></div></div><div><div>101.06</div><div>-75.1</div><div>-92.3</div><div>-153.2</div><div></div></div><div><div>100.69</div><div>-65.7</div><div>-69.5</div><div>-183.1</div><div></div></div><div><div>100.06</div><div>-40.6</div><div>-8.0</div><div>-209.0</div><div></div></div><div><div>100.01</div><div>-38.2</div><div>-2.2</div><div>-209.3</div><div></div></div><div><div>99.91</div><div>-33.2</div><div>9.8</div><div>-208.9</div><div></div></div><div><div>99.06</div><div>-0.1</div><div>87.2</div><div>-162.5</div><div></div></div><div><div>98.05</div><div>6.7</div><div>93.9</div><div>-64.4</div><div></div></div><div><div>97.10</div><div>-3.8</div><div>23.9</div><div>-2.5</div><div></div></div><div><div>96.90</div><div>-3.2</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>-0.4</div><div>0.0</div><div></div></div><div><div>105.55</div><div>-10.4</div><div>-19.5</div><div>-5.4</div><div></div></div><div><div>105.50</div><div>-11.4</div><div>-21.3</div><div>-6.4</div><div></div></div><div><div>105.05</div><div>-19.9</div><div>-38.2</div><div>-19.7</div><div></div></div><div><div>105.00</div><div>-20.8</div><div>-40.2</div><div>-21.6</div><div>-161.8</div></div><div><div>105.00</div><div>-20.8</div><div>121.6</div><div>-21.6</div><div></div></div><div><div>104.74</div><div>-25.7</div><div>111.1</div><div>8.6</div><div></div></div><div><div>104.41</div><div>-32.0</div><div>97.8</div><div>43.1</div><div></div></div><div><div>104.41</div><div>-32.0</div><div>-3.9</div><div>43.1</div><div></div></div><div><div>104.05</div><div>-38.8</div><div>-14.9</div><div>39.6</div><div></div></div></div></div>		
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/14
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 1114
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																																																																																																																																																																																																																																																																																																																																																										
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<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>-83.3</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	-23.7	33.6	103.60	-48.1	-27.6	30.1	103.48	-51.2	-31.2	26.4	103.47	-51.6	-31.6	26.0	103.35	-54.4	-34.8	22.3	103.33	-55.1	-35.6	21.3	103.23	-57.5	-38.3	17.8	103.22	-57.9	-38.7	17.2	103.11	-60.7	-41.9	12.8	103.10	-60.8	-42.1	12.5	102.98	-63.8	-45.4	7.4	102.97	-64.2	-45.9	6.6	102.95	-64.7	-46.4	5.8	102.86	-66.9	-49.0	1.5	102.67	-71.7	-54.4	-8.2	102.65	-72.2	-54.9	-9.2	102.57	-74.2	-57.2	-13.7	102.55	-74.7	-57.8	-14.9	102.37	-79.1	-72.3	-26.4	102.11	-82.1	-90.0	-48.3	102.08	-82.3	-91.5	-51.0	101.83	-83.1	-101.4	-75.0	101.78	-83.1	-102.7	-80.1	101.64	-82.6	-104.8	-95.0	101.16	-77.1	-96.9	-143.3	101.06	-75.1	-92.3	-153.2	100.69	-65.7	-69.5	-183.1	100.06	-40.6	-8.0	-209.0	100.01	-38.2	-2.2	-209.3	99.91	-33.2	9.8	-208.9	99.06	-0.1	87.2	-162.5	98.05	6.7	93.9	-64.4	97.10	-3.8	23.9	-2.5	96.90	-3.2	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			105.00	0.0	0.0	0.0	-83.3		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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<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>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-18.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-17.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-17.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-16.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-16.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-16.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.65</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.11</td><td>-11.4</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	97.10	0.0	0.0	0.0	96.90	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-19.0	-	-	-	106.09	-19.0	-	-	-	106.09	-19.0	-	-	-	106.04	-18.9	-	-	-	105.60	-17.8	-	-	-	105.55	-17.6	-	-	-	105.55	-17.6	-	-	-	105.50	-17.5	-	-	-	105.50	-17.5	-	-	-	105.45	-17.4	-	-	-	105.10	-16.5	-	-	-	105.05	-16.4	-	-	-	105.05	-16.4	-	-	-	105.00	-16.3	-	-	-	105.00	-16.3	-	-	-	104.95	-16.1	-	-	-	104.79	-15.7	-	-	-	104.74	-15.6	-	-	-	104.74	-15.6	-	-	-	104.69	-15.5	-	-	-	104.46	-14.9	-	-	-	104.41	-14.8	-	-	-	104.41	-14.8	-	-	-	104.36	-14.7	-	-	-	104.10	-14.0	-	-	-	104.05	-13.9	-	-	-	104.05	-13.9	-	-	-	104.00	-13.7	-	-	-	103.79	-13.2	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.65	-12.8	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.54	-12.6	-	-	-	103.48	-12.4	-	-	-	103.48	-12.4	-	-	-	103.47	-12.4	-	-	-	103.47	-12.4	-	-	-	103.41	-12.2	-	-	-	103.41	-12.2	-	-	-	103.35	-12.1	-	-	-	103.35	-12.1	-	-	-	103.33	-12.0	-	-	-	103.33	-12.0	-	-	-	103.28	-11.9	-	-	-	103.28	-11.9	-	-	-	103.23	-11.8	-	-	-	103.23	-11.8	-	-	-	103.22	-11.7	-	-	-	103.22	-11.7	-	-	-	103.16	-11.6	-	-	-	103.16	-11.6	-	-	-	103.11	-11.4	-	-	-
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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>103.11</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-11.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-11.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.90</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.90</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.86</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.86</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.81</div> <div>-10.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.72</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.67</div> <div>-10.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.67</div> <div>-10.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-10.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-10.3</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-10.0</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-10.0</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.51</div> <div>-9.9</div> <div>0.00</div> <div>0.00</div> <div>3.05</div> </div> <div> <div>102.42</div> <div>-9.7</div> <div>0.95</div> <div>9.16</div> <div>9.16</div> </div> <div> <div>102.37</div> <div>-9.6</div> <div>0.95</div> <div>9.05</div> <div>12.22</div> </div> <div> <div>102.37</div> <div>-9.6</div> <div>1.28</div> <div>12.22</div> <div>12.22</div> </div> <div> <div>102.32</div> <div>-9.4</div> <div>1.28</div> <div>12.04</div> <div>15.92</div> </div> <div> <div>102.16</div> <div>-9.0</div> <div>3.00</div> <div>27.02</div> <div>27.02</div> </div> <div> <div>102.11</div> <div>-8.9</div> <div>3.00</div> <div>26.60</div> <div>30.72</div> </div> <div> <div>102.11</div> <div>-8.9</div> <div>3.47</div> <div>30.72</div> <div>30.72</div> </div> <div> <div>102.08</div> <div>-8.8</div> <div>3.47</div> <div>30.46</div> <div>32.75</div> </div> <div> <div>102.08</div> <div>-8.8</div> <div>3.73</div> <div>32.75</div> <div>32.75</div> </div> <div> <div>102.03</div> <div>-8.7</div> <div>3.73</div> <div>32.27</div> <div>36.17</div> </div> <div> <div>101.88</div> <div>-8.3</div> <div>5.61</div> <div>46.43</div> <div>46.43</div> </div> <div> <div>101.83</div> <div>-8.2</div> <div>5.61</div> <div>45.73</div> <div>49.85</div> </div> <div> <div>101.83</div> <div>-8.2</div> <div>6.11</div> <div>49.86</div> <div>49.85</div> </div> <div> <div>101.78</div> <div>-8.0</div> <div>6.11</div> <div>49.09</div> <div>53.28</div> </div> <div> <div>101.78</div> <div>-8.0</div> <div>6.63</div> <div>53.28</div> <div>53.28</div> </div> <div> <div>101.73</div> <div>-7.9</div> <div>6.63</div> <div>52.48</div> <div>56.58</div> </div> <div> <div>101.68</div> <div>-7.8</div> <div>7.69</div> <div>59.89</div> <div>59.89</div> </div> <div> <div>101.64</div> <div>-7.7</div> <div>7.69</div> <div>58.97</div> <div>63.20</div> </div> <div> <div>101.64</div> <div>-7.7</div> <div>8.24</div> <div>63.20</div> <div>63.20</div> </div> <div> <div>101.58</div> <div>-7.5</div> <div>8.24</div> <div>62.12</div> <div>66.80</div> </div> <div> <div>101.22</div> <div>-6.6</div> <div>13.87</div> <div>92.07</div> <div>92.06</div> </div> <div> <div>101.16</div> <div>-6.5</div> <div>13.87</div> <div>90.32</div> <div>95.67</div> </div> <div> <div>101.16</div> <div>-6.5</div> <div>14.69</div> <div>95.68</div> <div>95.67</div> </div> <div> <div>101.11</div> <div>-6.4</div> <div>14.69</div> <div>93.83</div> <div>99.28</div> </div> <div> <div>101.11</div> <div>-6.4</div> <div>15.55</div> <div>99.29</div> <div>99.28</div> </div> <div> <div>101.06</div> <div>-6.3</div> <div>15.55</div> <div>97.34</div> <div>102.89</div> </div> <div> <div>101.06</div> <div>-6.3</div> <div>16.44</div> <div>102.89</div> <div>102.89</div> </div> <div> <div>101.01</div> <div>-6.1</div> <div>16.44</div> <div>100.85</div> <div>106.50</div> </div> <div> <div>100.75</div> <div>-5.5</div> <div>22.54</div> <div>124.55</div> <div>124.54</div> </div> <div> <div>100.69</div> <div>-5.4</div> <div>22.54</div> <div>121.85</div> <div>128.15</div> </div> <div> <div>100.69</div> <div>-5.4</div> <div>23.70</div> <div>128.16</div> <div>128.15</div> </div> <div> <div>100.65</div> <div>-5.3</div> <div>23.70</div> <div>125.52</div> <div>131.54</div> </div> <div> <div>100.11</div> <div>-4.1</div> <div>40.92</div> <div>168.76</div> <div>168.75</div> </div> <div> <div>100.06</div> <div>-4.0</div> <div>40.92</div> <div>164.60</div> <div>172.13</div> </div> <div> <div>100.06</div> <div>-4.0</div> <div>42.80</div> <div>172.14</div> <div>172.13</div> </div> <div> <div>100.01</div> <div>-3.9</div> <div>42.80</div> <div>167.83</div> <div>175.52</div> </div> <div> <div>100.01</div> <div>-3.9</div> <div>44.76</div> <div>175.52</div> <div>175.52</div> </div> <div> <div>99.96</div> <div>-3.8</div> <div>44.76</div> <div>171.06</div> <div>178.90</div> </div> <div> <div>99.96</div> <div>-3.8</div> <div>46.81</div> <div>178.91</div> <div>178.90</div> </div> <div> <div>99.91</div> <div>-3.7</div> <div>46.81</div> <div>174.27</div> <div>182.28</div> </div> <div> <div>99.91</div> <div>-3.7</div> <div>48.97</div> <div>182.29</div> <div>182.28</div> </div> <div> <div>99.86</div> <div>-3.6</div> <div>48.97</div> <div>177.37</div> <div>185.75</div> </div> <div> <div>99.11</div> <div>-2.2</div> <div>50.00</div> <div>110.82</div> <div>237.76</div> </div>		
Schnitt:	Anlage O1 Schnitt 6L	Seite Anlage O1/17
Kapitel:	2 LF 2 (BS-T)	Archiv Nr.: 01117
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>-2.1</td><td>50.00</td><td>106.45</td><td>241.22</td></tr><tr><td>99.06</td><td>-2.1</td><td>50.00</td><td>106.45</td><td>241.22</td></tr><tr><td>99.01</td><td>-2.0</td><td>50.00</td><td>102.11</td><td>244.69</td></tr><tr><td>98.10</td><td>-0.6</td><td>50.00</td><td>28.83</td><td>307.10</td></tr><tr><td>98.05</td><td>-0.5</td><td>50.00</td><td>24.95</td><td>310.57</td></tr><tr><td>98.05</td><td>-0.5</td><td>50.00</td><td>24.95</td><td>310.57</td></tr><tr><td>98.00</td><td>-0.4</td><td>50.00</td><td>21.09</td><td>314.03</td></tr><tr><td>97.15</td><td>0.9</td><td>50.00</td><td>-43.27</td><td>372.97</td></tr><tr><td>97.10</td><td>0.9</td><td>50.00</td><td>-47.02</td><td>376.44</td></tr><tr><td>97.10</td><td>0.9</td><td>50.00</td><td>-47.02</td><td>376.44</td></tr><tr><td>97.05</td><td>1.0</td><td>50.00</td><td>-50.77</td><td>379.91</td></tr><tr><td>96.95</td><td>1.2</td><td>50.00</td><td>-58.28</td><td>386.84</td></tr><tr><td>96.90</td><td>1.2</td><td>50.00</td><td>-62.03</td><td>390.31</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08565137 Theoretischer Fußpunkt = 96.899 m</p> <p>Einbindetiefe tg = 5.65 m Profillänge = 9.20 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_{k} = 174.09 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 75.44 \text{ kN/m}</math> (<math>E_{ah,k} = 419.62 \text{ kN/m}</math>) <math>B_{v,k} = 169.56</math> Summe <math>V_{k} = 79.97 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 97.78 bis 94.26 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung von bis <math>q_{s,k} [\text{kN/m}^2]</math> Bezeichnung 102.55 96.90 55.00 s3: Flussskies, -sand Mantelfläche bis 96.90 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 310.75 / 1.40 = 221.96 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 1087.01 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 208.91 - 0.00 + 86.76 + 0.00 = 295.66 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{d} / R_{d} = 295.66 / 1087.01 = 0.27</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			99.06	-2.1	50.00	106.45	241.22	99.06	-2.1	50.00	106.45	241.22	99.01	-2.0	50.00	102.11	244.69	98.10	-0.6	50.00	28.83	307.10	98.05	-0.5	50.00	24.95	310.57	98.05	-0.5	50.00	24.95	310.57	98.00	-0.4	50.00	21.09	314.03	97.15	0.9	50.00	-43.27	372.97	97.10	0.9	50.00	-47.02	376.44	97.10	0.9	50.00	-47.02	376.44	97.05	1.0	50.00	-50.77	379.91	96.95	1.2	50.00	-58.28	386.84	96.90	1.2	50.00	-62.03	390.31
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Schnitt: Anlage O1 Schnitt 6L		Seite Anlage 01/18																																																																	
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 22040025																																																																	
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: 03\_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 O1	Schnitt 6L	Seite Anlage 01/19
Kapitel:	3	LF 3 (BS-T)	Archiv Nr.: 01/19
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

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 automatisch und Fuß gebettet

Profillänge = 9.00 m

Bettungsmodule

von bis ks(oben) ks(unten)

[mNHN] [mNHN] [MN/m³] [MN/m³]

102.55 80.00 50.000 50.000

Ausnutzungsgrad  $\mu_e = 437.645 / 439.406 = 0.996$

Bettungslager  $B_{h,d} = 437.645 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 439.406 \text{ kN/m}$

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	-239.71	-206.61	-206.61	-164.74	3.900E+7	2.100E+7	-263.43

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	-15.0	0.0	-245.84	0.00	0.00
-7.47	103.72	-15.0	0.0	-245.84	0.00	0.00
-7.47	103.72	-15.0	0.0	-245.84	0.00	0.00
-6.64	103.72	-15.0	0.0	-245.84	0.00	0.00
-5.81	103.72	-15.0	0.0	-245.84	0.00	0.00
-4.98	103.72	-15.0	0.0	-245.84	0.00	0.00
-4.15	103.72	-15.0	0.0	-245.84	0.00	0.00
-3.32	103.72	-15.0	0.0	-245.84	0.00	0.00
-2.49	103.72	-15.0	0.0	-245.84	0.00	0.00
-1.66	103.72	-15.0	0.0	-245.84	0.00	0.00
-0.83	103.72	-15.0	0.0	-245.84	0.00	0.00
0.00	103.72	-15.0	0.0	-245.84	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\02\_BS 6\_LF2.vrb

eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0130

Bodenkennwerte

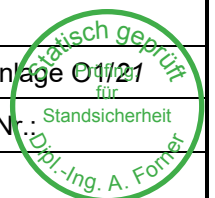
Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c_{i,k}$	$d(p)/\phi$	$d(a)/\phi$
pas/akt	[mNHN]	[kN/m³]	[kN/m³]	[°]	[kN/m²]	[-]	[-]
1	105.55	19.00/0.00	10.00/0.00	30.00/0.00	0.00/0.00	-0.667	0.667
2	103.74	17.00/0.00	8.50/0.00	22.50/0.00	0.00/0.00	-0.667	0.667
3	102.55	17.00/17.00	8.50/8.50	22.50/22.50	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 O1 Schnitt 6L	Seite Anlage 01/20
Kapitel: 3 LF 3 (BS-T)	Archiv Nr.: 01/20
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>Erhöhte aktive Erddruckbeiwerte  Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math>  Faktor [-] = 0.50  Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math>  Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.  Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet.  bestimmt nach:  Wandreibung angepasst.</p> <table border="1"> <thead> <tr> <th>Schicht</th> <th>UK</th> <th><math>k_{agh}</math></th> <th><math>k_{ach}</math></th> <th><math>\phi_{i,k}</math></th> <th><math>\delta</math></th> <th><math>\theta</math></th> <th><math>k_{agh}(40^\circ)</math></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>105.55</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> </tbody> </table> <p>Aktive Erddruckkoordinaten (<math>[g+q],k</math>)  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>106.090</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>100.205</td><td>43.403</td><td>46.050</td><td>0.00</td><td>0.00</td></tr> <tr><td>100.205</td><td>100.058</td><td>46.050</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>99.057</td><td>47.638</td><td>51.139</td><td>0.00</td><td>0.00</td></tr> <tr><td>99.057</td><td>98.053</td><td>51.139</td><td>55.258</td><td>0.00</td><td>0.00</td></tr> <tr><td>98.053</td><td>97.099</td><td>55.258</td><td>59.171</td><td>0.00</td><td>0.00</td></tr> <tr><td>97.099</td><td>80.000</td><td>59.171</td><td>129.303</td><td>0.00</td><td>0.00</td></tr> </tbody> </table> <p>Hydrodynamische Wasserdruckspannung  (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels)</p> <table border="1"> <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>			Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	100.205	43.403	46.050	0.00	0.00	100.205	100.058	46.050	46.844	0.00	0.00	100.058	99.911	46.844	47.638	0.00	0.00	99.911	99.057	47.638	51.139	0.00	0.00	99.057	98.053	51.139	55.258	0.00	0.00	98.053	97.099	55.258	59.171	0.00	0.00	97.099	80.000	59.171	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																															
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103.720	103.603	21.448	21.945	18.00	19.14																																																																																																																																																																																																																																																																																																																																	
103.603	103.479	21.945	48.775	19.14	20.36																																																																																																																																																																																																																																																																																																																																	
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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	100.205	43.403	46.050	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
100.205	100.058	46.050	46.844	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
100.058	99.911	46.844	47.638	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
99.911	99.057	47.638	51.139	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
99.057	98.053	51.139	55.258	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
98.053	97.099	55.258	59.171	0.00	0.00																																																																																																																																																																																																																																																																																																																																	
97.099	80.000	59.171	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																																																																																																																																																																																																																																																																																																																																			
Schnitt:    Anlage O1    Schnitt 6L		Seite Anlage O1/21																																																																																																																																																																																																																																																																																																																																				
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>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 Schicht UK kpg<sub>h</sub> kp<sub>ch</sub> phi<sub>k</sub> 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 -78.86 100.69 100.20 -78.86 -99.68 100.20 100.06 -99.68 -105.93 100.06 99.91 -105.93 -112.17 99.91 99.06 -112.17 -148.46 99.06 98.05 -148.46 -191.14 98.05 97.10 -191.14 -231.69 97.10 80.00 -231.69 -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 -245.8 103.72 -75.3 93.5 -126.1 103.60 -78.6 88.0 -115.5 103.48 -82.7 80.0 -105.0 103.47 -83.2 78.9 -104.0 103.35 -87.7 68.2 -95.8 103.33 -89.0 64.9 -93.8 103.23 -93.6 53.1 -88.2 103.22 -94.3 51.0 -87.5 103.11 -100.0 35.7 -82.7 103.10 -100.3 34.8 -82.5 102.98 -106.5 17.8 -79.4 102.97 -107.4 15.3 -79.1 102.95 -108.4 12.7 -78.9 102.86 -113.2 -0.7 -78.3 102.67 -123.5 -30.3 -81.2 102.65 -124.6 -33.6 -81.8 102.57 -129.1 -46.6 -85.0 102.55 -130.3 -49.9 -86.0 102.37 -135.3 -65.5 -96.2 102.11 -138.8 -84.3 -116.5 102.08 -139.0 -85.9 -119.0 101.83 -139.9 -95.9 -141.6 101.78 -139.9 -97.1 -146.4 101.64 -139.3 -98.7 -160.5 101.16 -133.0 -87.0 -205.1 101.06 -130.7 -81.1 -213.9 100.69 -119.8 -52.9 -238.8</div>		
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/22
Kapitel: 3 LF 3 (BS-T)		Archiv Nr. 01/22
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>100.20</div><div>-98.7</div><div>1.5</div><div>-252.1</div><div></div></div><div><div>100.06</div><div>-90.9</div><div>21.2</div><div>-250.4</div><div></div></div><div><div>99.91</div><div>-82.7</div><div>41.9</div><div>-245.8</div><div></div></div><div><div>99.06</div><div>-52.7</div><div>114.8</div><div>-173.0</div><div></div></div><div><div>98.05</div><div>-55.0</div><div>102.2</div><div>-55.6</div><div></div></div><div><div>97.10</div><div>-60.0</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>105.55</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>-206.6</div></div><div><div>103.72</div><div>-64.6</div><div>79.3</div><div>-105.6</div><div></div></div><div><div>103.60</div><div>-67.5</div><div>74.6</div><div>-96.6</div><div></div></div><div><div>103.48</div><div>-71.1</div><div>67.7</div><div>-87.8</div><div></div></div><div><div>103.47</div><div>-71.5</div><div>66.8</div><div>-86.9</div><div></div></div><div><div>103.35</div><div>-75.4</div><div>57.6</div><div>-80.0</div><div></div></div><div><div>103.33</div><div>-76.6</div><div>54.7</div><div>-78.3</div><div></div></div><div><div>103.23</div><div>-80.5</div><div>44.5</div><div>-73.6</div><div></div></div><div><div>103.22</div><div>-81.2</div><div>42.8</div><div>-72.9</div><div></div></div><div><div>103.11</div><div>-86.1</div><div>29.6</div><div>-69.0</div><div></div></div><div><div>103.10</div><div>-86.4</div><div>28.8</div><div>-68.8</div><div></div></div><div><div>102.98</div><div>-91.8</div><div>14.1</div><div>-66.2</div><div></div></div><div><div>102.97</div><div>-92.6</div><div>12.0</div><div>-66.0</div><div></div></div><div><div>102.95</div><div>-93.4</div><div>9.8</div><div>-65.8</div><div></div></div><div><div>102.86</div><div>-97.6</div><div>-1.8</div><div>-65.5</div><div></div></div><div><div>102.67</div><div>-106.6</div><div>-27.3</div><div>-68.2</div><div></div></div><div><div>102.65</div><div>-107.5</div><div>-30.1</div><div>-68.7</div><div></div></div><div><div>102.57</div><div>-111.4</div><div>-41.3</div><div>-71.6</div><div></div></div><div><div>102.55</div><div>-112.4</div><div>-44.2</div><div>-72.5</div><div></div></div><div><div>102.37</div><div>-116.8</div><div>-57.8</div><div>-81.5</div><div></div></div><div><div>102.11</div><div>-119.8</div><div>-74.1</div><div>-99.3</div><div></div></div><div><div>102.08</div><div>-120.0</div><div>-75.5</div><div>-101.5</div><div></div></div><div><div>101.83</div><div>-120.9</div><div>-84.2</div><div>-121.4</div><div></div></div><div><div>101.78</div><div>-120.8</div><div>-85.3</div><div>-125.6</div><div></div></div><div><div>101.64</div><div>-120.3</div><div>-86.7</div><div>-138.0</div><div></div></div><div><div>101.16</div><div>-114.9</div><div>-76.4</div><div>-177.2</div><div></div></div><div><div>101.06</div><div>-112.8</div><div>-71.3</div><div>-184.9</div><div></div></div><div><div>100.69</div><div>-103.4</div><div>-46.7</div><div>-206.8</div><div></div></div><div><div>100.20</div><div>-85.1</div><div>0.8</div><div>-218.6</div><div></div></div><div><div>100.06</div><div>-78.3</div><div>17.9</div><div>-217.3</div><div></div></div><div><div>99.91</div><div>-71.2</div><div>36.0</div><div>-213.3</div><div></div></div><div><div>99.06</div><div>-45.3</div><div>99.6</div><div>-150.3</div><div></div></div><div><div>98.05</div><div>-47.3</div><div>88.9</div><div>-48.3</div><div></div></div><div><div>97.10</div><div>-51.7</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>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>-206.6</div></div></div> <div><div><div>Schnitt:</div><div>Anlage O1</div><div>Schnitt 6L</div></div><div><div>Seite Anlage</div><div>O1/23</div></div></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><div><div>Vorgang:</div><div>Genehmigungsstatik</div></div><div><div>Projekt-Nr.:</div><div>2004-0025</div></div></div> <div><div><div>Statisch geprüft</div><div>für</div><div>Standicherheit</div><div>Dipl.-Ing. A. Forner</div></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>103.72</div><div>-64.6</div><div>79.3</div><div>-105.6</div></div><div><div>103.60</div><div>-67.5</div><div>74.6</div><div>-96.6</div></div><div><div>103.48</div><div>-71.1</div><div>67.7</div><div>-87.8</div></div><div><div>103.47</div><div>-71.5</div><div>66.8</div><div>-86.9</div></div><div><div>103.35</div><div>-75.4</div><div>57.6</div><div>-80.0</div></div><div><div>103.33</div><div>-76.6</div><div>54.7</div><div>-78.3</div></div><div><div>103.23</div><div>-80.5</div><div>44.5</div><div>-73.6</div></div><div><div>103.22</div><div>-81.2</div><div>42.8</div><div>-72.9</div></div><div><div>103.11</div><div>-86.1</div><div>29.6</div><div>-69.0</div></div><div><div>103.10</div><div>-86.4</div><div>28.8</div><div>-68.8</div></div><div><div>102.98</div><div>-91.8</div><div>14.1</div><div>-66.2</div></div><div><div>102.97</div><div>-92.6</div><div>12.0</div><div>-66.0</div></div><div><div>102.95</div><div>-93.4</div><div>9.8</div><div>-65.8</div></div><div><div>102.86</div><div>-97.6</div><div>-1.8</div><div>-65.5</div></div><div><div>102.67</div><div>-106.6</div><div>-27.3</div><div>-68.2</div></div><div><div>102.65</div><div>-107.5</div><div>-30.1</div><div>-68.7</div></div><div><div>102.57</div><div>-111.4</div><div>-41.3</div><div>-71.6</div></div><div><div>102.55</div><div>-112.4</div><div>-44.2</div><div>-72.5</div></div><div><div>102.37</div><div>-116.8</div><div>-57.8</div><div>-81.5</div></div><div><div>102.11</div><div>-119.8</div><div>-74.1</div><div>-99.3</div></div><div><div>102.08</div><div>-120.0</div><div>-75.5</div><div>-101.5</div></div><div><div>101.83</div><div>-120.9</div><div>-84.2</div><div>-121.4</div></div><div><div>101.78</div><div>-120.8</div><div>-85.3</div><div>-125.6</div></div><div><div>101.64</div><div>-120.3</div><div>-86.7</div><div>-138.0</div></div><div><div>101.16</div><div>-114.9</div><div>-76.4</div><div>-177.2</div></div><div><div>101.06</div><div>-112.8</div><div>-71.3</div><div>-184.9</div></div><div><div>100.69</div><div>-103.4</div><div>-46.7</div><div>-206.8</div></div><div><div>100.20</div><div>-85.1</div><div>0.8</div><div>-218.6</div></div><div><div>100.06</div><div>-78.3</div><div>17.9</div><div>-217.3</div></div><div><div>99.91</div><div>-71.2</div><div>36.0</div><div>-213.3</div></div><div><div>99.06</div><div>-45.3</div><div>99.6</div><div>-150.3</div></div><div><div>98.05</div><div>-47.3</div><div>88.9</div><div>-48.3</div></div><div><div>97.10</div><div>-51.7</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>106.10</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>-122.4</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>101.83</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> <div><div><div>Schnitt:</div><div>Anlage O1</div><div>Schnitt 6L</div></div><div><div>Seite Anlage O1/24</div><div>Archiv Nr.: 2004-0025</div></div></div> <div><div><div>Kapitel:</div><div>3</div><div>LF 3 (BS-T)</div></div><div><div>Vorgang:</div><div>Genehmigungsstatik</div><div>Projekt-Nr.: 2004-0025</div></div></div> <div><div>Statisch geprüft für Standsicherheit</div><div>Dipl.-Ing. A. Fomser</div></div>					



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																													
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<table><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>100.20</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>97.10</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>106.10</td><td>-20.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-20.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-20.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-20.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.60</td><td>-18.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-18.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.79</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.74</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.69</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.46</td><td>-15.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.41</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.36</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-14.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.79</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.74</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.60</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.54</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.48</td><td>-12.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.47</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.41</td><td>-12.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.35</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-11.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-11.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-11.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-11.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.11</td><td>-11.3</td><td>-</td><td>-</td><td>-</td></tr></table>						101.06	0.0	0.0	0.0	100.69	0.0	0.0	0.0	100.20	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	97.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-20.2	-	-	-	106.09	-20.1	-	-	-	106.09	-20.1	-	-	-	106.04	-20.0	-	-	-	105.60	-18.7	-	-	-	105.55	-18.5	-	-	-	105.55	-18.5	-	-	-	105.50	-18.4	-	-	-	105.50	-18.4	-	-	-	105.45	-18.2	-	-	-	105.10	-17.2	-	-	-	105.05	-17.0	-	-	-	105.05	-17.0	-	-	-	105.00	-16.9	-	-	-	104.79	-16.2	-	-	-	104.74	-16.1	-	-	-	104.74	-16.1	-	-	-	104.69	-16.0	-	-	-	104.46	-15.2	-	-	-	104.41	-15.1	-	-	-	104.41	-15.1	-	-	-	104.36	-15.0	-	-	-	104.10	-14.2	-	-	-	104.05	-14.0	-	-	-	104.05	-14.0	-	-	-	104.00	-13.9	-	-	-	103.79	-13.3	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.74	-13.1	-	-	-	103.72	-13.1	-	-	-	103.72	-13.1	-	-	-	103.66	-12.9	-	-	-	103.66	-12.9	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.54	-12.6	-	-	-	103.48	-12.4	-	-	-	103.48	-12.4	-	-	-	103.47	-12.3	-	-	-	103.47	-12.3	-	-	-	103.41	-12.2	-	-	-	103.41	-12.2	-	-	-	103.35	-12.0	-	-	-	103.35	-12.0	-	-	-	103.33	-11.9	-	-	-	103.33	-11.9	-	-	-	103.28	-11.8	-	-	-	103.28	-11.8	-	-	-	103.23	-11.7	-	-	-	103.23	-11.7	-	-	-	103.22	-11.6	-	-	-	103.22	-11.6	-	-	-	103.16	-11.5	-	-	-	103.16	-11.5	-	-	-	103.11	-11.3	-	-	-
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102.32	-9.1	1.32	12.02	15.92																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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102.11	-8.6	3.10	26.57	30.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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102.08	-8.5	3.59	30.43	32.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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102.03	-8.3	3.86	32.23	36.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.88	-8.0	5.84	46.43	46.43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
101.83	-7.8	5.84	45.67	49.85																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.78	-7.7	6.37	49.03	53.28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.73	-7.6	6.93	52.41	56.58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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101.22	-6.3	14.71	92.07	92.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.75	-5.1	24.30	124.55	124.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.25	-4.0	39.47	158.61	158.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
100.20	-3.9	39.47	154.46	161.98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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100.11	-3.7	45.53	168.76	168.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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99.91	-3.3	50.00	165.13	182.28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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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 6 Datei: 04_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 O1 Schnitt 6L		Seite Anlage 01/28
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 01/28
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]	[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 automatisch und Fuß gebettet

Profillänge = 9.60 m

Bettungsmodule

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
102.55	80.00	45.000	45.000

Ausnutzungsgrad  $\mu_e = 555.787 / 559.418 = 0.994$

Bettungslager  $B_{h,d} = 555.787 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 559.418 \text{ kN/m}$

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	-221.32	-171.10	-171.10	-165.36	3.900E+7	2.100E+7	-218.15

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	-16.6	0.0	-230.55	0.00	0.00
-7.47	103.72	-16.6	0.0	-230.55	0.00	0.00
-7.47	103.72	-16.6	0.0	-230.55	0.00	0.00
-6.64	103.72	-16.6	0.0	-230.55	0.00	0.00
-5.81	103.72	-16.6	0.0	-230.55	0.00	0.00
-4.98	103.72	-16.6	0.0	-230.55	0.00	0.00
-4.15	103.72	-16.6	0.0	-230.55	0.00	0.00
-3.32	103.72	-16.6	0.0	-230.55	0.00	0.00
-2.49	103.72	-16.6	0.0	-230.55	0.00	0.00
-1.66	103.72	-16.7	0.0	-230.55	0.00	0.00
-0.83	103.72	-16.7	0.0	-230.55	0.00	0.00
0.00	103.72	-16.7	0.0	-230.55	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\02\_BS 6\_LF2.vrb eingelesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0130

Bodenkennwerte

Schicht	UK	$\gamma_{m,k}$	$\gamma_{m',k}$	$\phi_{i,k}$	$c_k$	$d(p)/\phi_i$	$d(a)/\phi_i$
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

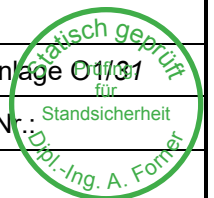
  

Schnitt: Anlage O1 Schnitt 6L	Seite Anlage 01/29
Kapitel: 4 LF 4 (BS-P)	Archiv Nr.: 2004-0025
Vorgang: Genehmigungsstatik	Projekt-Nr.: 2004-0025

Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																					
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<div>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 &lt;&gt; 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>100.303</td><td>42.130</td><td>43.992</td><td>0.00</td><td>0.00</td></tr><tr><td>100.303</td><td>100.058</td><td>43.992</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>53.469</td><td>0.00</td><td>0.00</td></tr><tr><td>98.054</td><td>97.051</td><td>53.469</td><td>57.585</td><td>0.00</td><td>0.00</td></tr><tr><td>97.051</td><td>96.499</td><td>57.585</td><td>59.849</td><td>0.00</td><td>0.00</td></tr><tr><td>96.499</td><td>80.000</td><td>59.849</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	100.303	42.130	43.992	0.00	0.00	100.303	100.058	43.992	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	53.469	0.00	0.00	98.054	97.051	53.469	57.585	0.00	0.00	97.051	96.499	57.585	59.849	0.00	0.00	96.499	80.000	59.849	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>01/30</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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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	100.303	42.130	43.992	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
100.303	100.058	43.992	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	53.469	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
98.054	97.051	53.469	57.585	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
97.051	96.499	57.585	59.849	0.00	0.00																																																																																																																																																																																																																																																																																																																																		
96.499	80.000	59.849	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																																																																																																																																																																																																																																																																																																																																				
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage 01/30																																																																																																																																																																																																																																																																																																																																					
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 kpg<sub>h</sub> kp<sub>ch</sub> phi<sub>k</sub> 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 -84.55 100.69 100.30 -84.55 -100.02 100.30 100.06 -100.02 -109.69 100.06 99.91 -109.69 -115.49 99.91 99.06 -115.49 -149.15 99.06 98.05 -149.15 -188.76 98.05 97.05 -188.76 -228.36 97.05 96.50 -228.36 -250.15 96.50 80.00 -250.15 -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 -230.6 103.72 -83.9 59.3 -141.6 103.60 -87.6 53.2 -135.1 103.48 -92.1 44.3 -129.0 103.47 -92.6 43.1 -128.4 103.35 -97.6 31.1 -124.2 103.33 -99.1 27.5 -123.4 103.23 -104.1 14.3 -121.4 103.22 -105.0 12.1 -121.2 103.11 -111.3 -5.0 -120.8 103.10 -111.6 -6.0 -120.8 102.98 -118.5 -24.9 -122.6 102.97 -119.5 -27.7 -123.1 102.95 -120.5 -30.6 -123.6 102.86 -125.9 -45.5 -127.0 102.67 -137.3 -78.4 -138.6 102.65 -138.6 -82.0 -140.2 102.57 -143.5 -96.5 -147.3 102.55 -144.8 -100.1 -149.3 102.37 -148.5 -114.1 -168.4 102.11 -149.7 -128.2 -201.0 102.08 -149.6 -129.2 -204.8 101.78 -147.7 -134.0 -244.2 101.64 -145.6 -132.1 -263.3 101.16 -133.9 -106.9 -320.6 101.06 -130.3 -97.6 -331.3 100.69 -114.6 -56.7 -359.9 100.30 -92.5 0.5 -371.3</div>		
Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/31
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 01/31
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>100.06</div><div>-77.3</div><div>39.4</div><div>-366.3</div></div><div><div>99.91</div><div>-69.4</div><div>59.7</div><div>-359.0</div></div><div><div>99.06</div><div>-39.8</div><div>133.4</div><div>-271.6</div></div><div><div>98.05</div><div>-35.8</div><div>137.9</div><div>-128.8</div></div><div><div>97.05</div><div>-53.5</div><div>67.9</div><div>-19.7</div></div><div><div>96.50</div><div>-56.2</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>-171.1</div></div><div><div>103.72</div><div>-64.6</div><div>43.8</div><div>-105.6</div><div></div></div><div><div>103.60</div><div>-67.5</div><div>39.1</div><div>-100.8</div><div></div></div><div><div>103.48</div><div>-71.1</div><div>32.2</div><div>-96.3</div><div></div></div><div><div>103.47</div><div>-71.5</div><div>31.3</div><div>-95.9</div><div></div></div><div><div>103.35</div><div>-75.4</div><div>22.1</div><div>-92.9</div><div></div></div><div><div>103.33</div><div>-76.6</div><div>19.2</div><div>-92.3</div><div></div></div><div><div>103.23</div><div>-80.5</div><div>9.0</div><div>-91.0</div><div></div></div><div><div>103.22</div><div>-81.2</div><div>7.3</div><div>-90.8</div><div></div></div><div><div>103.11</div><div>-86.1</div><div>-5.9</div><div>-90.8</div><div></div></div><div><div>103.10</div><div>-86.4</div><div>-6.7</div><div>-90.8</div><div></div></div><div><div>102.98</div><div>-91.8</div><div>-21.4</div><div>-92.5</div><div></div></div><div><div>102.97</div><div>-92.6</div><div>-23.5</div><div>-92.8</div><div></div></div><div><div>102.95</div><div>-93.4</div><div>-25.8</div><div>-93.3</div><div></div></div><div><div>102.86</div><div>-97.6</div><div>-37.3</div><div>-96.1</div><div></div></div><div><div>102.67</div><div>-106.6</div><div>-62.8</div><div>-105.4</div><div></div></div><div><div>102.65</div><div>-107.5</div><div>-65.6</div><div>-106.7</div><div></div></div><div><div>102.57</div><div>-111.4</div><div>-76.8</div><div>-112.4</div><div></div></div><div><div>102.55</div><div>-112.4</div><div>-79.7</div><div>-114.0</div><div></div></div><div><div>102.37</div><div>-115.6</div><div>-90.7</div><div>-129.2</div><div></div></div><div><div>102.11</div><div>-116.5</div><div>-101.7</div><div>-155.1</div><div></div></div><div><div>102.08</div><div>-116.5</div><div>-102.5</div><div>-158.1</div><div></div></div><div><div>101.78</div><div>-114.9</div><div>-106.2</div><div>-189.3</div><div></div></div><div><div>101.64</div><div>-113.3</div><div>-104.7</div><div>-204.5</div><div></div></div><div><div>101.16</div><div>-104.2</div><div>-84.8</div><div>-249.9</div><div></div></div><div><div>101.06</div><div>-101.3</div><div>-77.6</div><div>-258.4</div><div></div></div><div><div>100.69</div><div>-89.1</div><div>-45.4</div><div>-281.2</div><div></div></div><div><div>100.30</div><div>-71.9</div><div>-0.4</div><div>-290.4</div><div></div></div><div><div>100.06</div><div>-60.0</div><div>30.3</div><div>-286.7</div><div></div></div><div><div>99.91</div><div>-53.8</div><div>46.2</div><div>-281.0</div><div></div></div><div><div>99.06</div><div>-30.7</div><div>104.3</div><div>-212.8</div><div></div></div><div><div>98.05</div><div>-27.7</div><div>108.1</div><div>-101.0</div><div></div></div><div><div>97.05</div><div>-41.6</div><div>53.3</div><div>-15.4</div><div></div></div><div><div>96.50</div><div>-43.7</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>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>-171.1</div></div></div>						Schnitt: Anlage O1 Schnitt 6L		Seite Anlage O1/32	
Kapitel:		4 LF 4 (BS-P)		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																																																																																																																																																																																																																																																																																																																								
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<div><div>Schnittgrößen (q,k)</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>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.55</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>105.05</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>104.05</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>-123.1</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>103.10</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>102.97</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>102.67</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>102.57</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>102.37</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.11</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>101.78</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.64</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.16</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>101.06</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table></div>			103.72	-64.6	43.8	-105.6	103.60	-67.5	39.1	-100.8	103.48	-71.1	32.2	-96.3	103.47	-71.5	31.3	-95.9	103.35	-75.4	22.1	-92.9	103.33	-76.6	19.2	-92.3	103.23	-80.5	9.0	-91.0	103.22	-81.2	7.3	-90.8	103.11	-86.1	-5.9	-90.8	103.10	-86.4	-6.7	-90.8	102.98	-91.8	-21.4	-92.5	102.97	-92.6	-23.5	-92.8	102.95	-93.4	-25.8	-93.3	102.86	-97.6	-37.3	-96.1	102.67	-106.6	-62.8	-105.4	102.65	-107.5	-65.6	-106.7	102.57	-111.4	-76.8	-112.4	102.55	-112.4	-79.7	-114.0	102.37	-115.6	-90.7	-129.2	102.11	-116.5	-101.7	-155.1	102.08	-116.5	-102.5	-158.1	101.78	-114.9	-106.2	-189.3	101.64	-113.3	-104.7	-204.5	101.16	-104.2	-84.8	-249.9	101.06	-101.3	-77.6	-258.4	100.69	-89.1	-45.4	-281.2	100.30	-71.9	-0.4	-290.4	100.06	-60.0	30.3	-286.7	99.91	-53.8	46.2	-281.0	99.06	-30.7	104.3	-212.8	98.05	-27.7	108.1	-101.0	97.05	-41.6	53.3	-15.4	96.50	-43.7	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		105.55	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	-123.1	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		101.78	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	
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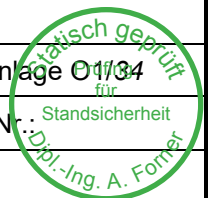
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-12.7	-	-	-	103.60	-12.7	-	-	-	103.60	-12.7	-	-	-	103.54	-12.5	-	-	-	103.48	-12.3	-	-	-	103.48	-12.3	-	-	-	103.47	-12.3	-	-	-	103.47	-12.3	-	-	-	103.41	-12.1	-	-	-	103.41	-12.1	-	-	-	103.35	-12.0	-	-	-	103.35	-12.0	-	-	-	103.33	-11.9	-	-	-	103.33	-11.9	-	-	-	103.28	-11.7	-	-	-	103.28	-11.7	-	-	-	103.23	-11.6	-	-	-	103.23	-11.6	-	-	-	103.22	-11.6	-	-	-	103.22	-11.6	-	-	-	103.16	-11.4	-	-	-	103.16	-11.4	-	-	-	103.11	-11.2	-	-	-
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Kapitel: 4 LF 4 (BS-P)				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>103.11</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.10</div> <div>-11.2</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>103.04</div> <div>-11.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.98</div> <div>-10.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.97</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.95</div> <div>-10.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.90</div> <div>-10.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.90</div> <div>-10.6</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.86</div> <div>-10.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.86</div> <div>-10.5</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.81</div> <div>-10.4</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.72</div> <div>-10.1</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.67</div> <div>-10.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.67</div> <div>-10.0</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-9.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.65</div> <div>-9.9</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-9.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.60</div> <div>-9.8</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-9.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.57</div> <div>-9.7</div> <div>-</div> <div>-</div> <div>-</div> </div> <div> <div>102.55</div> <div>-9.6</div> <div>0.00</div> <div>0.00</div> <div>0.00</div> </div> <div> <div>102.55</div> <div>-9.6</div> <div>0.00</div> <div>0.00</div> <div>19.82</div> </div> <div> <div>102.51</div> <div>-9.5</div> <div>0.00</div> <div>0.00</div> <div>22.87</div> </div> <div> <div>102.42</div> <div>-9.3</div> <div>3.13</div> <div>28.98</div> <div>28.98</div> </div> <div> <div>102.37</div> <div>-9.1</div> <div>3.13</div> <div>28.59</div> <div>32.03</div> </div> <div> <div>102.37</div> <div>-9.1</div> <div>3.51</div> <div>32.04</div> <div>32.03</div> </div> <div> <div>102.32</div> <div>-9.0</div> <div>3.51</div> <div>31.51</div> <div>35.73</div> </div> <div> <div>102.16</div> <div>-8.5</div> <div>5.49</div> <div>46.84</div> <div>46.84</div> </div> <div> <div>102.11</div> <div>-8.4</div> <div>5.49</div> <div>46.03</div> <div>50.54</div> </div> <div> <div>102.11</div> <div>-8.4</div> <div>6.03</div> <div>50.54</div> <div>50.54</div> </div> <div> <div>102.08</div> <div>-8.3</div> <div>6.03</div> <div>50.05</div> <div>52.57</div> </div> <div> <div>102.08</div> <div>-8.3</div> <div>6.33</div> <div>52.57</div> <div>52.57</div> </div> <div> <div>102.03</div> <div>-8.2</div> <div>6.33</div> <div>51.71</div> <div>55.99</div> </div> <div> <div>101.83</div> <div>-7.6</div> <div>9.12</div> <div>69.68</div> <div>69.67</div> </div> <div> <div>101.78</div> <div>-7.5</div> <div>9.12</div> <div>68.48</div> <div>73.10</div> </div> <div> <div>101.78</div> <div>-7.5</div> <div>9.74</div> <div>73.10</div> <div>73.10</div> </div> <div> <div>101.73</div> <div>-7.4</div> <div>9.74</div> <div>71.87</div> <div>76.40</div> </div> <div> <div>101.68</div> <div>-7.3</div> <div>10.99</div> <div>79.71</div> <div>79.71</div> </div> <div> <div>101.64</div> <div>-7.1</div> <div>10.99</div> <div>78.34</div> <div>83.01</div> </div> <div> <div>101.64</div> <div>-7.1</div> <div>11.64</div> <div>83.02</div> <div>83.01</div> </div> <div> <div>101.58</div> <div>-7.0</div> <div>11.64</div> <div>81.44</div> <div>86.62</div> </div> <div> <div>101.22</div> <div>-6.1</div> <div>18.41</div> <div>111.89</div> <div>111.88</div> </div> <div> <div>101.16</div> <div>-6.0</div> <div>18.41</div> <div>109.56</div> <div>115.49</div> </div> <div> <div>101.16</div> <div>-6.0</div> <div>19.41</div> <div>115.50</div> <div>115.49</div> </div> <div> <div>101.11</div> <div>-5.8</div> <div>19.41</div> <div>113.06</div> <div>119.10</div> </div> <div> <div>101.11</div> <div>-5.8</div> <div>20.45</div> <div>119.11</div> <div>119.10</div> </div> <div> <div>101.06</div> <div>-5.7</div> <div>20.45</div> <div>116.57</div> <div>122.71</div> </div> <div> <div>101.06</div> <div>-5.7</div> <div>21.52</div> <div>122.72</div> <div>122.71</div> </div> <div> <div>101.01</div> <div>-5.6</div> <div>21.52</div> <div>120.07</div> <div>126.32</div> </div> <div> <div>100.75</div> <div>-5.0</div> <div>28.99</div> <div>144.37</div> <div>144.36</div> </div> <div> <div>100.69</div> <div>-4.9</div> <div>28.99</div> <div>141.02</div> <div>147.97</div> </div> <div> <div>100.69</div> <div>-4.9</div> <div>30.42</div> <div>147.98</div> <div>147.97</div> </div> <div> <div>100.65</div> <div>-4.8</div> <div>30.42</div> <div>144.72</div> <div>151.35</div> </div> <div> <div>100.35</div> <div>-4.1</div> <div>41.47</div> <div>171.67</div> <div>171.65</div> </div> <div> <div>100.30</div> <div>-4.0</div> <div>41.47</div> <div>167.56</div> <div>175.04</div> </div> <div> <div>100.30</div> <div>-4.0</div> <div>43.33</div> <div>175.05</div> <div>175.04</div> </div> <div> <div>100.25</div> <div>-3.9</div> <div>43.33</div> <div>170.81</div> <div>178.42</div> </div> <div> <div>100.11</div> <div>-3.7</div> <div>45.00</div> <div>164.53</div> <div>188.57</div> </div> <div> <div>100.06</div> <div>-3.6</div> <div>45.00</div> <div>160.34</div> <div>191.95</div> </div> <div> <div>100.06</div> <div>-3.6</div> <div>45.00</div> <div>160.34</div> <div>191.95</div> </div> <div> <div>100.01</div> <div>-3.5</div> <div>45.00</div> <div>156.20</div> <div>195.34</div> </div> <div> <div>99.96</div> <div>-3.4</div> <div>45.00</div> <div>152.12</div> <div>198.72</div> </div> <div> <div>99.91</div> <div>-3.3</div> <div>45.00</div> <div>148.09</div> <div>202.10</div> </div> <div> <div>99.91</div> <div>-3.3</div> <div>45.00</div> <div>148.09</div> <div>202.10</div> </div> <div> <div>99.86</div> <div>-3.2</div> <div>45.00</div> <div>144.01</div> <div>205.57</div> </div> <div> <div>99.11</div> <div>-2.0</div> <div>45.00</div> <div>88.91</div> <div>257.55</div> </div>		
Schnitt:	Anlage O1 Schnitt 6L	Seite Anlage O1/35
Kapitel:	4 LF 4 (BS-P)	Archiv Nr.: 01/35
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

99.06	-1.9	45.00	85.61	261.02
99.06	-1.9	45.00	85.61	261.02
99.01	-1.8	45.00	82.35	264.48
98.10	-0.7	45.00	29.41	326.86
98.05	-0.6	45.00	26.72	330.33
98.05	-0.6	45.00	26.72	330.33
98.00	-0.5	45.00	24.05	333.79
97.10	0.5	45.00	-21.75	396.17
97.05	0.5	45.00	-24.22	399.64
97.05	0.5	45.00	-24.22	399.64
97.00	0.6	45.00	-26.69	403.10
96.55	1.1	45.00	-48.86	434.29
96.50	1.1	45.00	-51.32	437.76

Verdrehung (Theoretischer Fußpunkt) [°]  
 $\phi_{i,[g+q],k} = -0.06243574$   
Theoretischer Fußpunkt = 96.499 m

Einbindetiefe  $t_g = 6.05$  m  
Profillänge = 9.60 m

Nachweis Summe V  
Nachweis des mobilisierten Erdwiderstands  
Bedingung:  $P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}$   
 $G_{k} = 181.66$  kN/m  
 $G'_{k} = 0.00$  kN/m  
 $P_{v,k} = 19.50$  kN/m  
 $E_{av,k} = 78.58$  kN/m ( $E_{ah,k} = 435.41$  kN/m)  
 $B_{v,k} = 173.72$   
Summe  $V_{k} = 106.02$  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/m<sup>2</sup>  
(gemittelt von 97.38 bis 93.86 m)  $\Rightarrow q_{b,k} = 1.60$  MN/m<sup>2</sup>  
 $R_{b,d} = A \cdot q_{b,k} / \gamma(q_{b,k}) = 0.7569 \cdot 1.60 \cdot 1000 / 1.40 = 865.05$  kN/m

Mantelreibung  

von	bis	$q_{s,k}$ [kN/m <sup>2</sup> ]	Bezeichnung
102.55	96.50	55.00	s3: Flussskies, -sand

Mantelfläche bis 96.50 m = 1.000 m<sup>2</sup>/m/m  $\Rightarrow R_{s1,d}$   
 $R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 332.75 / 1.40 = 237.68$  kN/m  
 $R_{d} = R_{b,d} + R_{s1,d} = 1102.73$  kN/m

Einwirkungen  
 $V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 245.24 - 0.00 + 100.19 + 26.33 = 371.75$  kN/m  
 $\Rightarrow \mu = V_{d} / R_{d} = 371.75 / 1102.73 = 0.34$

Horizontaler Wasserdruck herkömmlich bestimmt.

Schnitt: Anlage O1 Schnitt 6L	Seite Anlage 01/36
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
<div>Anlage P1 Schnitt 7L</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 7 Datei: 01_BS 7_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 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 0.55 103.68 103.68 103.22 102.99 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 P1 Schnitt 7L		Seite Anlage P1119.
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 1119.
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>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 automatisch und Fuß gebettet</div> <div>Profillänge = 7.00 m</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>105.45</td><td>5.000</td><td>5.000</td></tr><tr><td>105.45</td><td>103.68</td><td>5.000</td><td>5.000</td></tr><tr><td>103.68</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> <div>Ausnutzungsgrad <math>\mu_e = 611.661 / 621.399 = 0.984</math></div> <div>Bettungslager <math>B_{h,d} = 611.661</math> kN/m</div> <div>Erdwiderstand <math>E_{ph,d} = 621.399</math> 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>105.45</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>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 &lt;&gt; 0.0.</div> <div>Ersatzerddruck-Beiwert kah 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>105.45</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>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>106.100</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>105.750</td><td>0.000</td><td>3.255</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>3.255</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>105.050</td><td>6.128</td><td>9.957</td><td>0.50</td><td>4.50</td></tr><tr><td>105.050</td><td>105.000</td><td>9.957</td><td>10.436</td><td>4.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.680</td><td>10.436</td><td>13.500</td><td>5.00</td><td>5.00</td></tr><tr><td>104.680</td><td>104.350</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.350</td><td>104.092</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>104.092</td><td>103.680</td><td>0.000</td><td>0.000</td><td>5.00</td><td>5.00</td></tr><tr><td>103.680</td><td>103.452</td><td>0.000</td><td>22.333</td><td>5.00</td><td>5.00</td></tr><tr><td>103.452</td><td>103.328</td><td>22.333</td><td>47.499</td><td>5.00</td><td>5.00</td></tr><tr><td>103.328</td><td>103.223</td><td>47.499</td><td>80.687</td><td>5.00</td><td>5.00</td></tr><tr><td>103.223</td><td>103.204</td><td>80.687</td><td>84.840</td><td>5.00</td><td>5.00</td></tr><tr><td>103.204</td><td>103.079</td><td>84.840</td><td>120.230</td><td>5.00</td><td>5.00</td></tr><tr><td>103.079</td><td>102.988</td><td>120.230</td><td>150.053</td><td>5.00</td><td>5.00</td></tr><tr><td>102.988</td><td>102.972</td><td>150.053</td><td>153.771</td><td>5.00</td><td>5.00</td></tr><tr><td>102.972</td><td>102.955</td><td>153.771</td><td>153.311</td><td>5.00</td><td>5.00</td></tr><tr><td>102.955</td><td>102.831</td><td>153.311</td><td>153.387</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	104.35	0.00	0.00	-111.00	0.00	0.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	105.75	105.45	5.000	5.000	105.45	103.68	5.000	5.000	103.68	102.52	5.000	5.000	102.52	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	105.45	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	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	105.750	0.000	3.255	0.00	0.00	105.750	105.500	3.255	5.649	0.00	0.00	105.500	105.450	5.649	6.128	0.00	0.50	105.450	105.050	6.128	9.957	0.50	4.50	105.050	105.000	9.957	10.436	4.50	5.00	105.000	104.680	10.436	13.500	5.00	5.00	104.680	104.350	0.000	0.000	5.00	5.00	104.350	104.092	0.000	0.000	5.00	5.00	104.092	103.680	0.000	0.000	5.00	5.00	103.680	103.452	0.000	22.333	5.00	5.00	103.452	103.328	22.333	47.499	5.00	5.00	103.328	103.223	47.499	80.687	5.00	5.00	103.223	103.204	80.687	84.840	5.00	5.00	103.204	103.079	84.840	120.230	5.00	5.00	103.079	102.988	120.230	150.053	5.00	5.00	102.988	102.972	150.053	153.771	5.00	5.00	102.972	102.955	153.771	153.311	5.00	5.00	102.955	102.831	153.311	153.387	5.00	5.00
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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																																																																																																																																																																																																																																																																																																																			
<table><tr><td>102.831</td><td>102.707</td><td>153.387</td><td>155.701</td><td>5.00</td><td>5.00</td></tr><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>101.644</td><td>80.327</td><td>78.828</td><td>5.00</td><td>5.00</td></tr><tr><td>101.644</td><td>101.497</td><td>78.828</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>99.099</td><td>48.933</td><td>52.823</td><td>5.00</td><td>5.00</td></tr><tr><td>99.099</td><td>97.854</td><td>52.823</td><td>57.926</td><td>5.00</td><td>5.00</td></tr><tr><td>97.854</td><td>95.031</td><td>57.926</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)</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>105.45</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><tr><td>102.39</td><td>102.16</td><td>-132.83</td><td>-142.41</td></tr><tr><td>102.16</td><td>102.09</td><td>-142.41</td><td>-145.46</td></tr><tr><td>102.09</td><td>101.79</td><td>-145.46</td><td>-158.10</td></tr><tr><td>101.79</td><td>101.69</td><td>-158.10</td><td>-162.40</td></tr></table>								102.831	102.707	153.387	155.701	5.00	5.00	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	101.644	80.327	78.828	5.00	5.00	101.644	101.497	78.828	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	99.099	48.933	52.823	5.00	5.00	99.099	97.854	52.823	57.926	5.00	5.00	97.854	95.031	57.926	59.163	5.00	5.00	95.031	80.000	59.163	120.815	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	105.45	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	102.39	102.16	-132.83	-142.41	102.16	102.09	-142.41	-145.46	102.09	101.79	-145.46	-158.10	101.79	101.69	-158.10	-162.40
102.831	102.707	153.387	155.701	5.00	5.00																																																																																																																																																																																																																																																																																																																				
102.707	102.686	155.701	156.383	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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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	101.644	80.327	78.828	5.00	5.00																																																																																																																																																																																																																																																																																																																				
101.644	101.497	78.828	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																																																																																																																																																																																																																																																																																																																				
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99.099	97.854	52.823	57.926	5.00	5.00																																																																																																																																																																																																																																																																																																																				
97.854	95.031	57.926	59.163	5.00	5.00																																																																																																																																																																																																																																																																																																																				
95.031	80.000	59.163	120.815	5.00	5.00																																																																																																																																																																																																																																																																																																																				
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4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																																			
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[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																																																																																																																																																																																																																																																																																																																						
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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																																																																																																																																																																																																																																																																																																																						
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102.61	102.52	-70.05	-71.49																																																																																																																																																																																																																																																																																																																						
102.52	102.39	-127.25	-132.83																																																																																																																																																																																																																																																																																																																						
102.39	102.16	-132.83	-142.41																																																																																																																																																																																																																																																																																																																						
102.16	102.09	-142.41	-145.46																																																																																																																																																																																																																																																																																																																						
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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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<p>Schnittgrößen ([g+q+w],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>-0.2</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>105.50</td><td>-10.5</td><td>0.7</td><td>-0.2</td></tr><tr><td>105.45</td><td>-11.0</td><td>1.6</td><td>-0.1</td></tr><tr><td>105.05</td><td>-15.7</td><td>7.8</td><td>1.6</td></tr><tr><td>105.00</td><td>-16.2</td><td>9.0</td><td>2.0</td></tr><tr><td>104.68</td><td>-18.5</td><td>17.5</td><td>6.2</td></tr><tr><td>104.35</td><td>-20.1</td><td>33.1</td><td>14.5</td></tr><tr><td>104.35</td><td>-20.1</td><td>-77.9</td><td>14.5</td></tr><tr><td>104.09</td><td>-21.0</td><td>-64.2</td><td>-3.8</td></tr></table>			101.69	101.64	-162.40	-164.48	101.64	101.50	-164.48	-170.73	101.50	101.22	-170.73	-182.38	101.22	101.07	-182.38	-189.05	101.07	100.75	-189.05	-202.37	100.75	100.28	-202.37	-222.36	100.28	100.09	-222.36	-230.35	100.09	100.05	-230.35	-232.35	100.05	99.10	-232.35	-272.66	99.10	97.85	-272.66	-325.54	97.85	95.03	-325.54	-445.54	95.03	80.00	-445.54	-1084.40	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.10	0.0	0.0	0.0	106.09	-0.2	0.0	0.0	105.75	-7.6	-0.6	-0.1	105.50	-12.0	0.9	-0.2	105.45	-12.6	1.9	-0.1	105.05	-18.0	9.4	2.0	105.00	-18.5	10.7	2.5	104.68	-21.0	20.8	7.5	104.35	-22.8	39.1	17.3	104.35	-22.8	-94.1	17.3	104.09	-23.7	-78.0	-4.9	103.68	-25.6	-54.1	-32.0	103.45	-27.0	-47.9	-43.6	103.33	-27.9	-46.8	-49.5	103.22	-28.7	-49.5	-54.5	103.20	-28.8	-50.5	-55.5	103.08	-29.8	-59.6	-62.2	102.99	-30.6	-69.8	-68.1	102.97	-30.8	-72.0	-69.3	102.96	-30.9	-74.2	-70.5	102.83	-32.1	-91.1	-80.8	102.71	-33.3	-108.4	-93.2	102.69	-33.5	-111.4	-95.4	102.64	-33.9	-117.2	-100.2	102.61	-34.3	-121.7	-104.2	102.52	-35.3	-134.1	-115.8	102.39	-25.4	-119.3	-132.4	102.16	-7.3	-89.7	-156.1	102.09	-1.3	-79.1	-162.2	101.79	25.5	-29.1	-178.5	101.69	34.2	-11.8	-180.5	101.64	38.2	-3.8	-180.9	101.50	49.4	18.6	-179.8	101.22	66.6	54.2	-169.7	101.07	74.4	71.0	-159.8	100.75	85.6	95.7	-133.4	100.28	91.9	108.5	-84.1	100.09	91.1	104.9	-64.0	100.05	90.5	103.1	-59.1	99.10	88.2	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	-0.2	0.0	0.0	105.75	-6.6	-0.6	-0.1	105.50	-10.5	0.7	-0.2	105.45	-11.0	1.6	-0.1	105.05	-15.7	7.8	1.6	105.00	-16.2	9.0	2.0	104.68	-18.5	17.5	6.2	104.35	-20.1	33.1	14.5	104.35	-20.1	-77.9	14.5	104.09	-21.0	-64.2	-3.8
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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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<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>106.10</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>105.50</td><td>-10.5</td><td>0.7</td><td>-0.2</td></tr> <tr><td>105.45</td><td>-11.0</td><td>1.6</td><td>-0.1</td></tr> <tr><td>105.05</td><td>-15.7</td><td>7.8</td><td>1.6</td></tr> <tr><td>105.00</td><td>-16.2</td><td>9.0</td><td>2.0</td></tr> <tr><td>104.68</td><td>-18.5</td><td>17.5</td><td>6.2</td></tr> <tr><td>104.35</td><td>-20.1</td><td>33.1</td><td>14.5</td></tr> <tr><td>104.35</td><td>-20.1</td><td>-77.9</td><td>14.5</td></tr> <tr><td>104.09</td><td>-21.0</td><td>-64.2</td><td>-3.8</td></tr> <tr><td>103.68</td><td>-22.8</td><td>-43.9</td><td>-26.0</td></tr> <tr><td>103.45</td><td>-24.1</td><td>-38.7</td><td>-35.4</td></tr> 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(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>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>105.50</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>105.05</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>104.68</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>104.35</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>103.68</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.45</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>103.22</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.20</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>102.99</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>102.96</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>102.52</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>101.79</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>101.64</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>99.10</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>106.10</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-17.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-17.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-16.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-16.3</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-15.8</td><td>1.20</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-15.7</td><td>1.20</td><td>18.84</td><td>23.77</td></tr><tr><td>105.50</td><td>-15.7</td><td>1.51</td><td>23.78</td><td>23.77</td></tr><tr><td>105.45</td><td>-15.6</td><td>1.51</td><td>23.55</td><td>28.53</td></tr><tr><td>105.45</td><td>-15.6</td><td>1.11</td><td>17.29</td><td>17.29</td></tr><tr><td>105.40</td><td>-15.4</td><td>1.11</td><td>17.13</td><td>19.87</td></tr><tr><td>105.10</td><td>-14.5</td><td>2.44</td><td>35.34</td><td>35.34</td></tr><tr><td>105.05</td><td>-14.4</td><td>2.44</td><td>34.98</td><td>37.92</td></tr><tr><td>105.05</td><td>-14.4</td><td>2.64</td><td>37.92</td><td>37.92</td></tr><tr><td>105.00</td><td>-14.2</td><td>2.64</td><td>37.53</td><td>40.50</td></tr><tr><td>105.00</td><td>-14.2</td><td>2.85</td><td>40.50</td><td>40.50</td></tr><tr><td>104.95</td><td>-14.0</td><td>2.85</td><td>40.05</td><td>41.87</td></tr><tr><td>104.73</td><td>-13.4</td><td>3.53</td><td>47.38</td><td>47.37</td></tr></table></div></div>						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	105.50	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	104.68	0.0	0.0	0.0	104.35	0.0	0.0	0.0	104.09	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	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	102.52	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	101.64	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	99.10	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-17.5	-	-	-	106.09	-17.5	-	-	-	106.09	-17.5	-	-	-	106.04	-17.3	-	-	-	105.80	-16.6	-	-	-	105.75	-16.4	0.00	0.00	0.00	105.75	-16.4	0.00	0.00	0.00	105.70	-16.3	0.00	0.00	4.75	105.55	-15.8	1.20	19.02	19.02	105.50	-15.7	1.20	18.84	23.77	105.50	-15.7	1.51	23.78	23.77	105.45	-15.6	1.51	23.55	28.53	105.45	-15.6	1.11	17.29	17.29	105.40	-15.4	1.11	17.13	19.87	105.10	-14.5	2.44	35.34	35.34	105.05	-14.4	2.44	34.98	37.92	105.05	-14.4	2.64	37.92	37.92	105.00	-14.2	2.64	37.53	40.50	105.00	-14.2	2.85	40.50	40.50	104.95	-14.0	2.85	40.05	41.87	104.73	-13.4	3.53	47.38	47.37
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<table><tr><td>104.68</td><td>-13.3</td><td>3.53</td><td>46.82</td><td>48.75</td></tr><tr><td>104.68</td><td>-13.3</td><td>3.68</td><td>48.75</td><td>48.75</td></tr><tr><td>104.63</td><td>-13.1</td><td>3.68</td><td>48.24</td><td>49.97</td></tr><tr><td>104.40</td><td>-12.4</td><td>4.52</td><td>56.05</td><td>56.04</td></tr><tr><td>104.35</td><td>-12.3</td><td>4.52</td><td>55.41</td><td>57.26</td></tr><tr><td>104.35</td><td>-12.3</td><td>4.67</td><td>57.26</td><td>57.26</td></tr><tr><td>104.30</td><td>-12.1</td><td>4.67</td><td>56.54</td><td>58.59</td></tr><tr><td>104.14</td><td>-11.6</td><td>5.00</td><td>58.23</td><td>62.57</td></tr><tr><td>104.09</td><td>-11.5</td><td>5.00</td><td>57.46</td><td>63.90</td></tr><tr><td>104.09</td><td>-11.5</td><td>5.00</td><td>57.46</td><td>63.90</td></tr><tr><td>104.04</td><td>-11.3</td><td>5.00</td><td>56.69</td><td>65.23</td></tr><tr><td>103.73</td><td>-10.4</td><td>5.00</td><td>52.06</td><td>73.21</td></tr><tr><td>103.68</td><td>-10.3</td><td>5.00</td><td>51.29</td><td>74.54</td></tr><tr><td>103.68</td><td>-10.3</td><td>5.00</td><td>51.29</td><td>86.27</td></tr><tr><td>103.68</td><td>-10.3</td><td>5.00</td><td>51.26</td><td>86.33</td></tr><tr><td>103.50</td><td>-9.7</td><td>5.00</td><td>48.57</td><td>90.98</td></tr><tr><td>103.45</td><td>-9.6</td><td>5.00</td><td>47.90</td><td>92.14</td></tr><tr><td>103.45</td><td>-9.6</td><td>5.00</td><td>47.90</td><td>92.14</td></tr><tr><td>103.39</td><td>-9.4</td><td>5.00</td><td>46.98</td><td>93.74</td></tr><tr><td>103.39</td><td>-9.4</td><td>5.00</td><td>46.98</td><td>93.74</td></tr><tr><td>103.33</td><td>-9.2</td><td>5.00</td><td>46.06</td><td>95.35</td></tr><tr><td>103.33</td><td>-9.2</td><td>5.00</td><td>46.06</td><td>95.35</td></tr><tr><td>103.28</td><td>-9.1</td><td>5.00</td><td>45.28</td><td>96.70</td></tr><tr><td>103.28</td><td>-9.1</td><td>5.00</td><td>45.28</td><td>96.70</td></tr><tr><td>103.22</td><td>-8.9</td><td>5.00</td><td>44.50</td><td>98.06</td></tr><tr><td>103.22</td><td>-8.9</td><td>5.00</td><td>44.50</td><td>98.06</td></tr><tr><td>103.20</td><td>-8.8</td><td>5.00</td><td>44.22</td><td>98.55</td></tr><tr><td>103.20</td><td>-8.8</td><td>5.00</td><td>44.22</td><td>98.55</td></tr><tr><td>103.14</td><td>-8.7</td><td>5.00</td><td>43.30</td><td>100.15</td></tr><tr><td>103.14</td><td>-8.7</td><td>5.00</td><td>43.30</td><td>100.15</td></tr><tr><td>103.08</td><td>-8.5</td><td>5.00</td><td>42.38</td><td>101.75</td></tr><tr><td>103.08</td><td>-8.5</td><td>5.00</td><td>42.38</td><td>101.75</td></tr><tr><td>103.03</td><td>-8.3</td><td>5.00</td><td>41.71</td><td>102.93</td></tr><tr><td>103.03</td><td>-8.3</td><td>5.00</td><td>41.71</td><td>102.93</td></tr><tr><td>102.99</td><td>-8.2</td><td>5.00</td><td>41.04</td><td>104.10</td></tr><tr><td>102.99</td><td>-8.2</td><td>5.00</td><td>41.04</td><td>104.10</td></tr><tr><td>102.97</td><td>-8.2</td><td>5.00</td><td>40.80</td><td>104.52</td></tr><tr><td>102.97</td><td>-8.2</td><td>5.00</td><td>40.80</td><td>104.52</td></tr><tr><td>102.96</td><td>-8.1</td><td>5.00</td><td>40.56</td><td>104.96</td></tr><tr><td>102.96</td><td>-8.1</td><td>5.00</td><td>40.56</td><td>104.96</td></tr><tr><td>102.89</td><td>-7.9</td><td>5.00</td><td>39.64</td><td>106.56</td></tr><tr><td>102.89</td><td>-7.9</td><td>5.00</td><td>39.64</td><td>106.56</td></tr><tr><td>102.83</td><td>-7.7</td><td>5.00</td><td>38.74</td><td>108.16</td></tr><tr><td>102.83</td><td>-7.7</td><td>5.00</td><td>38.74</td><td>108.16</td></tr><tr><td>102.77</td><td>-7.6</td><td>5.00</td><td>37.83</td><td>109.77</td></tr><tr><td>102.77</td><td>-7.6</td><td>5.00</td><td>37.83</td><td>109.77</td></tr><tr><td>102.71</td><td>-7.4</td><td>5.00</td><td>36.92</td><td>111.37</td></tr><tr><td>102.71</td><td>-7.4</td><td>5.00</td><td>36.92</td><td>111.37</td></tr><tr><td>102.69</td><td>-7.3</td><td>5.00</td><td>36.63</td><td>111.90</td></tr><tr><td>102.69</td><td>-7.3</td><td>5.00</td><td>36.63</td><td>111.90</td></tr><tr><td>102.64</td><td>-7.2</td><td>5.00</td><td>36.02</td><td>112.97</td></tr><tr><td>102.64</td><td>-7.2</td><td>5.00</td><td>36.02</td><td>112.97</td></tr><tr><td>102.61</td><td>-7.1</td><td>5.00</td><td>35.54</td><td>113.83</td></tr><tr><td>102.61</td><td>-7.1</td><td>5.00</td><td>35.54</td><td>113.83</td></tr><tr><td>102.57</td><td>-7.0</td><td>5.00</td><td>34.88</td><td>115.00</td></tr><tr><td>102.57</td><td>-7.0</td><td>5.00</td><td>34.88</td><td>115.00</td></tr><tr><td>102.52</td><td>-6.8</td><td>5.00</td><td>34.22</td><td>116.18</td></tr><tr><td>102.52</td><td>-6.8</td><td>30.21</td><td>206.79</td><td>206.78</td></tr><tr><td>102.48</td><td>-6.7</td><td>30.21</td><td>202.99</td><td>209.80</td></tr><tr><td>102.43</td><td>-6.6</td><td>32.28</td><td>212.84</td><td>212.82</td></tr><tr><td>102.39</td><td>-6.5</td><td>32.28</td><td>208.80</td><td>215.85</td></tr><tr><td>102.39</td><td>-6.5</td><td>33.37</td><td>215.86</td><td>215.85</td></tr><tr><td>102.34</td><td>-6.3</td><td>33.37</td><td>211.57</td><td>218.96</td></tr><tr><td>102.21</td><td>-6.0</td><td>38.33</td><td>228.32</td><td>228.30</td></tr><tr><td>102.16</td><td>-5.8</td><td>38.33</td><td>223.45</td><td>231.42</td></tr><tr><td>102.16</td><td>-5.8</td><td>39.70</td><td>231.43</td><td>231.42</td></tr><tr><td>102.09</td><td>-5.6</td><td>39.70</td><td>223.44</td><td>236.38</td></tr><tr><td>102.09</td><td>-5.6</td><td>42.00</td><td>236.40</td><td>236.38</td></tr><tr><td>102.04</td><td>-5.5</td><td>42.00</td><td>230.59</td><td>239.80</td></tr><tr><td>101.84</td><td>-4.9</td><td>50.00</td><td>247.16</td><td>253.49</td></tr><tr><td>101.79</td><td>-4.8</td><td>50.00</td><td>240.40</td><td>256.91</td></tr></table>							104.68	-13.3	3.53	46.82	48.75	104.68	-13.3	3.68	48.75	48.75	104.63	-13.1	3.68	48.24	49.97	104.40	-12.4	4.52	56.05	56.04	104.35	-12.3	4.52	55.41	57.26	104.35	-12.3	4.67	57.26	57.26	104.30	-12.1	4.67	56.54	58.59	104.14	-11.6	5.00	58.23	62.57	104.09	-11.5	5.00	57.46	63.90	104.09	-11.5	5.00	57.46	63.90	104.04	-11.3	5.00	56.69	65.23	103.73	-10.4	5.00	52.06	73.21	103.68	-10.3	5.00	51.29	74.54	103.68	-10.3	5.00	51.29	86.27	103.68	-10.3	5.00	51.26	86.33	103.50	-9.7	5.00	48.57	90.98	103.45	-9.6	5.00	47.90	92.14	103.45	-9.6	5.00	47.90	92.14	103.39	-9.4	5.00	46.98	93.74	103.39	-9.4	5.00	46.98	93.74	103.33	-9.2	5.00	46.06	95.35	103.33	-9.2	5.00	46.06	95.35	103.28	-9.1	5.00	45.28	96.70	103.28	-9.1	5.00	45.28	96.70	103.22	-8.9	5.00	44.50	98.06	103.22	-8.9	5.00	44.50	98.06	103.20	-8.8	5.00	44.22	98.55	103.20	-8.8	5.00	44.22	98.55	103.14	-8.7	5.00	43.30	100.15	103.14	-8.7	5.00	43.30	100.15	103.08	-8.5	5.00	42.38	101.75	103.08	-8.5	5.00	42.38	101.75	103.03	-8.3	5.00	41.71	102.93	103.03	-8.3	5.00	41.71	102.93	102.99	-8.2	5.00	41.04	104.10	102.99	-8.2	5.00	41.04	104.10	102.97	-8.2	5.00	40.80	104.52	102.97	-8.2	5.00	40.80	104.52	102.96	-8.1	5.00	40.56	104.96	102.96	-8.1	5.00	40.56	104.96	102.89	-7.9	5.00	39.64	106.56	102.89	-7.9	5.00	39.64	106.56	102.83	-7.7	5.00	38.74	108.16	102.83	-7.7	5.00	38.74	108.16	102.77	-7.6	5.00	37.83	109.77	102.77	-7.6	5.00	37.83	109.77	102.71	-7.4	5.00	36.92	111.37	102.71	-7.4	5.00	36.92	111.37	102.69	-7.3	5.00	36.63	111.90	102.69	-7.3	5.00	36.63	111.90	102.64	-7.2	5.00	36.02	112.97	102.64	-7.2	5.00	36.02	112.97	102.61	-7.1	5.00	35.54	113.83	102.61	-7.1	5.00	35.54	113.83	102.57	-7.0	5.00	34.88	115.00	102.57	-7.0	5.00	34.88	115.00	102.52	-6.8	5.00	34.22	116.18	102.52	-6.8	30.21	206.79	206.78	102.48	-6.7	30.21	202.99	209.80	102.43	-6.6	32.28	212.84	212.82	102.39	-6.5	32.28	208.80	215.85	102.39	-6.5	33.37	215.86	215.85	102.34	-6.3	33.37	211.57	218.96	102.21	-6.0	38.33	228.32	228.30	102.16	-5.8	38.33	223.45	231.42	102.16	-5.8	39.70	231.43	231.42	102.09	-5.6	39.70	223.44	236.38	102.09	-5.6	42.00	236.40	236.38	102.04	-5.5	42.00	230.59	239.80	101.84	-4.9	50.00	247.16	253.49	101.79	-4.8	50.00	240.40	256.91
104.68	-13.3	3.53	46.82	48.75																																																																																																																																																																																																																																																																																																																																																																					
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102.69	-7.3	5.00	36.63	111.90																																																																																																																																																																																																																																																																																																																																																																					
102.64	-7.2	5.00	36.02	112.97																																																																																																																																																																																																																																																																																																																																																																					
102.64	-7.2	5.00	36.02	112.97																																																																																																																																																																																																																																																																																																																																																																					
102.61	-7.1	5.00	35.54	113.83																																																																																																																																																																																																																																																																																																																																																																					
102.61	-7.1	5.00	35.54	113.83																																																																																																																																																																																																																																																																																																																																																																					
102.57	-7.0	5.00	34.88	115.00																																																																																																																																																																																																																																																																																																																																																																					
102.57	-7.0	5.00	34.88	115.00																																																																																																																																																																																																																																																																																																																																																																					
102.52	-6.8	5.00	34.22	116.18																																																																																																																																																																																																																																																																																																																																																																					
102.52	-6.8	30.21	206.79	206.78																																																																																																																																																																																																																																																																																																																																																																					
102.48	-6.7	30.21	202.99	209.80																																																																																																																																																																																																																																																																																																																																																																					
102.43	-6.6	32.28	212.84	212.82																																																																																																																																																																																																																																																																																																																																																																					
102.39	-6.5	32.28	208.80	215.85																																																																																																																																																																																																																																																																																																																																																																					
102.39	-6.5	33.37	215.86	215.85																																																																																																																																																																																																																																																																																																																																																																					
102.34	-6.3	33.37	211.57	218.96																																																																																																																																																																																																																																																																																																																																																																					
102.21	-6.0	38.33	228.32	228.30																																																																																																																																																																																																																																																																																																																																																																					
102.16	-5.8	38.33	223.45	231.42																																																																																																																																																																																																																																																																																																																																																																					
102.16	-5.8	39.70	231.43	231.42																																																																																																																																																																																																																																																																																																																																																																					
102.09	-5.6	39.70	223.44	236.38																																																																																																																																																																																																																																																																																																																																																																					
102.09	-5.6	42.00	236.40	236.38																																																																																																																																																																																																																																																																																																																																																																					
102.04	-5.5	42.00	230.59	239.80																																																																																																																																																																																																																																																																																																																																																																					
101.84	-4.9	50.00	247.16	253.49																																																																																																																																																																																																																																																																																																																																																																					
101.79	-4.8	50.00	240.40	256.91																																																																																																																																																																																																																																																																																																																																																																					
Schnitt:		Anlage P1 Schnitt 7L			Seite Anlage P117																																																																																																																																																																																																																																																																																																																																																																				
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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>101.79</div><div>-4.8</div><div>50.00</div><div>240.40</div><div>256.91</div></div><div><div>101.74</div><div>-4.7</div><div>50.00</div><div>233.53</div><div>260.40</div></div><div><div>101.74</div><div>-4.7</div><div>50.00</div><div>233.53</div><div>260.40</div></div><div><div>101.69</div><div>-4.5</div><div>50.00</div><div>226.69</div><div>263.89</div></div><div><div>101.69</div><div>-4.5</div><div>50.00</div><div>226.69</div><div>263.89</div></div><div><div>101.64</div><div>-4.4</div><div>50.00</div><div>220.10</div><div>267.28</div></div><div><div>101.64</div><div>-4.4</div><div>50.00</div><div>220.10</div><div>267.28</div></div><div><div>101.59</div><div>-4.3</div><div>50.00</div><div>213.54</div><div>270.67</div></div><div><div>101.55</div><div>-4.1</div><div>50.00</div><div>207.01</div><div>274.05</div></div><div><div>101.50</div><div>-4.0</div><div>50.00</div><div>200.51</div><div>277.44</div></div><div><div>101.50</div><div>-4.0</div><div>50.00</div><div>200.51</div><div>277.44</div></div><div><div>101.44</div><div>-3.9</div><div>50.00</div><div>193.27</div><div>281.22</div></div><div><div>101.28</div><div>-3.4</div><div>50.00</div><div>171.80</div><div>292.59</div></div><div><div>101.22</div><div>-3.3</div><div>50.00</div><div>164.71</div><div>296.37</div></div><div><div>101.22</div><div>-3.3</div><div>50.00</div><div>164.71</div><div>296.37</div></div><div><div>101.17</div><div>-3.2</div><div>50.00</div><div>158.00</div><div>299.98</div></div><div><div>101.12</div><div>-3.0</div><div>50.00</div><div>151.31</div><div>303.59</div></div><div><div>101.07</div><div>-2.9</div><div>50.00</div><div>144.66</div><div>307.20</div></div><div><div>101.07</div><div>-2.9</div><div>50.00</div><div>144.66</div><div>307.20</div></div><div><div>101.01</div><div>-2.8</div><div>50.00</div><div>138.04</div><div>310.81</div></div><div><div>100.80</div><div>-2.2</div><div>50.00</div><div>111.86</div><div>325.24</div></div><div><div>100.75</div><div>-2.1</div><div>50.00</div><div>105.38</div><div>328.85</div></div><div><div>100.75</div><div>-2.1</div><div>50.00</div><div>105.38</div><div>328.85</div></div><div><div>100.70</div><div>-2.0</div><div>50.00</div><div>98.93</div><div>332.46</div></div><div><div>100.33</div><div>-1.1</div><div>50.00</div><div>54.42</div><div>357.72</div></div><div><div>100.28</div><div>-1.0</div><div>50.00</div><div>48.14</div><div>361.33</div></div><div><div>100.28</div><div>-1.0</div><div>50.00</div><div>48.14</div><div>361.33</div></div><div><div>100.24</div><div>-0.9</div><div>50.00</div><div>42.50</div><div>364.58</div></div><div><div>100.14</div><div>-0.6</div><div>50.00</div><div>31.27</div><div>371.07</div></div><div><div>100.09</div><div>-0.5</div><div>50.00</div><div>25.66</div><div>374.32</div></div><div><div>100.09</div><div>-0.5</div><div>50.00</div><div>25.66</div><div>374.32</div></div><div><div>100.05</div><div>-0.4</div><div>50.00</div><div>20.07</div><div>377.57</div></div><div><div>100.05</div><div>-0.4</div><div>50.00</div><div>20.07</div><div>377.57</div></div><div><div>100.00</div><div>-0.3</div><div>50.00</div><div>14.15</div><div>381.02</div></div><div><div>99.15</div><div>1.7</div><div>50.00</div><div>-85.73</div><div>439.62</div></div><div><div>99.10</div><div>1.8</div><div>50.00</div><div>-91.59</div><div>443.07</div></div></div> <div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.13448073 Theoretischer Fußpunkt = 99.099 m</div><div>Einbindetiefe tg = 6.65 m Profillänge = 7.00 m</div></div>		
Schnitt: Anlage P1 Schnitt 7L	Seite Anlage P1/8	
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>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: <math>P_{v,k} + G'_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math></div> <div><math>G_{,k} = 132.46 \text{ kN/m}</math></div> <div><math>G'_{,k} = 0.00 \text{ kN/m}</math></div> <div><math>P_{v,k} = 0.00 \text{ kN/m}</math></div> <div><math>E_{av,k} = 59.49 \text{ kN/m}</math> (<math>E_{ah,k} = 346.02 \text{ kN/m}</math>)</div> <div><math>B_{v,k} = 191.08</math></div> <div>Summe <math>V_{,k} = 0.88 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></div> <div>(gemittelt von 99.98 bis 96.46 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></div> <div><math>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}</math></div> <div>Mantelreibung</div> <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>105.75</td><td>105.45</td><td>0.00</td><td>S1: Auffüllungen</td></tr><tr><td>105.45</td><td>103.68</td><td>0.00</td><td>S2: Auelehm (über GS)</td></tr><tr><td>103.68</td><td>102.52</td><td>0.00</td><td>S2: Auelehm (unter GS)</td></tr><tr><td>102.52</td><td>99.10</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <div>Mantelfläche bis 99.10 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math></div> <div><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 188.10 / 1.40 = 134.36 \text{ kN/m}</math></div> <div><math>R_{,d} = R_{b,d} + R_{s1,d} = 999.41 \text{ kN/m}</math></div> <div>Einwirkungen</div> <div><math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 158.95 - 0.00 + 68.42 + 0.00 = 227.37 \text{ kN/m}</math></div> <div><math>\implies \mu = V_{,d} / R_{,d} = 227.37 / 999.41 = 0.23</math></div> <div>Horizontaler Wasserdruck herkömmlich bestimmt.</div>			von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.10	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	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	99.10	55.00	s3: Flussskies, -sand																			
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/9																				
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 119																				
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 7 Datei: 02_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 P1 Schnitt 7L		Seite Anlage P1/10
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	104.35	0.00	0.00	-111.00	0.00	0.00	0.00

Erddruckumlagerung: EAB 2012 Bild EB 70-1.c

Art des Fußlagers:  
Profillänge automatisch und Fuß gebettet  
Profillänge = 9.50 m

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

Ausnutzungsgrad  $\mu_e = 550.897 / 561.385 = 0.981$   
Bettungslager  $B_{h,d} = 550.897 \text{ kN/m}$   
Erddwiderstand  $E_{ph,d} = 561.385 \text{ kN/m}$

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	105.00	0.00	1.00	-220.97	-191.58	-191.58	-102.85	6.900E+4	2.100E+7	-244.26 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]
-1.00	105.00	-16.3	0.0	-225.45	0.00	0.00
-0.90	105.00	-16.7	0.0	-225.45	0.00	0.00
-0.90	105.00	-16.7	0.0	-225.45	0.00	0.00
-0.80	105.00	-17.0	0.0	-225.45	0.00	0.00
-0.70	105.00	-17.3	0.0	-225.45	0.00	0.00
-0.60	105.00	-17.6	0.0	-225.45	0.00	0.00
-0.50	105.00	-18.0	0.0	-225.45	0.00	0.00
-0.40	105.00	-18.3	0.0	-225.45	0.00	0.00
-0.30	105.00	-18.6	0.0	-225.45	0.00	0.00
-0.20	105.00	-19.0	0.0	-225.45	0.00	0.00
-0.10	105.00	-19.3	0.0	-225.45	0.00	0.00
0.00	105.00	-19.6	0.0	-225.45	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\01\_BS 7\_LF1.vrb  
eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	105.00	-0.0142

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 P1	Schnitt 7L	Seite Anlage P1/11
Kapitel: 2	LF 2 (BS-T)	Archiv Nr.: 11/19
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>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>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>97.051</td><td>57.926</td><td>58.278</td><td>5.00</td><td>5.00</td></tr><tr><td>97.051</td><td>96.599</td><td>58.278</td><td>58.477</td><td>5.00</td><td>5.00</td></tr><tr><td>96.599</td><td>95.031</td><td>58.477</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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	97.051	57.926	58.278	5.00	5.00	97.051	96.599	58.278	58.477	5.00	5.00	96.599	95.031	58.477	59.163	5.00	5.00	95.031	80.000	59.163	120.815	5.00	5.00
Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																					
[-]	[mNHN]	[-]	[-]	[°]	[°]	[°]	[-]																																																																																																																																																																																																																																																																																																																																					
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4	80.00	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																					
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103.328	103.223	26.851	26.851	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
103.223	103.204	26.851	26.851	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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103.079	102.988	26.851	26.851	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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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																																																																																																																																																																																																																																																																																																																																							
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102.163	102.091	98.478	99.174	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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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																																																																																																																																																																																																																																																																																																																																							
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100.094	100.047	48.553	48.933	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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97.854	97.051	57.926	58.278	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
97.051	96.599	58.278	58.477	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
96.599	95.031	58.477	59.163	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
95.031	80.000	59.163	120.815	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>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 -233.40 97.05 96.60 -233.40 -252.61 96.60 95.03 -252.61 -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 -225.5 105.00 -23.9 173.0 -28.3 104.68 -30.9 156.3 24.4 104.35 -38.1 139.0 73.1 104.35 -38.1 5.8 73.1 104.05 -44.7 -5.4 73.2 103.68 -52.7 -18.9 68.7 103.45 -59.5 -27.3 63.5 103.33 -63.2 -31.9 59.8 103.22 -66.4 -35.8 56.2 103.20 -67.0 -36.5 55.5 103.08 -70.7 -41.1 50.7 102.99 -73.4 -44.4 46.8 102.97 -73.9 -45.0 46.1 102.96 -74.4 -45.6 45.3 102.83 -78.2 -50.2 39.4 102.71 -81.9 -54.8 32.9 102.69 -82.5 -55.6 31.7 102.64 -83.8 -57.1 29.4 102.61 -84.8 -58.3 27.5 102.55 -86.6 -60.6 23.8</div>		
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/13
Kapitel: 2 LF 2 (BS-T)		Archiv Nr.: 1113
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>102.52 -88.5 -65.9 21.9</div><div>102.39 -91.1 -82.5 12.2</div><div>102.16 -94.3 -106.6 -9.3</div><div>102.09 -95.0 -113.0 -17.2</div><div>101.84 -96.1 -130.6 -47.5</div><div>101.79 -96.1 -133.2 -54.0</div><div>101.69 -95.8 -137.4 -67.7</div><div>101.50 -94.4 -141.6 -95.1</div><div>101.22 -90.4 -139.4 -133.9</div><div>101.07 -87.1 -133.8 -155.3</div><div>100.75 -78.1 -114.8 -194.5</div><div>100.28 -58.8 -69.2 -238.5</div><div>100.09 -49.2 -46.1 -249.4</div><div>100.05 -46.6 -39.9 -251.4</div><div>99.75 -28.6 3.0 -257.1</div><div>99.05 8.2 88.6 -221.9</div><div>98.05 26.3 120.0 -109.6</div><div>97.85 25.5 114.6 -86.2</div><div>97.05 13.7 56.9 -13.5</div><div>96.60 13.4 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</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>-0.4</div><div>0.0</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>105.45</div><div>-12.3</div><div>-26.2</div><div>-8.5</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>105.00</div><div>-20.8</div><div>-45.6</div><div>-24.6</div><div>-191.6</div></div><div><div>105.00</div><div>-20.8</div><div>146.0</div><div>-24.6</div><div></div></div><div><div>104.68</div><div>-26.9</div><div>131.5</div><div>19.8</div><div></div></div><div><div>104.35</div><div>-33.1</div><div>116.6</div><div>60.8</div><div></div></div><div><div>104.35</div><div>-33.1</div><div>5.6</div><div>60.8</div><div></div></div><div><div>104.05</div><div>-38.8</div><div>-4.0</div><div>61.0</div><div></div></div><div><div>103.68</div><div>-45.8</div><div>-15.7</div><div>57.4</div><div></div></div><div><div>103.45</div><div>-51.7</div><div>-23.0</div><div>53.0</div><div></div></div><div><div>103.33</div><div>-55.0</div><div>-27.0</div><div>49.9</div><div></div></div><div><div>103.22</div><div>-57.7</div><div>-30.3</div><div>46.8</div><div></div></div><div><div>103.20</div><div>-58.2</div><div>-30.9</div><div>46.3</div><div></div></div><div><div>103.08</div><div>-61.5</div><div>-34.9</div><div>42.2</div><div></div></div><div><div>102.99</div><div>-63.9</div><div>-37.8</div><div>38.9</div><div></div></div><div><div>102.97</div><div>-64.3</div><div>-38.3</div><div>38.2</div><div></div></div><div><div>102.96</div><div>-64.7</div><div>-38.8</div><div>37.6</div><div></div></div><div><div>102.83</div><div>-68.0</div><div>-42.8</div><div>32.5</div><div></div></div><div><div>102.71</div><div>-71.2</div><div>-46.8</div><div>27.0</div><div></div></div><div><div>102.69</div><div>-71.8</div><div>-47.4</div><div>26.0</div><div></div></div><div><div>102.64</div><div>-72.8</div><div>-48.7</div><div>24.0</div><div></div></div><div><div>102.61</div><div>-73.7</div><div>-49.8</div><div>22.3</div><div></div></div><div><div>102.55</div><div>-75.3</div><div>-51.7</div><div>19.2</div><div></div></div><div><div>102.52</div><div>-77.0</div><div>-56.4</div><div>17.6</div><div></div></div><div><div>102.39</div><div>-79.3</div><div>-70.8</div><div>9.3</div><div></div></div><div><div>102.16</div><div>-82.0</div><div>-91.7</div><div>-9.2</div><div></div></div><div><div>102.09</div><div>-82.7</div><div>-97.3</div><div>-15.9</div><div></div></div><div><div>101.84</div><div>-83.6</div><div>-112.5</div><div>-42.1</div><div></div></div><div><div>101.79</div><div>-83.6</div><div>-114.8</div><div>-47.7</div><div></div></div><div><div>101.69</div><div>-83.4</div><div>-118.4</div><div>-59.5</div><div></div></div><div><div>101.50</div><div>-82.2</div><div>-122.2</div><div>-83.1</div><div></div></div><div><div>101.22</div><div>-78.8</div><div>-120.3</div><div>-116.6</div><div></div></div><div><div>101.07</div><div>-75.9</div><div>-115.4</div><div>-135.1</div><div></div></div><div><div>100.75</div><div>-68.1</div><div>-99.0</div><div>-168.9</div><div></div></div><div><div>100.28</div><div>-51.5</div><div>-59.6</div><div>-206.8</div><div></div></div><div><div>100.09</div><div>-43.1</div><div>-39.6</div><div>-216.2</div><div></div></div><div><div>100.05</div><div>-40.9</div><div>-34.3</div><div>-217.9</div><div></div></div><div><div>99.75</div><div>-25.3</div><div>2.9</div><div>-222.7</div><div></div></div><div><div>99.05</div><div>6.6</div><div>76.8</div><div>-192.2</div><div></div></div><div><div>98.05</div><div>22.3</div><div>103.9</div><div>-94.9</div><div></div></div><div><div>97.85</div><div>21.6</div><div>99.2</div><div>-74.6</div><div></div></div><div><div>97.05</div><div>11.2</div><div>49.3</div><div>-11.7</div><div></div></div><div><div>96.60</div><div>10.9</div><div>0.0</div><div>0.0</div><div></div></div></div></div>					
Schnitt:		Anlage P1 Schnitt 7L		Seite Anlage P1/14	
Kapitel:		2 LF 2 (BS-T)		Archiv Nr.: 1114	
Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	

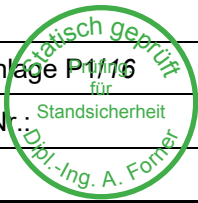


Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																																									
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<div><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><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>-0.4</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-11.4</td><td>-24.2</td><td>-7.2</td><td></td><td></td></tr><tr><td>105.45</td><td>-12.3</td><td>-26.2</td><td>-8.5</td><td></td><td></td></tr><tr><td>105.05</td><td>-19.9</td><td>-43.3</td><td>-22.4</td><td></td><td></td></tr><tr><td>105.00</td><td>-20.8</td><td>-45.6</td><td>-24.6</td><td>-191.6</td><td></td></tr><tr><td>105.00</td><td>-20.8</td><td>146.0</td><td>-24.6</td><td></td><td></td></tr><tr><td>104.68</td><td>-26.9</td><td>131.5</td><td>19.8</td><td></td><td></td></tr><tr><td>104.35</td><td>-33.1</td><td>116.6</td><td>60.8</td><td></td><td></td></tr><tr><td>104.35</td><td>-33.1</td><td>5.6</td><td>60.8</td><td></td><td></td></tr><tr><td>104.05</td><td>-38.8</td><td>-4.0</td><td>61.0</td><td></td><td></td></tr><tr><td>103.68</td><td>-45.8</td><td>-15.7</td><td>57.4</td><td></td><td></td></tr><tr><td>103.45</td><td>-51.7</td><td>-23.0</td><td>53.0</td><td></td><td></td></tr><tr><td>103.33</td><td>-55.0</td><td>-27.0</td><td>49.9</td><td></td><td></td></tr><tr><td>103.22</td><td>-57.7</td><td>-30.3</td><td>46.8</td><td></td><td></td></tr><tr><td>103.20</td><td>-58.2</td><td>-30.9</td><td>46.3</td><td></td><td></td></tr><tr><td>103.08</td><td>-61.5</td><td>-34.9</td><td>42.2</td><td></td><td></td></tr><tr><td>102.99</td><td>-63.9</td><td>-37.8</td><td>38.9</td><td></td><td></td></tr><tr><td>102.97</td><td>-64.3</td><td>-38.3</td><td>38.2</td><td></td><td></td></tr><tr><td>102.96</td><td>-64.7</td><td>-38.8</td><td>37.6</td><td></td><td></td></tr><tr><td>102.83</td><td>-68.0</td><td>-42.8</td><td>32.5</td><td></td><td></td></tr><tr><td>102.71</td><td>-71.2</td><td>-46.8</td><td>27.0</td><td></td><td></td></tr><tr><td>102.69</td><td>-71.8</td><td>-47.4</td><td>26.0</td><td></td><td></td></tr><tr><td>102.64</td><td>-72.8</td><td>-48.7</td><td>24.0</td><td></td><td></td></tr><tr><td>102.61</td><td>-73.7</td><td>-49.8</td><td>22.3</td><td></td><td></td></tr><tr><td>102.55</td><td>-75.3</td><td>-51.7</td><td>19.2</td><td></td><td></td></tr><tr><td>102.52</td><td>-77.0</td><td>-56.4</td><td>17.6</td><td></td><td></td></tr><tr><td>102.39</td><td>-79.3</td><td>-70.8</td><td>9.3</td><td></td><td></td></tr><tr><td>102.16</td><td>-82.0</td><td>-91.7</td><td>-9.2</td><td></td><td></td></tr><tr><td>102.09</td><td>-82.7</td><td>-97.3</td><td>-15.9</td><td></td><td></td></tr><tr><td>101.84</td><td>-83.6</td><td>-112.5</td><td>-42.1</td><td></td><td></td></tr><tr><td>101.79</td><td>-83.6</td><td>-114.8</td><td>-47.7</td><td></td><td></td></tr><tr><td>101.69</td><td>-83.4</td><td>-118.4</td><td>-59.5</td><td></td><td></td></tr><tr><td>101.50</td><td>-82.2</td><td>-122.2</td><td>-83.1</td><td></td><td></td></tr><tr><td>101.22</td><td>-78.8</td><td>-120.3</td><td>-116.6</td><td></td><td></td></tr><tr><td>101.07</td><td>-75.9</td><td>-115.4</td><td>-135.1</td><td></td><td></td></tr><tr><td>100.75</td><td>-68.1</td><td>-99.0</td><td>-168.9</td><td></td><td></td></tr><tr><td>100.28</td><td>-51.5</td><td>-59.6</td><td>-206.8</td><td></td><td></td></tr><tr><td>100.09</td><td>-43.1</td><td>-39.6</td><td>-216.2</td><td></td><td></td></tr><tr><td>100.05</td><td>-40.9</td><td>-34.3</td><td>-217.9</td><td></td><td></td></tr><tr><td>99.75</td><td>-25.3</td><td>2.9</td><td>-222.7</td><td></td><td></td></tr><tr><td>99.05</td><td>6.6</td><td>76.8</td><td>-192.2</td><td></td><td></td></tr><tr><td>98.05</td><td>22.3</td><td>103.9</td><td>-94.9</td><td></td><td></td></tr><tr><td>97.85</td><td>21.6</td><td>99.2</td><td>-74.6</td><td></td><td></td></tr><tr><td>97.05</td><td>11.2</td><td>49.3</td><td>-11.7</td><td></td><td></td></tr><tr><td>96.60</td><td>10.9</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>105.00</td><td>0.0</td><td>0.0</td><td>0.0</td><td>-89.7</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>103.68</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><tr><td>102.96</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	-0.4	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	-191.6		105.00	-20.8	146.0	-24.6			104.68	-26.9	131.5	19.8			104.35	-33.1	116.6	60.8			104.35	-33.1	5.6	60.8			104.05	-38.8	-4.0	61.0			103.68	-45.8	-15.7	57.4			103.45	-51.7	-23.0	53.0			103.33	-55.0	-27.0	49.9			103.22	-57.7	-30.3	46.8			103.20	-58.2	-30.9	46.3			103.08	-61.5	-34.9	42.2			102.99	-63.9	-37.8	38.9			102.97	-64.3	-38.3	38.2			102.96	-64.7	-38.8	37.6			102.83	-68.0	-42.8	32.5			102.71	-71.2	-46.8	27.0			102.69	-71.8	-47.4	26.0			102.64	-72.8	-48.7	24.0			102.61	-73.7	-49.8	22.3			102.55	-75.3	-51.7	19.2			102.52	-77.0	-56.4	17.6			102.39	-79.3	-70.8	9.3			102.16	-82.0	-91.7	-9.2			102.09	-82.7	-97.3	-15.9			101.84	-83.6	-112.5	-42.1			101.79	-83.6	-114.8	-47.7			101.69	-83.4	-118.4	-59.5			101.50	-82.2	-122.2	-83.1			101.22	-78.8	-120.3	-116.6			101.07	-75.9	-115.4	-135.1			100.75	-68.1	-99.0	-168.9			100.28	-51.5	-59.6	-206.8			100.09	-43.1	-39.6	-216.2			100.05	-40.9	-34.3	-217.9			99.75	-25.3	2.9	-222.7			99.05	6.6	76.8	-192.2			98.05	22.3	103.9	-94.9			97.85	21.6	99.2	-74.6			97.05	11.2	49.3	-11.7			96.60	10.9	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	-89.7		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			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		
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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>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-18.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-18.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-17.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-17.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-16.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-16.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-15.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-15.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.99</td><td>-14.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.73</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-13.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-12.7</td><td>-</td><td>-</td><td>-</td></tr></table>						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	96.60	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-19.7	-	-	-	106.09	-19.7	-	-	-	106.09	-19.7	-	-	-	106.04	-19.5	-	-	-	105.55	-18.3	-	-	-	105.50	-18.2	-	-	-	105.50	-18.2	-	-	-	105.45	-18.1	-	-	-	105.45	-18.1	-	-	-	105.40	-18.0	-	-	-	105.10	-17.2	-	-	-	105.05	-17.1	-	-	-	105.05	-17.1	-	-	-	105.00	-17.0	-	-	-	105.00	-17.0	-	-	-	104.95	-16.9	-	-	-	104.73	-16.3	-	-	-	104.68	-16.2	-	-	-	104.68	-16.2	-	-	-	104.64	-16.1	-	-	-	104.40	-15.5	-	-	-	104.35	-15.4	-	-	-	104.35	-15.4	-	-	-	104.30	-15.3	-	-	-	104.10	-14.8	-	-	-	104.05	-14.6	-	-	-	104.05	-14.6	-	-	-	103.99	-14.5	-	-	-	103.73	-13.9	-	-	-	103.68	-13.7	-	-	-	103.68	-13.7	-	-	-	103.68	-13.7	-	-	-	103.50	-13.3	-	-	-	103.45	-13.1	-	-	-	103.45	-13.1	-	-	-	103.39	-13.0	-	-	-	103.39	-13.0	-	-	-	103.33	-12.8	-	-	-	103.33	-12.8	-	-	-	103.28	-12.7	-	-	-
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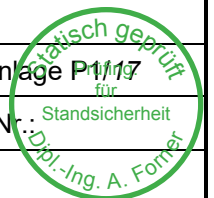
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																
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<table><tr><td>100.75</td><td>-6.2</td><td>18.98</td><td>117.61</td><td>123.61</td></tr><tr><td>100.75</td><td>-6.2</td><td>19.95</td><td>123.61</td><td>123.61</td></tr><tr><td>100.70</td><td>-6.1</td><td>19.95</td><td>121.11</td><td>127.21</td></tr><tr><td>100.33</td><td>-5.2</td><td>29.23</td><td>152.49</td><td>152.47</td></tr><tr><td>100.28</td><td>-5.1</td><td>29.23</td><td>149.03</td><td>156.08</td></tr><tr><td>100.28</td><td>-5.1</td><td>30.62</td><td>156.10</td><td>156.08</td></tr><tr><td>100.24</td><td>-5.0</td><td>30.62</td><td>152.86</td><td>159.33</td></tr><tr><td>100.14</td><td>-4.8</td><td>34.67</td><td>165.84</td><td>165.83</td></tr><tr><td>100.09</td><td>-4.7</td><td>34.67</td><td>162.26</td><td>169.08</td></tr><tr><td>100.09</td><td>-4.7</td><td>36.13</td><td>169.09</td><td>169.08</td></tr><tr><td>100.05</td><td>-4.6</td><td>36.13</td><td>165.38</td><td>172.32</td></tr><tr><td>100.05</td><td>-4.6</td><td>37.65</td><td>172.34</td><td>172.32</td></tr><tr><td>100.00</td><td>-4.5</td><td>37.65</td><td>168.28</td><td>175.76</td></tr><tr><td>99.80</td><td>-4.0</td><td>46.82</td><td>189.55</td><td>189.53</td></tr><tr><td>99.75</td><td>-3.9</td><td>46.82</td><td>184.72</td><td>192.97</td></tr><tr><td>99.75</td><td>-3.9</td><td>48.92</td><td>192.99</td><td>192.97</td></tr><tr><td>99.70</td><td>-3.8</td><td>48.92</td><td>187.99</td><td>196.42</td></tr><tr><td>99.10</td><td>-2.7</td><td>50.00</td><td>134.45</td><td>237.72</td></tr><tr><td>99.05</td><td>-2.6</td><td>50.00</td><td>129.92</td><td>241.16</td></tr><tr><td>99.05</td><td>-2.6</td><td>50.00</td><td>129.92</td><td>241.16</td></tr><tr><td>99.00</td><td>-2.5</td><td>50.00</td><td>125.44</td><td>244.60</td></tr><tr><td>98.10</td><td>-1.0</td><td>50.00</td><td>50.57</td><td>306.55</td></tr><tr><td>98.05</td><td>-0.9</td><td>50.00</td><td>46.67</td><td>310.00</td></tr><tr><td>98.05</td><td>-0.9</td><td>50.00</td><td>46.67</td><td>310.00</td></tr><tr><td>98.00</td><td>-0.9</td><td>50.00</td><td>42.79</td><td>313.44</td></tr><tr><td>97.90</td><td>-0.7</td><td>50.00</td><td>35.08</td><td>320.32</td></tr><tr><td>97.85</td><td>-0.6</td><td>50.00</td><td>31.26</td><td>323.76</td></tr><tr><td>97.85</td><td>-0.6</td><td>50.00</td><td>31.26</td><td>323.76</td></tr><tr><td>97.80</td><td>-0.5</td><td>50.00</td><td>27.42</td><td>327.23</td></tr><tr><td>97.10</td><td>0.5</td><td>50.00</td><td>-25.22</td><td>375.80</td></tr><tr><td>97.05</td><td>0.6</td><td>50.00</td><td>-28.94</td><td>379.27</td></tr><tr><td>97.05</td><td>0.6</td><td>50.00</td><td>-28.94</td><td>379.27</td></tr><tr><td>97.00</td><td>0.7</td><td>50.00</td><td>-32.65</td><td>382.74</td></tr><tr><td>96.65</td><td>1.2</td><td>50.00</td><td>-58.59</td><td>407.02</td></tr><tr><td>96.60</td><td>1.2</td><td>50.00</td><td>-62.30</td><td>410.49</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08451399 Theoretischer Fußpunkt = 96.599 m</p> <p>Einbindetiefe tg = 5.95 m Profillänge = 9.50 m</p>							100.75	-6.2	18.98	117.61	123.61	100.75	-6.2	19.95	123.61	123.61	100.70	-6.1	19.95	121.11	127.21	100.33	-5.2	29.23	152.49	152.47	100.28	-5.1	29.23	149.03	156.08	100.28	-5.1	30.62	156.10	156.08	100.24	-5.0	30.62	152.86	159.33	100.14	-4.8	34.67	165.84	165.83	100.09	-4.7	34.67	162.26	169.08	100.09	-4.7	36.13	169.09	169.08	100.05	-4.6	36.13	165.38	172.32	100.05	-4.6	37.65	172.34	172.32	100.00	-4.5	37.65	168.28	175.76	99.80	-4.0	46.82	189.55	189.53	99.75	-3.9	46.82	184.72	192.97	99.75	-3.9	48.92	192.99	192.97	99.70	-3.8	48.92	187.99	196.42	99.10	-2.7	50.00	134.45	237.72	99.05	-2.6	50.00	129.92	241.16	99.05	-2.6	50.00	129.92	241.16	99.00	-2.5	50.00	125.44	244.60	98.10	-1.0	50.00	50.57	306.55	98.05	-0.9	50.00	46.67	310.00	98.05	-0.9	50.00	46.67	310.00	98.00	-0.9	50.00	42.79	313.44	97.90	-0.7	50.00	35.08	320.32	97.85	-0.6	50.00	31.26	323.76	97.85	-0.6	50.00	31.26	323.76	97.80	-0.5	50.00	27.42	327.23	97.10	0.5	50.00	-25.22	375.80	97.05	0.6	50.00	-28.94	379.27	97.05	0.6	50.00	-28.94	379.27	97.00	0.7	50.00	-32.65	382.74	96.65	1.2	50.00	-58.59	407.02	96.60	1.2	50.00	-62.30	410.49
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98.05	-0.9	50.00	46.67	310.00																																																																																																																																																																																	
98.05	-0.9	50.00	46.67	310.00																																																																																																																																																																																	
98.00	-0.9	50.00	42.79	313.44																																																																																																																																																																																	
97.90	-0.7	50.00	35.08	320.32																																																																																																																																																																																	
97.85	-0.6	50.00	31.26	323.76																																																																																																																																																																																	
97.85	-0.6	50.00	31.26	323.76																																																																																																																																																																																	
97.80	-0.5	50.00	27.42	327.23																																																																																																																																																																																	
97.10	0.5	50.00	-25.22	375.80																																																																																																																																																																																	
97.05	0.6	50.00	-28.94	379.27																																																																																																																																																																																	
97.05	0.6	50.00	-28.94	379.27																																																																																																																																																																																	
97.00	0.7	50.00	-32.65	382.74																																																																																																																																																																																	
96.65	1.2	50.00	-58.59	407.02																																																																																																																																																																																	
96.60	1.2	50.00	-62.30	410.49																																																																																																																																																																																	
Schnitt: Anlage P1 Schnitt 7L					Seite Anlage P1/18																																																																																																																																																																																
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												
<p>Nachweis Summe V</p> <p>Nachweis des mobilisierten Erdwiderstands</p> <p>Bedingung: <math>P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}</math></p> <p><math>G_k = 179.77 \text{ kN/m}</math></p> <p><math>G'_k = 0.00 \text{ kN/m}</math></p> <p><math>P_{v,k} = 0.00 \text{ kN/m}</math></p> <p><math>E_{av,k} = 87.71 \text{ kN/m}</math> (<math>E_{ah,k} = 488.00 \text{ kN/m}</math>)</p> <p><math>B_{v,k} = 189.46</math></p> <p>Summe <math>V_k = 78.02 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></p> <p>Verhältniswert (min, max) = 0.00</p> <p>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></p> <p>(gemittelt von 97.48 bis 93.96 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></p> <p><math>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}</math></p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></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>96.60</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 96.60 m = 1.000 m<sup>2</sup>/m <math>\implies R_{s1,d}</math></p> <p><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 325.60 / 1.40 = 232.57 \text{ kN/m}</math></p> <p><math>R_{d} = R_{b,d} + R_{s1,d} = 1097.62 \text{ kN/m}</math></p> <p>Einwirkungen</p> <p><math>V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 215.72 - 0.00 + 100.87 + 0.00 = 316.59 \text{ kN/m}</math></p> <p><math>\implies \mu = V_d / R_d = 316.59 / 1097.62 = 0.29</math></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	96.60	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	96.60	55.00	s3: Flussskies, -sand											
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1119												
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
<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 7 Datei: 03_BS 7_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 = 106.10 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 (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 2 0.00 29.50 105.50 102.55 Wasserdruck</div>		
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/20
Kapitel: 3 LF 3 (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	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 automatisch und Fuß gebettet

Profillänge = 9.30 m

Bettungsmodule

von bis ks(oben) ks(unten)

[mNHN] [mNHN] [MN/m³] [MN/m³]

102.55 80.00 50.000 50.000

Ausnutzungsgrad mue = 492.105 / 497.507 = 0.989

Bettungslager Bh,d = 492.105 kN/m

Erdwiderstand Eph,d = 497.507 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	-273.80	-236.28	-236.28	-172.83	3.900E+7	2.100E+7	-301.26

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	-15.9	0.0	-280.37	0.00	0.00
-7.47	103.72	-15.9	0.0	-280.37	0.00	0.00
-7.47	103.72	-15.9	0.0	-280.37	0.00	0.00
-6.64	103.72	-15.9	0.0	-280.37	0.00	0.00
-5.81	103.72	-15.9	0.0	-280.37	0.00	0.00
-4.98	103.72	-15.9	0.0	-280.37	0.00	0.00
-4.15	103.72	-15.9	0.0	-280.37	0.00	0.00
-3.32	103.72	-15.9	0.0	-280.37	0.00	0.00
-2.49	103.72	-15.9	0.0	-280.37	0.00	0.00
-1.66	103.72	-15.9	0.0	-280.37	0.00	0.00
-0.83	103.72	-15.9	0.0	-280.37	0.00	0.00
0.00	103.72	-16.0	0.0	-280.37	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\02\_BS 7\_LF2.vrb

eingelesen.

Anker/Steife Tiefe Vorverformung

[-]	[m]	[m]
1	103.72	-0.0138

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 P1	Schnitt 7L	Seite Anlage P1/21
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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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 (<math>[g+q],k</math>)</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>101.844</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>97.050</td><td>57.926</td><td>58.279</td><td>0.00</td><td>0.00</td></tr><tr><td>97.050</td><td>96.799</td><td>58.279</td><td>58.389</td><td>0.00</td><td>0.00</td></tr><tr><td>96.799</td><td>95.031</td><td>58.389</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>						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	97.050	57.926	58.279	0.00	0.00	97.050	96.799	58.279	58.389	0.00	0.00	96.799	95.031	58.389	59.163	0.00	0.00	95.031	80.000	59.163	120.815	0.00	0.00
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																																																																																																																																																																																																																																																																																																																																								
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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																																																																																																																																																																																																																																																																																																																																										
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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																																																																																																																																																																																																																																																																																																																																										
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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																																																																																																																																																																																																																																																																																																																																										
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Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forster

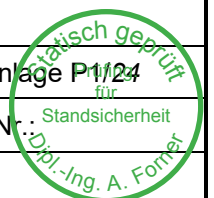


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>Hydrodynamische Wasserdruckspannung (dynamisch (hoch)durchlässiger Boden unterhalb des Grundwasserspiegels) w(oben) w(unten) z(oben) z(unten) [kN/m²] [kN/m²] [mNHN] [mNHN] 0.00 0.00 106.10 102.55</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 -106.04 100.05 100.00 -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 -233.43 97.05 96.80 -233.43 -244.11 96.80 95.03 -244.11 -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 0.0 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 -280.4 103.72 -75.2 117.2 -125.8 103.68 -76.1 116.3 -121.2 103.45 -82.5 105.4 -95.9 103.33 -86.6 97.2 -83.3 103.22 -91.0 86.7 -73.6 103.20 -91.9 84.3 -71.9 103.08 -98.5 66.2 -62.5 102.99 -104.3 49.3 -57.2 102.97 -105.4 46.0 -56.5 102.96 -106.6 42.5 -55.7 102.83 -115.1 16.7 -52.0 102.71 -123.8 -9.5 -51.6 102.69 -125.2 -13.9 -51.8 102.64 -128.1 -22.6 -52.6 102.61 -130.3 -29.5 -53.5</div>		
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/23
Kapitel: 3 LF 3 (BS-T)		Archiv Nr.: 11/23
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
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([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>106.10</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><div><div>106.09</div><div>-0.2</div><div>0.0</div><div>0.0</div><div></div><div></div><div></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></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></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-64.5</div><div>-136.4</div><div>-105.4</div><div>-236.3</div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.72</div><div>-64.5</div><div>99.9</div><div>-105.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.68</div><div>-65.3</div><div>99.2</div><div>-101.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.45</div><div>-70.9</div><div>89.8</div><div>-79.9</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.33</div><div>-74.4</div><div>82.9</div><div>-69.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.22</div><div>-78.2</div><div>73.8</div><div>-60.9</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.20</div><div>-79.0</div><div>71.8</div><div>-59.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>103.08</div><div>-84.8</div><div>56.1</div><div>-51.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.99</div><div>-89.8</div><div>41.6</div><div>-47.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.97</div><div>-90.8</div><div>38.7</div><div>-46.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.96</div><div>-91.8</div><div>35.7</div><div>-45.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.83</div><div>-99.3</div><div>13.4</div><div>-42.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.71</div><div>-106.8</div><div>-9.2</div><div>-42.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.69</div><div>-108.0</div><div>-13.0</div><div>-42.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.64</div><div>-110.5</div><div>-20.6</div><div>-43.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.61</div><div>-112.5</div><div>-26.5</div><div>-44.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.55</div><div>-116.1</div><div>-37.4</div><div>-46.1</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.52</div><div>-117.8</div><div>-41.9</div><div>-47.3</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.39</div><div>-120.0</div><div>-55.6</div><div>-53.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.16</div><div>-122.8</div><div>-75.4</div><div>-68.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>102.09</div><div>-123.4</div><div>-80.6</div><div>-74.2</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.84</div><div>-124.4</div><div>-94.6</div><div>-96.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.79</div><div>-124.4</div><div>-96.7</div><div>-100.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.69</div><div>-124.2</div><div>-99.8</div><div>-110.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.50</div><div>-122.9</div><div>-102.6</div><div>-130.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.22</div><div>-119.5</div><div>-99.3</div><div>-158.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>101.07</div><div>-116.6</div><div>-93.7</div><div>-173.6</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.75</div><div>-108.9</div><div>-75.7</div><div>-200.4</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.28</div><div>-92.3</div><div>-34.1</div><div>-226.8</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.09</div><div>-83.9</div><div>-13.1</div><div>-231.3</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.05</div><div>-81.7</div><div>-7.6</div><div>-231.8</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>100.00</div><div>-79.3</div><div>-1.5</div><div>-232.0</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>99.05</div><div>-40.4</div><div>92.9</div><div>-182.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>98.05</div><div>-33.4</div><div>103.2</div><div>-77.5</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>97.85</div><div>-35.8</div><div>95.0</div><div>-57.7</div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>97.05</div><div>-43.5</div><div>30.4</div><div>-3.9</div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>		
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/24
Kapitel: 3 LF 3 (BS-T)		Archiv Nr. 1124
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025

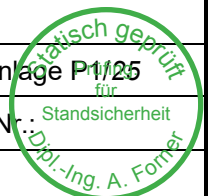


Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
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(g+w,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</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>105.50</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>-236.3</div></div><div><div>103.72</div><div>-64.5</div><div>99.9</div><div>-105.4</div><div></div></div><div><div>103.68</div><div>-65.3</div><div>99.2</div><div>-101.5</div><div></div></div><div><div>103.45</div><div>-70.9</div><div>89.8</div><div>-79.9</div><div></div></div><div><div>103.33</div><div>-74.4</div><div>82.9</div><div>-69.1</div><div></div></div><div><div>103.22</div><div>-78.2</div><div>73.8</div><div>-60.9</div><div></div></div><div><div>103.20</div><div>-79.0</div><div>71.8</div><div>-59.5</div><div></div></div><div><div>103.08</div><div>-84.8</div><div>56.1</div><div>-51.5</div><div></div></div><div><div>102.99</div><div>-89.8</div><div>41.6</div><div>-47.0</div><div></div></div><div><div>102.97</div><div>-90.8</div><div>38.7</div><div>-46.4</div><div></div></div><div><div>102.96</div><div>-91.8</div><div>35.7</div><div>-45.7</div><div></div></div><div><div>102.83</div><div>-99.3</div><div>13.4</div><div>-42.7</div><div></div></div><div><div>102.71</div><div>-106.8</div><div>-9.2</div><div>-42.4</div><div></div></div><div><div>102.69</div><div>-108.0</div><div>-13.0</div><div>-42.7</div><div></div></div><div><div>102.64</div><div>-110.5</div><div>-20.6</div><div>-43.4</div><div></div></div><div><div>102.61</div><div>-112.5</div><div>-26.5</div><div>-44.1</div><div></div></div><div><div>102.55</div><div>-116.1</div><div>-37.4</div><div>-46.1</div><div></div></div><div><div>102.52</div><div>-117.8</div><div>-41.9</div><div>-47.3</div><div></div></div><div><div>102.39</div><div>-120.0</div><div>-55.6</div><div>-53.7</div><div></div></div><div><div>102.16</div><div>-122.8</div><div>-75.4</div><div>-68.6</div><div></div></div><div><div>102.09</div><div>-123.4</div><div>-80.6</div><div>-74.2</div><div></div></div><div><div>101.84</div><div>-124.4</div><div>-94.6</div><div>-96.0</div><div></div></div><div><div>101.79</div><div>-124.4</div><div>-96.7</div><div>-100.7</div><div></div></div><div><div>101.69</div><div>-124.2</div><div>-99.8</div><div>-110.7</div><div></div></div><div><div>101.50</div><div>-122.9</div><div>-102.6</div><div>-130.6</div><div></div></div><div><div>101.22</div><div>-119.5</div><div>-99.3</div><div>-158.5</div><div></div></div><div><div>101.07</div><div>-116.6</div><div>-93.7</div><div>-173.6</div><div></div></div><div><div>100.75</div><div>-108.9</div><div>-75.7</div><div>-200.4</div><div></div></div><div><div>100.28</div><div>-92.3</div><div>-34.1</div><div>-226.8</div><div></div></div><div><div>100.09</div><div>-83.9</div><div>-13.1</div><div>-231.3</div><div></div></div><div><div>100.05</div><div>-81.7</div><div>-7.6</div><div>-231.8</div><div></div></div><div><div>100.00</div><div>-79.3</div><div>-1.5</div><div>-232.0</div><div></div></div><div><div>99.05</div><div>-40.4</div><div>92.9</div><div>-182.5</div><div></div></div><div><div>98.05</div><div>-33.4</div><div>103.2</div><div>-77.5</div><div></div></div><div><div>97.85</div><div>-35.8</div><div>95.0</div><div>-57.7</div><div></div></div><div><div>97.05</div><div>-43.5</div><div>30.4</div><div>-3.9</div><div></div></div><div><div>96.80</div><div>-42.0</div><div>0.0</div><div>0.0</div><div></div></div></div><div><div>Schnittgrößen 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Schnitt: Anlage P1 Schnitt 7L				Seite Anlage P1/25	
Kapitel: 3 LF 3 (BS-T)				Archiv Nr.: 125	
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025			

Schnittgrößen (q,k)

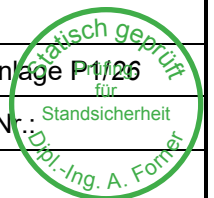
Tiefe   N   Q   M   A(h)

[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   -131.4  
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


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>102.99</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>102.96</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>96.80</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>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-21.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-20.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-19.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-19.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-18.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-18.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-17.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.99</td><td>-17.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-16.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-15.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-15.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-14.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-12.9</td><td>-</td><td>-</td><td>-</td></tr></table>						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	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	96.80	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-21.0	-	-	-	106.09	-21.0	-	-	-	106.09	-21.0	-	-	-	106.04	-20.8	-	-	-	105.55	-19.3	-	-	-	105.50	-19.2	-	-	-	105.50	-19.2	-	-	-	105.45	-19.0	-	-	-	105.45	-19.0	-	-	-	105.40	-18.9	-	-	-	105.10	-18.0	-	-	-	105.05	-17.8	-	-	-	105.05	-17.8	-	-	-	104.99	-17.7	-	-	-	104.73	-16.9	-	-	-	104.68	-16.7	-	-	-	104.68	-16.7	-	-	-	104.64	-16.6	-	-	-	104.40	-15.9	-	-	-	104.35	-15.7	-	-	-	104.35	-15.7	-	-	-	104.30	-15.6	-	-	-	104.10	-15.0	-	-	-	104.05	-14.8	-	-	-	104.05	-14.8	-	-	-	104.00	-14.7	-	-	-	103.77	-14.0	-	-	-	103.72	-13.9	-	-	-	103.72	-13.9	-	-	-	103.68	-13.8	-	-	-	103.68	-13.8	-	-	-	103.68	-13.7	-	-	-	103.50	-13.2	-	-	-	103.45	-13.1	-	-	-	103.45	-13.1	-	-	-	103.39	-12.9	-	-	-	103.39	-12.9	-	-	-
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Dipl.-Ing. A. Forner



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																				
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d>89.37</td><td>94.74</td></tr><tr><td>101.12</td><td>-6.7</td><td>14.73</td><td>98.35</td><td>98.34</td></tr><tr><td>101.07</td><td>-6.5</td><td>14.73</td><td>96.39</td><td>101.95</td></tr></table>							103.33	-12.7	-	-	-	103.33	-12.7	-	-	-	103.28	-12.6	-	-	-	103.28	-12.6	-	-	-	103.22	-12.4	-	-	-	103.22	-12.4	-	-	-	103.20	-12.4	-	-	-	103.20	-12.4	-	-	-	103.15	-12.2	-	-	-	103.10	-12.1	-	-	-	103.08	-12.0	-	-	-	103.08	-12.0	-	-	-	103.03	-11.9	-	-	-	103.03	-11.9	-	-	-	102.99	-11.8	-	-	-	102.99	-11.8	-	-	-	102.97	-11.7	-	-	-	102.97	-11.7	-	-	-	102.96	-11.7	-	-	-	102.96	-11.7	-	-	-	102.89	-11.5	-	-	-	102.89	-11.5	-	-	-	102.83	-11.3	-	-	-	102.83	-11.3	-	-	-	102.77	-11.2	-	-	-	102.77	-11.2	-	-	-	102.71	-11.0	-	-	-	102.71	-11.0	-	-	-	102.69	-10.9	-	-	-	102.69	-10.9	-	-	-	102.64	-10.8	-	-	-	102.64	-10.8	-	-	-	102.61	-10.7	-	-	-	102.61	-10.7	-	-	-	102.60	-10.7	-	-	-	102.60	-10.7	-	-	-	102.55	-10.5	0.00	0.00	0.00	102.55	-10.5	0.00	0.00	11.73	102.52	-10.5	0.00	0.00	12.51	102.52	-10.5	0.15	1.53	1.53	102.48	-10.3	0.15	1.51	4.55	102.43	-10.2	0.74	7.58	7.58	102.39	-10.1	0.74	7.49	10.60	102.39	-10.1	1.05	10.60	10.60	102.34	-10.0	1.05	10.47	13.71	102.21	-9.6	2.40	23.06	23.06	102.16	-9.5	2.40	22.76	26.17	102.16	-9.5	2.76	26.17	26.17	102.09	-9.3	2.76	25.62	31.13	102.09	-9.3	3.36	31.13	31.13	102.04	-9.1	3.36	30.67	34.55	101.89	-8.7	5.14	44.82	44.82	101.84	-8.6	5.14	44.13	48.24	101.84	-8.6	5.61	48.24	48.24	101.79	-8.5	5.61	47.49	51.66	101.79	-8.5	6.11	51.66	51.66	101.74	-8.3	6.11	50.83	55.15	101.74	-8.3	6.63	55.16	55.15	101.69	-8.2	6.63	54.25	58.65	101.69	-8.2	7.17	58.65	58.65	101.64	-8.1	7.17	57.71	62.03	101.55	-7.8	8.83	68.81	68.81	101.50	-7.7	8.83	67.66	72.19	101.50	-7.7	9.42	72.19	72.19	101.44	-7.5	9.42	70.83	75.98	101.28	-7.1	12.32	87.34	87.34	101.22	-6.9	12.32	85.60	91.13	101.22	-6.9	13.12	91.13	91.13	101.17	-6.8	13.12	89.37	94.74	101.12	-6.7	14.73	98.35	98.34	101.07	-6.5	14.73	96.39	101.95
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102.48	-10.3	0.15	1.51	4.55																																																																																																																																																																																																																																																																																																																																																																					
102.43	-10.2	0.74	7.58	7.58																																																																																																																																																																																																																																																																																																																																																																					
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102.21	-9.6	2.40	23.06	23.06																																																																																																																																																																																																																																																																																																																																																																					
102.16	-9.5	2.40	22.76	26.17																																																																																																																																																																																																																																																																																																																																																																					
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102.09	-9.3	2.76	25.62	31.13																																																																																																																																																																																																																																																																																																																																																																					
102.09	-9.3	3.36	31.13	31.13																																																																																																																																																																																																																																																																																																																																																																					
102.04	-9.1	3.36	30.67	34.55																																																																																																																																																																																																																																																																																																																																																																					
101.89	-8.7	5.14	44.82	44.82																																																																																																																																																																																																																																																																																																																																																																					
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101.79	-8.5	6.11	51.66	51.66																																																																																																																																																																																																																																																																																																																																																																					
101.74	-8.3	6.11	50.83	55.15																																																																																																																																																																																																																																																																																																																																																																					
101.74	-8.3	6.63	55.16	55.15																																																																																																																																																																																																																																																																																																																																																																					
101.69	-8.2	6.63	54.25	58.65																																																																																																																																																																																																																																																																																																																																																																					
101.69	-8.2	7.17	58.65	58.65																																																																																																																																																																																																																																																																																																																																																																					
101.64	-8.1	7.17	57.71	62.03																																																																																																																																																																																																																																																																																																																																																																					
101.55	-7.8	8.83	68.81	68.81																																																																																																																																																																																																																																																																																																																																																																					
101.50	-7.7	8.83	67.66	72.19																																																																																																																																																																																																																																																																																																																																																																					
101.50	-7.7	9.42	72.19	72.19																																																																																																																																																																																																																																																																																																																																																																					
101.44	-7.5	9.42	70.83	75.98																																																																																																																																																																																																																																																																																																																																																																					
101.28	-7.1	12.32	87.34	87.34																																																																																																																																																																																																																																																																																																																																																																					
101.22	-6.9	12.32	85.60	91.13																																																																																																																																																																																																																																																																																																																																																																					
101.22	-6.9	13.12	91.13	91.13																																																																																																																																																																																																																																																																																																																																																																					
101.17	-6.8	13.12	89.37	94.74																																																																																																																																																																																																																																																																																																																																																																					
101.12	-6.7	14.73	98.35	98.34																																																																																																																																																																																																																																																																																																																																																																					
101.07	-6.5	14.73	96.39	101.95																																																																																																																																																																																																																																																																																																																																																																					
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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>101.07</td><td>-6.5</td><td>15.58</td><td>101.96</td><td>101.95</td></tr><tr><td>101.01</td><td>-6.4</td><td>15.58</td><td>99.90</td><td>105.56</td></tr><tr><td>100.80</td><td>-5.9</td><td>20.36</td><td>120.00</td><td>120.00</td></tr><tr><td>100.75</td><td>-5.8</td><td>20.36</td><td>117.40</td><td>123.61</td></tr><tr><td>100.75</td><td>-5.8</td><td>21.44</td><td>123.61</td><td>123.61</td></tr><tr><td>100.70</td><td>-5.6</td><td>21.44</td><td>120.89</td><td>127.21</td></tr><tr><td>100.33</td><td>-4.8</td><td>31.91</td><td>152.49</td><td>152.47</td></tr><tr><td>100.28</td><td>-4.7</td><td>31.91</td><td>148.70</td><td>156.08</td></tr><tr><td>100.28</td><td>-4.7</td><td>33.50</td><td>156.10</td><td>156.08</td></tr><tr><td>100.24</td><td>-4.6</td><td>33.50</td><td>152.54</td><td>159.33</td></tr><tr><td>100.14</td><td>-4.3</td><td>38.17</td><td>165.84</td><td>165.83</td></tr><tr><td>100.09</td><td>-4.2</td><td>38.17</td><td>161.89</td><td>169.08</td></tr><tr><td>100.09</td><td>-4.2</td><td>39.87</td><td>169.09</td><td>169.08</td></tr><tr><td>100.05</td><td>-4.1</td><td>39.87</td><td>165.00</td><td>172.32</td></tr><tr><td>100.05</td><td>-4.1</td><td>41.64</td><td>172.34</td><td>172.32</td></tr><tr><td>100.00</td><td>-4.0</td><td>41.64</td><td>167.85</td><td>175.76</td></tr><tr><td>100.00</td><td>-4.0</td><td>43.61</td><td>175.78</td><td>175.76</td></tr><tr><td>99.95</td><td>-3.9</td><td>43.61</td><td>171.13</td><td>179.21</td></tr><tr><td>99.10</td><td>-2.3</td><td>50.00</td><td>112.70</td><td>237.72</td></tr><tr><td>99.05</td><td>-2.2</td><td>50.00</td><td>108.18</td><td>241.16</td></tr><tr><td>99.05</td><td>-2.2</td><td>50.00</td><td>108.18</td><td>241.16</td></tr><tr><td>99.00</td><td>-2.1</td><td>50.00</td><td>103.70</td><td>244.60</td></tr><tr><td>98.10</td><td>-0.6</td><td>50.00</td><td>28.40</td><td>306.55</td></tr><tr><td>98.05</td><td>-0.5</td><td>50.00</td><td>24.45</td><td>310.00</td></tr><tr><td>98.05</td><td>-0.5</td><td>50.00</td><td>24.45</td><td>310.00</td></tr><tr><td>98.00</td><td>-0.4</td><td>50.00</td><td>20.51</td><td>313.44</td></tr><tr><td>97.90</td><td>-0.3</td><td>50.00</td><td>12.67</td><td>320.32</td></tr><tr><td>97.85</td><td>-0.2</td><td>50.00</td><td>8.77</td><td>323.76</td></tr><tr><td>97.85</td><td>-0.2</td><td>50.00</td><td>8.77</td><td>323.76</td></tr><tr><td>97.80</td><td>-0.1</td><td>50.00</td><td>4.85</td><td>327.23</td></tr><tr><td>97.10</td><td>1.0</td><td>50.00</td><td>-49.22</td><td>375.84</td></tr><tr><td>97.05</td><td>1.1</td><td>50.00</td><td>-53.06</td><td>379.32</td></tr><tr><td>97.05</td><td>1.1</td><td>50.00</td><td>-53.06</td><td>379.32</td></tr><tr><td>97.00</td><td>1.1</td><td>50.00</td><td>-56.89</td><td>382.79</td></tr><tr><td>96.85</td><td>1.4</td><td>50.00</td><td>-68.39</td><td>393.20</td></tr><tr><td>96.80</td><td>1.4</td><td>50.00</td><td>-72.22</td><td>396.68</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.08737146 Theoretischer Fußpunkt = 96.799 m</p> <p>Einbindetiefe tg = 5.75 m Profillänge = 9.30 m</p>						101.07	-6.5	15.58	101.96	101.95	101.01	-6.4	15.58	99.90	105.56	100.80	-5.9	20.36	120.00	120.00	100.75	-5.8	20.36	117.40	123.61	100.75	-5.8	21.44	123.61	123.61	100.70	-5.6	21.44	120.89	127.21	100.33	-4.8	31.91	152.49	152.47	100.28	-4.7	31.91	148.70	156.08	100.28	-4.7	33.50	156.10	156.08	100.24	-4.6	33.50	152.54	159.33	100.14	-4.3	38.17	165.84	165.83	100.09	-4.2	38.17	161.89	169.08	100.09	-4.2	39.87	169.09	169.08	100.05	-4.1	39.87	165.00	172.32	100.05	-4.1	41.64	172.34	172.32	100.00	-4.0	41.64	167.85	175.76	100.00	-4.0	43.61	175.78	175.76	99.95	-3.9	43.61	171.13	179.21	99.10	-2.3	50.00	112.70	237.72	99.05	-2.2	50.00	108.18	241.16	99.05	-2.2	50.00	108.18	241.16	99.00	-2.1	50.00	103.70	244.60	98.10	-0.6	50.00	28.40	306.55	98.05	-0.5	50.00	24.45	310.00	98.05	-0.5	50.00	24.45	310.00	98.00	-0.4	50.00	20.51	313.44	97.90	-0.3	50.00	12.67	320.32	97.85	-0.2	50.00	8.77	323.76	97.85	-0.2	50.00	8.77	323.76	97.80	-0.1	50.00	4.85	327.23	97.10	1.0	50.00	-49.22	375.84	97.05	1.1	50.00	-53.06	379.32	97.05	1.1	50.00	-53.06	379.32	97.00	1.1	50.00	-56.89	382.79	96.85	1.4	50.00	-68.39	393.20	96.80	1.4	50.00	-72.22	396.68
101.07	-6.5	15.58	101.96	101.95																																																																																																																																																																																					
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Schnitt:		Anlage P1 Schnitt 7L		Seite Anlage P1/28																																																																																																																																																																																					
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												
<div>Nachweis Summe V</div> <div>Nachweis des mobilisierten Erdwiderstands</div> <div>Bedingung: <math>P_{v,k} + G_k - G'_k + E_{av,k} \geq B_{v,k}</math></div> <div><math>G_k = 175.98 \text{ kN/m}</math></div> <div><math>G'_k = 0.00 \text{ kN/m}</math></div> <div><math>P_{v,k} = 19.50 \text{ kN/m}</math></div> <div><math>E_{av,k} = 85.39 \text{ kN/m}</math> (<math>E_{ah,k} = 476.32 \text{ kN/m}</math>)</div> <div><math>B_{v,k} = 170.40</math></div> <div>Summe <math>V_k = 110.47 \text{ kN/m}</math> (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 <math>D = 0.88 \text{ m}</math></div> <div>Verhältniswert (min, max) = 0.00</div> <div>Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math></div> <div>(gemittelt von 97.68 bis 94.16 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math></div> <div><math>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}</math></div> <div>Mantelreibung</div> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></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>96.80</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <div>Mantelfläche bis 96.80 m = 1.000 m<sup>2</sup>/m <math>\implies R_{s1,d}</math></div> <div><math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 314.60 / 1.40 = 224.71 \text{ kN/m}</math></div> <div><math>R_d = R_{b,d} + R_{s1,d} = 1089.76 \text{ kN/m}</math></div> <div>Einwirkungen</div> <div><math>V_d = G_d - G'_k + E_{av,d} + P_{v,d} = 211.18 - 0.00 + 98.20 + 23.40 = 332.78 \text{ kN/m}</math></div> <div><math>\implies \mu = V_d / R_d = 332.78 / 1089.76 = 0.31</math></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	96.80	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	96.80	55.00	s3: Flussskies, -sand											
Schnitt:	Anlage P1 Schnitt 7L	Seite Anlage P1/29												
Kapitel:	3 LF 3 (BS-T)	Archiv Nr.: 1129												
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: 04_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 P1 Schnitt 7L		Seite Anlage P1/30
Kapitel: 4 LF 4 (BS-P)		Archiv Nr. 100
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<sub>g,k</sub></td><td>M<sub>q,k</sub></td><td>H<sub>g,k</sub></td><td>H<sub>q,k</sub></td><td>V<sub>g,k</sub></td><td>V<sub>q,k</sub></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> Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.10 m  Bettungsmodule von bis ks(oben) ks(unten) [mNHN] [mNHN] [MN/m³] [MN/m³] 102.55 80.00 50.000 50.000  Ausnutzungsgrad <math>\mu_e = 647.618 / 656.716 = 0.986</math> Bettungslager <math>B_{h,d} = 647.618 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 656.716 \text{ kN/m}</math>  Anker und Steifen <math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50) <math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten. <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-250.00</td><td>-193.65</td><td>-193.65</td><td>-173.69</td><td>3.900E+7</td><td>2.100E+7</td><td>-246.91 Steife</td></tr></table> Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max M<sub>d</sub> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig <table><tr><td>x</td><td>y</td><td>w<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-17.6</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-17.7</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-17.7</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-17.7</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-17.7</td><td>0.0</td><td>-259.93</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-17.7</td><td>0.0</td><td>-259.93</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 7\Linkes Ufer\02_BS 7_LF2.vrb eingeliesen. Anker/Steife Tiefe Vorverformung [-] [m] [m] 1 103.72 -0.0138  Bodenkennwerte <table><tr><td>Schicht</td><td>UK</td><td>gam<sub>k</sub></td><td>gam'<sub>k</sub></td><td>phi<sub>k</sub></td><td>c<sub>k</sub></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 <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>	[-]	[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	Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-250.00	-193.65	-193.65	-173.69	3.900E+7	2.100E+7	-246.91 Steife	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-17.6	0.0	-259.93	0.00	0.00	-7.47	103.72	-17.6	0.0	-259.93	0.00	0.00	-7.47	103.72	-17.6	0.0	-259.93	0.00	0.00	-6.64	103.72	-17.6	0.0	-259.93	0.00	0.00	-5.81	103.72	-17.6	0.0	-259.93	0.00	0.00	-4.98	103.72	-17.6	0.0	-259.93	0.00	0.00	-4.15	103.72	-17.6	0.0	-259.93	0.00	0.00	-3.32	103.72	-17.7	0.0	-259.93	0.00	0.00	-2.49	103.72	-17.7	0.0	-259.93	0.00	0.00	-1.66	103.72	-17.7	0.0	-259.93	0.00	0.00	-0.83	103.72	-17.7	0.0	-259.93	0.00	0.00	0.00	103.72	-17.7	0.0	-259.93	0.00	0.00	Schicht	UK	gam <sub>k</sub>	gam' <sub>k</sub>	phi <sub>k</sub>	c <sub>k</sub>	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 <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>																																																																																																																																																																																																														
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<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>100.094</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>99.050</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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	100.094	47.032	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																																																																												
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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																																																																																																																																																																																																																																																																																																																																												
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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																																																																																																																																																																																																																																																																																																																																														
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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																																																																																																																																																																																																																																																																																																																																														
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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																																																																																																																																																																																																																																																																																																																																														
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100.282	100.094	47.032	48.553	0.00	0.00																																																																																																																																																																																																																																																																																																																																														
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100.047	99.050	48.933	53.021	0.00	0.00																																																																																																																																																																																																																																																																																																																																														
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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 P1 Schnitt 7L		Seite Anlage P1/32																																																																																																																																																																																																																																																																																																																																																	
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>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>100.09</td><td>-100.52</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>-259.9</td></tr><tr><td>103.72</td><td>-83.7</td><td>76.6</td><td>-141.3</td><td></td></tr><tr><td>103.68</td><td>-84.7</td><td>75.6</td><td>-138.3</td><td></td></tr><tr><td>103.45</td><td>-91.9</td><td>63.3</td><td>-122.4</td><td></td></tr><tr><td>103.33</td><td>-96.4</td><td>54.3</td><td>-115.1</td><td></td></tr><tr><td>103.22</td><td>-101.2</td><td>42.5</td><td>-110.0</td><td></td></tr><tr><td>103.20</td><td>-102.2</td><td>39.9</td><td>-109.2</td><td></td></tr><tr><td>103.08</td><td>-109.6</td><td>19.7</td><td>-105.4</td><td></td></tr><tr><td>102.99</td><td>-116.0</td><td>1.0</td><td>-104.4</td><td></td></tr><tr><td>102.97</td><td>-117.2</td><td>-2.7</td><td>-104.5</td><td></td></tr><tr><td>102.96</td><td>-118.5</td><td>-6.6</td><td>-104.5</td><td></td></tr><tr><td>102.83</td><td>-128.0</td><td>-35.3</td><td>-107.1</td><td></td></tr><tr><td>102.71</td><td>-137.6</td><td>-64.4</td><td>-113.3</td><td></td></tr><tr><td>102.69</td><td>-139.2</td><td>-69.2</td><td>-114.7</td><td></td></tr><tr><td>102.64</td><td>-142.4</td><td>-79.0</td><td>-117.8</td><td></td></tr><tr><td>102.61</td><td>-144.9</td><td>-86.6</td><td>-120.5</td><td></td></tr><tr><td>102.55</td><td>-149.4</td><td>-100.6</td><td>-126.3</td><td></td></tr><tr><td>102.52</td><td>-151.4</td><td>-106.3</td><td>-129.4</td><td></td></tr><tr><td>102.39</td><td>-153.0</td><td>-120.5</td><td>-144.3</td><td></td></tr><tr><td>102.16</td><td>-154.3</td><td>-140.1</td><td>-173.8</td><td></td></tr><tr><td>102.09</td><td>-154.3</td><td>-145.0</td><td>-184.0</td><td></td></tr><tr><td>101.79</td><td>-152.6</td><td>-158.0</td><td>-229.3</td><td></td></tr><tr><td>101.69</td><td>-151.3</td><td>-159.5</td><td>-245.4</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	100.09	-100.52	-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	-259.9	103.72	-83.7	76.6	-141.3		103.68	-84.7	75.6	-138.3		103.45	-91.9	63.3	-122.4		103.33	-96.4	54.3	-115.1		103.22	-101.2	42.5	-110.0		103.20	-102.2	39.9	-109.2		103.08	-109.6	19.7	-105.4		102.99	-116.0	1.0	-104.4		102.97	-117.2	-2.7	-104.5		102.96	-118.5	-6.6	-104.5		102.83	-128.0	-35.3	-107.1		102.71	-137.6	-64.4	-113.3		102.69	-139.2	-69.2	-114.7		102.64	-142.4	-79.0	-117.8		102.61	-144.9	-86.6	-120.5		102.55	-149.4	-100.6	-126.3		102.52	-151.4	-106.3	-129.4		102.39	-153.0	-120.5	-144.3		102.16	-154.3	-140.1	-173.8		102.09	-154.3	-145.0	-184.0		101.79	-152.6	-158.0	-229.3		101.69	-151.3	-159.5	-245.4	
Schicht	UK	kpgh	kpch	phi,k	delta	theta																																																																																																																																																																																																																																																																																																							
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4	80.00	6.006	6.054	32.500	-21.68	16.35																																																																																																																																																																																																																																																																																																							
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96.10	96.00	-265.61	-269.57																																																																																																																																																																																																																																																																																																										
96.00	95.03	-269.57	-307.76																																																																																																																																																																																																																																																																																																										
95.03	80.00	-307.76	-900.98																																																																																																																																																																																																																																																																																																										
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103.45	-91.9	63.3	-122.4																																																																																																																																																																																																																																																																																																										
103.33	-96.4	54.3	-115.1																																																																																																																																																																																																																																																																																																										
103.22	-101.2	42.5	-110.0																																																																																																																																																																																																																																																																																																										
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103.08	-109.6	19.7	-105.4																																																																																																																																																																																																																																																																																																										
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102.96	-118.5	-6.6	-104.5																																																																																																																																																																																																																																																																																																										
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102.71	-137.6	-64.4	-113.3																																																																																																																																																																																																																																																																																																										
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102.39	-153.0	-120.5	-144.3																																																																																																																																																																																																																																																																																																										
102.16	-154.3	-140.1	-173.8																																																																																																																																																																																																																																																																																																										
102.09	-154.3	-145.0	-184.0																																																																																																																																																																																																																																																																																																										
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101.69	-151.3	-159.5	-245.4																																																																																																																																																																																																																																																																																																										
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Statisch geprüft für Standsicherheit Dipl.-Ing. A. Forner



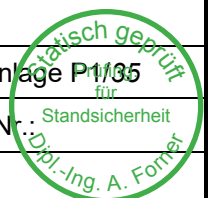
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):					
Auftraggeber:		Stadtverwaltung Leipzig							
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024					
<div><div><div>101.50</div><div>-147.8</div><div>-158.1</div><div>-276.6</div></div><div><div>101.22</div><div>-140.7</div><div>-147.2</div><div>-318.7</div></div><div><div>101.07</div><div>-135.4</div><div>-136.2</div><div>-341.0</div></div><div><div>100.75</div><div>-122.4</div><div>-105.5</div><div>-379.2</div></div><div><div>100.28</div><div>-96.5</div><div>-40.9</div><div>-414.4</div></div><div><div>100.09</div><div>-83.9</div><div>-9.6</div><div>-419.1</div></div><div><div>100.05</div><div>-80.6</div><div>-1.3</div><div>-419.4</div></div><div><div>99.05</div><div>-28.1</div><div>125.4</div><div>-348.3</div></div><div><div>98.05</div><div>-12.5</div><div>154.7</div><div>-201.8</div></div><div><div>97.85</div><div>-12.9</div><div>151.0</div><div>-171.3</div></div><div><div>97.05</div><div>-24.6</div><div>110.5</div><div>-63.7</div></div><div><div>96.10</div><div>-37.2</div><div>13.2</div><div>-0.7</div></div><div><div>96.00</div><div>-37.3</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>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>-193.7</div></div><div><div>103.72</div><div>-64.5</div><div>57.3</div><div>-105.4</div><div></div></div><div><div>103.68</div><div>-65.3</div><div>56.6</div><div>-103.2</div><div></div></div><div><div>103.45</div><div>-70.9</div><div>47.2</div><div>-91.3</div><div></div></div><div><div>103.33</div><div>-74.4</div><div>40.3</div><div>-85.9</div><div></div></div><div><div>103.22</div><div>-78.2</div><div>31.2</div><div>-82.1</div><div></div></div><div><div>103.20</div><div>-79.0</div><div>29.2</div><div>-81.5</div><div></div></div><div><div>103.08</div><div>-84.8</div><div>13.5</div><div>-78.8</div><div></div></div><div><div>102.99</div><div>-89.8</div><div>-1.1</div><div>-78.2</div><div></div></div><div><div>102.97</div><div>-90.8</div><div>-4.0</div><div>-78.2</div><div></div></div><div><div>102.96</div><div>-91.8</div><div>-7.0</div><div>-78.3</div><div></div></div><div><div>102.83</div><div>-99.3</div><div>-29.3</div><div>-80.6</div><div></div></div><div><div>102.71</div><div>-106.8</div><div>-51.9</div><div>-85.6</div><div></div></div><div><div>102.69</div><div>-108.0</div><div>-55.7</div><div>-86.7</div><div></div></div><div><div>102.64</div><div>-110.5</div><div>-63.2</div><div>-89.2</div><div></div></div><div><div>102.61</div><div>-112.5</div><div>-69.2</div><div>-91.4</div><div></div></div><div><div>102.55</div><div>-116.1</div><div>-80.0</div><div>-96.0</div><div></div></div><div><div>102.52</div><div>-117.7</div><div>-84.5</div><div>-98.4</div><div></div></div><div><div>102.39</div><div>-119.0</div><div>-95.6</div><div>-110.3</div><div></div></div><div><div>102.16</div><div>-120.0</div><div>-111.0</div><div>-133.7</div><div></div></div><div><div>102.09</div><div>-120.0</div><div>-114.8</div><div>-141.8</div><div></div></div><div><div>101.79</div><div>-118.7</div><div>-125.0</div><div>-177.7</div><div></div></div><div><div>101.69</div><div>-117.7</div><div>-126.2</div><div>-190.4</div><div></div></div><div><div>101.50</div><div>-114.9</div><div>-125.1</div><div>-215.1</div><div></div></div><div><div>101.22</div><div>-109.4</div><div>-116.5</div><div>-248.4</div><div></div></div><div><div>101.07</div><div>-105.3</div><div>-107.8</div><div>-266.0</div><div></div></div><div><div>100.75</div><div>-95.1</div><div>-83.7</div><div>-296.2</div><div></div></div><div><div>100.28</div><div>-74.8</div><div>-32.8</div><div>-324.2</div><div></div></div><div><div>100.09</div><div>-65.0</div><div>-8.2</div><div>-328.1</div><div></div></div><div><div>100.05</div><div>-62.4</div><div>-1.7</div><div>-328.4</div><div></div></div><div><div>99.05</div><div>-21.4</div><div>98.1</div><div>-273.1</div><div></div></div><div><div>98.05</div><div>-9.2</div><div>121.3</div><div>-158.3</div><div></div></div><div><div>97.85</div><div>-9.6</div><div>118.4</div><div>-134.4</div><div></div></div><div><div>97.05</div><div>-18.8</div><div>86.7</div><div>-50.0</div><div></div></div><div><div>96.10</div><div>-28.7</div><div>10.4</div><div>-0.5</div><div></div></div><div><div>96.00</div><div>-28.8</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>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></div>						Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/34	
Kapitel: 4		LF 4 (BS-P)		Archiv Nr.: 1104					
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025							



Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2			Bauwerksnummer (ASB):																																																																																																																																																																																																																																																																																																																																																																																																														
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<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]</td><td>[kN·m/m]</td></tr><tr><td>[kN/m]</td><td></td><td></td><td></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>0.0</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>-132.4</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><tr><td>102.97</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>102.83</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.71</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>102.69</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>102.61</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>102.52</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr></table>							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	-193.7		103.72	-64.5	57.3	-105.4			103.68	-65.3	56.6	-103.2			103.45	-70.9	47.2	-91.3			103.33	-74.4	40.3	-85.9			103.22	-78.2	31.2	-82.1			103.20	-79.0	29.2	-81.5			103.08	-84.8	13.5	-78.8			102.99	-89.8	-1.1	-78.2			102.97	-90.8	-4.0	-78.2			102.96	-91.8	-7.0	-78.3			102.83	-99.3	-29.3	-80.6			102.71	-106.8	-51.9	-85.6			102.69	-108.0	-55.7	-86.7			102.64	-110.5	-63.2	-89.2			102.61	-112.5	-69.2	-91.4			102.55	-116.1	-80.0	-96.0			102.52	-117.7	-84.5	-98.4			102.39	-119.0	-95.6	-110.3			102.16	-120.0	-111.0	-133.7			102.09	-120.0	-114.8	-141.8			101.79	-118.7	-125.0	-177.7			101.69	-117.7	-126.2	-190.4			101.50	-114.9	-125.1	-215.1			101.22	-109.4	-116.5	-248.4			101.07	-105.3	-107.8	-266.0			100.75	-95.1	-83.7	-296.2			100.28	-74.8	-32.8	-324.2			100.09	-65.0	-8.2	-328.1			100.05	-62.4	-1.7	-328.4			99.05	-21.4	98.1	-273.1			98.05	-9.2	121.3	-158.3			97.85	-9.6	118.4	-134.4			97.05	-18.8	86.7	-50.0			96.10	-28.7	10.4	-0.5			96.00	-28.8	0.0	0.0			Schnittgrößen (q,k)					Tiefe	N	Q	M	A(h)	[mNHN]	[kN/m]		[kN/m]	[kN·m/m]	[kN/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	-132.4	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		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	
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102.64	-110.5	-63.2	-89.2																																																																																																																																																																																																																																																																																																																																																																																																																
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102.55	-116.1	-80.0	-96.0																																																																																																																																																																																																																																																																																																																																																																																																																
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102.16	-120.0	-111.0	-133.7																																																																																																																																																																																																																																																																																																																																																																																																																
102.09	-120.0	-114.8	-141.8																																																																																																																																																																																																																																																																																																																																																																																																																
101.79	-118.7	-125.0	-177.7																																																																																																																																																																																																																																																																																																																																																																																																																
101.69	-117.7	-126.2	-190.4																																																																																																																																																																																																																																																																																																																																																																																																																
101.50	-114.9	-125.1	-215.1																																																																																																																																																																																																																																																																																																																																																																																																																
101.22	-109.4	-116.5	-248.4																																																																																																																																																																																																																																																																																																																																																																																																																
101.07	-105.3	-107.8	-266.0																																																																																																																																																																																																																																																																																																																																																																																																																
100.75	-95.1	-83.7	-296.2																																																																																																																																																																																																																																																																																																																																																																																																																
100.28	-74.8	-32.8	-324.2																																																																																																																																																																																																																																																																																																																																																																																																																
100.09	-65.0	-8.2	-328.1																																																																																																																																																																																																																																																																																																																																																																																																																
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98.05	-9.2	121.3	-158.3																																																																																																																																																																																																																																																																																																																																																																																																																
97.85	-9.6	118.4	-134.4																																																																																																																																																																																																																																																																																																																																																																																																																
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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>106.10</td><td>-21.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.09</td><td>-21.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.04</td><td>-21.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-19.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-19.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-19.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-19.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-18.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-18.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.99</td><td>-17.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.73</td><td>-17.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.68</td><td>-16.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.64</td><td>-16.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-16.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-15.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.30</td><td>-15.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-15.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-14.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-14.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-14.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-13.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.68</td><td>-13.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.50</td><td>-13.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.45</td><td>-13.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.39</td><td>-12.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.33</td><td>-12.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-12.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.22</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-12.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.15</td><td>-12.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.10</td><td>-12.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-11.9</td><td>-</td><td>-</td><td>-</td></tr></table>						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	100.09	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	-21.5	-	-	-	106.09	-21.4	-	-	-	106.09	-21.4	-	-	-	106.04	-21.3	-	-	-	105.55	-19.7	-	-	-	105.50	-19.5	-	-	-	105.50	-19.5	-	-	-	105.45	-19.4	-	-	-	105.45	-19.4	-	-	-	105.40	-19.2	-	-	-	105.10	-18.3	-	-	-	105.05	-18.1	-	-	-	105.05	-18.1	-	-	-	104.99	-17.9	-	-	-	104.73	-17.1	-	-	-	104.68	-16.9	-	-	-	104.68	-16.9	-	-	-	104.64	-16.8	-	-	-	104.40	-16.0	-	-	-	104.35	-15.9	-	-	-	104.35	-15.9	-	-	-	104.30	-15.7	-	-	-	104.10	-15.1	-	-	-	104.05	-14.9	-	-	-	104.05	-14.9	-	-	-	104.00	-14.8	-	-	-	103.77	-14.0	-	-	-	103.72	-13.9	-	-	-	103.72	-13.9	-	-	-	103.68	-13.7	-	-	-	103.68	-13.7	-	-	-	103.68	-13.7	-	-	-	103.50	-13.2	-	-	-	103.45	-13.0	-	-	-	103.45	-13.0	-	-	-	103.39	-12.8	-	-	-	103.39	-12.8	-	-	-	103.33	-12.6	-	-	-	103.33	-12.6	-	-	-	103.28	-12.5	-	-	-	103.28	-12.5	-	-	-	103.22	-12.3	-	-	-	103.22	-12.3	-	-	-	103.20	-12.3	-	-	-	103.20	-12.3	-	-	-	103.15	-12.1	-	-	-	103.10	-12.0	-	-	-	103.08	-11.9	-	-	-
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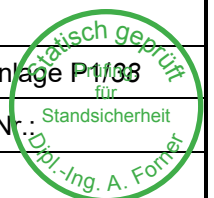


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
103.08	-11.9	-	-	-	
103.03	-11.8	-	-	-	
103.03	-11.8	-	-	-	
102.99	-11.6	-	-	-	
102.99	-11.6	-	-	-	
102.97	-11.6	-	-	-	
102.97	-11.6	-	-	-	
102.96	-11.5	-	-	-	
102.96	-11.5	-	-	-	
102.89	-11.3	-	-	-	
102.89	-11.3	-	-	-	
102.83	-11.1	-	-	-	
102.83	-11.1	-	-	-	
102.77	-11.0	-	-	-	
102.77	-11.0	-	-	-	
102.71	-10.8	-	-	-	
102.71	-10.8	-	-	-	
102.69	-10.7	-	-	-	
102.69	-10.7	-	-	-	
102.64	-10.6	-	-	-	
102.64	-10.6	-	-	-	
102.61	-10.5	-	-	-	
102.61	-10.5	-	-	-	
102.60	-10.5	-	-	-	
102.60	-10.5	-	-	-	
102.55	-10.3	0.00	0.00	0.00	
102.55	-10.3	0.00	0.00	21.74	
102.52	-10.2	0.00	0.00	22.52	
102.52	-10.2	2.09	21.35	21.35	
102.48	-10.1	2.09	21.08	24.37	
102.43	-10.0	2.75	27.40	27.40	
102.39	-9.8	2.75	27.04	30.42	
102.39	-9.8	3.09	30.42	30.42	
102.34	-9.7	3.09	30.01	33.53	
102.21	-9.3	4.60	42.88	42.87	
102.16	-9.2	4.60	42.28	45.99	
102.16	-9.2	5.01	45.99	45.99	
102.09	-9.0	5.01	44.96	50.95	
102.09	-9.0	5.68	50.95	50.95	
102.04	-8.8	5.68	50.15	54.37	
101.84	-8.3	8.22	68.06	68.06	
101.79	-8.1	8.22	66.92	71.48	
101.79	-8.1	8.78	71.48	71.48	
101.74	-8.0	8.78	70.25	74.97	
101.74	-8.0	9.38	74.98	74.97	
101.69	-7.9	9.38	73.67	78.47	
101.69	-7.9	9.99	78.47	78.47	
101.64	-7.7	9.99	77.13	81.85	
101.55	-7.5	11.88	88.63	88.62	
101.50	-7.3	11.88	87.06	92.01	
101.50	-7.3	12.56	92.01	92.01	
101.44	-7.2	12.56	90.17	95.80	
101.28	-6.7	15.88	107.16	107.16	
101.22	-6.6	15.88	104.91	110.95	
101.22	-6.6	16.80	110.95	110.95	
101.17	-6.5	16.80	108.70	114.55	
101.12	-6.3	18.64	118.17	118.16	
101.07	-6.2	18.64	115.72	121.77	
101.07	-6.2	19.62	121.78	121.77	
101.01	-6.1	19.62	119.22	125.38	
100.80	-5.6	25.10	139.82	139.82	
100.75	-5.4	25.10	136.72	143.42	
100.75	-5.4	26.34	143.43	143.42	
100.70	-5.3	26.34	140.21	147.03	
100.33	-4.5	38.22	172.30	172.29	
100.28	-4.4	38.22	168.07	175.90	
100.28	-4.4	40.00	175.91	175.90	
100.24	-4.3	40.00	171.98	179.15	
100.14	-4.1	45.22	185.66	185.65	
100.09	-4.0	45.22	181.38	188.89	
100.09	-4.0	47.09	188.91	188.89	
Schnitt: Anlage P1 Schnitt 7L				Seite Anlage P1/07	
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>100.05-3.947.09184.51192.14</div><div>100.05-3.949.04192.15192.14</div><div>100.00-3.849.04187.37195.58</div><div>99.10-2.350.00114.65257.54</div><div>99.05-2.250.00111.01260.98</div><div>99.05-2.250.00111.01260.98</div><div>99.00-2.150.00107.43264.42</div><div>98.10-1.050.0051.46326.37</div><div>98.05-1.050.0048.75329.81</div><div>98.05-1.050.0048.75329.81</div><div>98.00-0.950.0046.07333.26</div><div>97.90-0.850.0040.80340.14</div><div>97.85-0.850.0038.22343.58</div><div>97.85-0.850.0038.22343.58</div><div>97.80-0.750.0035.64347.05</div><div>97.100.050.001.94395.54</div><div>97.050.050.00-0.34399.00</div><div>97.050.050.00-0.34399.00</div><div>97.000.150.00-2.62402.47</div><div>96.150.850.00-40.40461.36</div><div>96.100.950.00-42.60464.82</div><div>96.100.950.00-42.60464.82</div><div>96.050.950.00-44.81468.28</div><div>96.050.950.00-44.81468.28</div><div>96.000.950.00-47.01471.75</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: -0.05031645</div><div>Theoretischer Fußpunkt = 95.999 m</div></div><div><div>Einbindetiefe tg = 6.55 m</div><div>Profillänge = 10.10 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 &gt;= Bv,k</div><div>G,k = 191.12 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 19.50 kN/m</div><div>Eav,k = 94.70 kN/m (Eah,k = 523.17 kN/m)</div><div>Bv,k = 202.37</div><div>Summe V,k = 102.96 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 96.88 bis 93.36 m) ==&gt; 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>vonbisqs,k [kN/m²]Bezeichnung</div><div>102.55102.520.00S2: Auelehm (unter GS)</div><div>102.5296.0055.00s3: Flussskies, -sand</div></div><div>Mantelfläche bis 96.00 m = 1.000 m²/m/m ==&gt; Rs1,d</div><div>Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 358.60 / 1.40 = 256.14 kN/m</div><div>Rd = Rb,d + Rs1,d = 1121.19 kN/m</div></div></div><div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 258.01 - 0.00 + 120.75 + 26.33 = 405.09 kN/m</div><div>=&gt; µ = V,d / Rd = 405.09 / 1121.19 = 0.36</div></div><div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage P1 Schnitt 7L		Seite Anlage P1/38
Kapitel: 4 LF 4 (BS-P)		Archiv Nr.: 11038
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 Q1 Schnitt 8L</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 8 Datei: 00_BS 8_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 = 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></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 = 6.75 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	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																																																																																																					
[-]	[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																																																																																																					
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[-]	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	[-]																																																																																																									
1	45.90	0.00	100.69	92.70	Ständig																																																																																																									
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/1																																																																																																												
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 111																																																																																																												
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 <math>\mu_e = 243.962 / 759.424 = 0.321</math></div> <div>Bettungslager <math>B_{h,d} = 243.962 \text{ kN/m}</math></div> <div>Erdwiderstand <math>E_{ph,d} = 759.424 \text{ kN/m}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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 (<math>[g+q],k</math>)</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>101.850 101.648 15.886 16.713 5.00 5.00</div> <div>101.648 101.094 16.713 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 99.349 112.926 116.376 5.00 5.00</div> <div>99.349 99.110 116.376 129.155 5.00 5.00</div> <div>99.110 98.997 129.155 131.120 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 97.950 122.623 117.764 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> <div>95.854 95.426 81.881 76.536 5.00 5.00</div> <div>95.426 94.807 76.536 67.247 5.00 5.00</div>		
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/2
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		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>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>105.00104.09-32.52-46.91</div><div>104.09103.08-46.91-62.91</div><div>103.08102.48-62.91-72.50</div><div>102.48102.43-129.24-131.30</div><div>102.43102.09-131.30-145.72</div><div>102.09101.85-145.72-156.02</div><div>101.85101.65-156.02-164.59</div><div>101.65101.09-164.59-188.16</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>99.4199.35-259.59-262.33</div><div>99.3599.11-262.33-272.48</div><div>99.1199.00-272.48-277.27</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>98.1497.95-313.88-321.78</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>92.7192.70-544.43-544.92</div><div>92.7089.22-544.92-693.00</div><div>89.2280.00-693.00-1084.69</div></div></div>							
Schnitt:		Anlage Q1 Schnitt 8L				Seite Anlage Q1/3	
Kapitel:		1 LF 1.1 (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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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>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>101.65</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>99.35</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>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>105.80</td><td>-1.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-1.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-1.2</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-1.2</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-1.2</td><td>5.00</td><td>6.07</td><td>19.02</td></tr><tr><td>105.50</td><td>-1.2</td><td>5.00</td><td>6.06</td><td>23.77</td></tr><tr><td>105.50</td><td>-1.2</td><td>5.00</td><td>6.06</td><td>23.77</td></tr><tr><td>105.45</td><td>-1.2</td><td>5.00</td><td>6.05</td><td>28.53</td></tr><tr><td>105.40</td><td>-1.2</td><td>5.00</td><td>6.04</td><td>33.28</td></tr><tr><td>105.35</td><td>-1.2</td><td>5.00</td><td>6.03</td><td>38.04</td></tr><tr><td>105.35</td><td>-1.2</td><td>5.00</td><td>6.03</td><td>34.79</td></tr><tr><td>105.30</td><td>-1.2</td><td>5.00</td><td>6.02</td><td>37.37</td></tr><tr><td>105.10</td><td>-1.2</td><td>5.00</td><td>5.98</td><td>47.68</td></tr><tr><td>105.05</td><td>-1.2</td><td>5.00</td><td>5.97</td><td>50.26</td></tr><tr><td>105.05</td><td>-1.2</td><td>5.00</td><td>5.97</td><td>50.26</td></tr><tr><td>105.00</td><td>-1.2</td><td>5.00</td><td>5.96</td><td>52.84</td></tr><tr><td>105.00</td><td>-1.2</td><td>5.00</td><td>5.96</td><td>52.84</td></tr><tr><td>104.95</td><td>-1.2</td><td>5.00</td><td>5.95</td><td>54.14</td></tr><tr><td>104.14</td><td>-1.2</td><td>5.00</td><td>5.80</td><td>74.93</td></tr><tr><td>104.09</td><td>-1.2</td><td>5.00</td><td>5.79</td><td>76.23</td></tr><tr><td>104.09</td><td>-1.2</td><td>5.00</td><td>5.79</td><td>76.23</td></tr><tr><td>104.04</td><td>-1.2</td><td>5.00</td><td>5.79</td><td>77.53</td></tr><tr><td>103.14</td><td>-1.1</td><td>5.00</td><td>5.65</td><td>100.92</td></tr><tr><td>103.08</td><td>-1.1</td><td>5.00</td><td>5.65</td><td>102.22</td></tr><tr><td>103.08</td><td>-1.1</td><td>5.00</td><td>5.65</td><td>102.22</td></tr><tr><td>103.03</td><td>-1.1</td><td>5.00</td><td>5.65</td><td>103.52</td></tr><tr><td>102.53</td><td>-1.1</td><td>5.00</td><td>5.63</td><td>116.52</td></tr><tr><td>102.48</td><td>-1.1</td><td>5.00</td><td>5.63</td><td>117.82</td></tr><tr><td>102.48</td><td>-1.1</td><td>5.00</td><td>5.63</td><td>210.02</td></tr><tr><td>102.43</td><td>-1.1</td><td>5.00</td><td>5.63</td><td>213.37</td></tr><tr><td>102.43</td><td>-1.1</td><td>50.00</td><td>56.31</td><td>213.37</td></tr><tr><td>102.38</td><td>-1.1</td><td>50.00</td><td>56.33</td><td>216.72</td></tr><tr><td>102.14</td><td>-1.1</td><td>50.00</td><td>56.57</td><td>233.45</td></tr><tr><td>102.09</td><td>-1.1</td><td>50.00</td><td>56.64</td><td>236.80</td></tr><tr><td>102.09</td><td>-1.1</td><td>50.00</td><td>56.64</td><td>236.80</td></tr><tr><td>102.04</td><td>-1.1</td><td>50.00</td><td>56.72</td><td>240.14</td></tr><tr><td>101.90</td><td>-1.1</td><td>50.00</td><td>57.01</td><td>250.19</td></tr><tr><td>101.85</td><td>-1.1</td><td>50.00</td><td>57.12</td><td>253.53</td></tr><tr><td>101.85</td><td>-1.1</td><td>50.00</td><td>57.12</td><td>253.53</td></tr><tr><td>101.80</td><td>-1.1</td><td>50.00</td><td>57.25</td><td>257.01</td></tr></tbody></table>			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	101.65	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	99.35	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	-	-	-	106.05	-1.2	-	-	-	105.80	-1.2	-	-	-	105.75	-1.2	0.00	0.00	0.00	105.75	-1.2	0.00	0.00	0.00	105.70	-1.2	0.00	0.00	4.75	105.55	-1.2	5.00	6.07	19.02	105.50	-1.2	5.00	6.06	23.77	105.50	-1.2	5.00	6.06	23.77	105.45	-1.2	5.00	6.05	28.53	105.40	-1.2	5.00	6.04	33.28	105.35	-1.2	5.00	6.03	38.04	105.35	-1.2	5.00	6.03	34.79	105.30	-1.2	5.00	6.02	37.37	105.10	-1.2	5.00	5.98	47.68	105.05	-1.2	5.00	5.97	50.26	105.05	-1.2	5.00	5.97	50.26	105.00	-1.2	5.00	5.96	52.84	105.00	-1.2	5.00	5.96	52.84	104.95	-1.2	5.00	5.95	54.14	104.14	-1.2	5.00	5.80	74.93	104.09	-1.2	5.00	5.79	76.23	104.09	-1.2	5.00	5.79	76.23	104.04	-1.2	5.00	5.79	77.53	103.14	-1.1	5.00	5.65	100.92	103.08	-1.1	5.00	5.65	102.22	103.08	-1.1	5.00	5.65	102.22	103.03	-1.1	5.00	5.65	103.52	102.53	-1.1	5.00	5.63	116.52	102.48	-1.1	5.00	5.63	117.82	102.48	-1.1	5.00	5.63	210.02	102.43	-1.1	5.00	5.63	213.37	102.43	-1.1	50.00	56.31	213.37	102.38	-1.1	50.00	56.33	216.72	102.14	-1.1	50.00	56.57	233.45	102.09	-1.1	50.00	56.64	236.80	102.09	-1.1	50.00	56.64	236.80	102.04	-1.1	50.00	56.72	240.14	101.90	-1.1	50.00	57.01	250.19	101.85	-1.1	50.00	57.12	253.53	101.85	-1.1	50.00	57.12	253.53	101.80	-1.1	50.00	57.25	257.01
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103.08	-1.1	5.00	5.65	102.22																																																																																																																																																																																																																																																																																																																		
103.03	-1.1	5.00	5.65	103.52																																																																																																																																																																																																																																																																																																																		
102.53	-1.1	5.00	5.63	116.52																																																																																																																																																																																																																																																																																																																		
102.48	-1.1	5.00	5.63	117.82																																																																																																																																																																																																																																																																																																																		
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102.38	-1.1	50.00	56.33	216.72																																																																																																																																																																																																																																																																																																																		
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102.09	-1.1	50.00	56.64	236.80																																																																																																																																																																																																																																																																																																																		
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102.04	-1.1	50.00	56.72	240.14																																																																																																																																																																																																																																																																																																																		
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101.80	-1.1	50.00	57.25	257.01																																																																																																																																																																																																																																																																																																																		
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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																																																																																																																																																												
<table><tr><td>101.70</td><td>-1.2</td><td>50.00</td><td>57.54</td><td>263.98</td></tr><tr><td>101.65</td><td>-1.2</td><td>50.00</td><td>57.69</td><td>267.46</td></tr><tr><td>101.65</td><td>-1.2</td><td>50.00</td><td>57.69</td><td>267.46</td></tr><tr><td>101.60</td><td>-1.2</td><td>50.00</td><td>57.86</td><td>270.94</td></tr><tr><td>101.14</td><td>-1.2</td><td>50.00</td><td>59.78</td><td>302.28</td></tr><tr><td>101.09</td><td>-1.2</td><td>50.00</td><td>60.04</td><td>305.76</td></tr><tr><td>101.09</td><td>-1.2</td><td>50.00</td><td>60.04</td><td>305.76</td></tr><tr><td>101.04</td><td>-1.2</td><td>50.00</td><td>60.31</td><td>309.24</td></tr><tr><td>100.74</td><td>-1.2</td><td>50.00</td><td>62.09</td><td>330.13</td></tr><tr><td>100.69</td><td>-1.2</td><td>50.00</td><td>62.41</td><td>333.61</td></tr><tr><td>100.64</td><td>-1.3</td><td>50.00</td><td>62.72</td><td>336.91</td></tr><tr><td>100.31</td><td>-1.3</td><td>50.00</td><td>64.99</td><td>359.74</td></tr><tr><td>100.26</td><td>-1.3</td><td>50.00</td><td>65.33</td><td>363.00</td></tr><tr><td>100.26</td><td>-1.3</td><td>50.00</td><td>65.33</td><td>363.00</td></tr><tr><td>100.22</td><td>-1.3</td><td>50.00</td><td>65.67</td><td>366.28</td></tr><tr><td>100.12</td><td>-1.3</td><td>50.00</td><td>66.37</td><td>372.82</td></tr><tr><td>100.08</td><td>-1.3</td><td>50.00</td><td>66.72</td><td>376.09</td></tr><tr><td>100.08</td><td>-1.3</td><td>50.00</td><td>66.72</td><td>376.09</td></tr><tr><td>100.03</td><td>-1.3</td><td>50.00</td><td>67.07</td><td>379.36</td></tr><tr><td>99.89</td><td>-1.4</td><td>50.00</td><td>68.14</td><td>389.17</td></tr><tr><td>99.84</td><td>-1.4</td><td>50.00</td><td>68.50</td><td>392.44</td></tr><tr><td>99.84</td><td>-1.4</td><td>50.00</td><td>68.50</td><td>392.44</td></tr><tr><td>99.79</td><td>-1.4</td><td>50.00</td><td>68.86</td><td>395.71</td></tr><tr><td>99.46</td><td>-1.4</td><td>50.00</td><td>71.39</td><td>418.57</td></tr><tr><td>99.41</td><td>-1.4</td><td>50.00</td><td>71.75</td><td>421.83</td></tr><tr><td>99.41</td><td>-1.4</td><td>50.00</td><td>71.75</td><td>421.83</td></tr><tr><td>99.35</td><td>-1.4</td><td>50.00</td><td>72.24</td><td>426.28</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00877479 Theoretischer Fußpunkt = 99.349 m</p> <p>Einbindetiefe tg = 6.40 m Profillänge = 6.75 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 127.73 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 33.98 kN/m (Eah,k = 181.35 kN/m) Bv,k = 81.60 Summe V,k = 80.11 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 qc,m = 7.50 MN/m² (gemittelt von 100.23 bis 96.71 m) ==&gt; 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>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: Flusskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>99.35</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 99.35 m = 1.000 m²/m/m ==&gt; R,s1,d R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 172.15 / 1.40 = 122.96 kN/m R,d = Rb,d + R,s1,d = 988.01 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 153.28 - 0.00 + 39.07 + 0.00 = 192.35 kN/m ==&gt; µ = V,d / R,d = 192.35 / 988.01 = 0.19</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						101.70	-1.2	50.00	57.54	263.98	101.65	-1.2	50.00	57.69	267.46	101.65	-1.2	50.00	57.69	267.46	101.60	-1.2	50.00	57.86	270.94	101.14	-1.2	50.00	59.78	302.28	101.09	-1.2	50.00	60.04	305.76	101.09	-1.2	50.00	60.04	305.76	101.04	-1.2	50.00	60.31	309.24	100.74	-1.2	50.00	62.09	330.13	100.69	-1.2	50.00	62.41	333.61	100.64	-1.3	50.00	62.72	336.91	100.31	-1.3	50.00	64.99	359.74	100.26	-1.3	50.00	65.33	363.00	100.26	-1.3	50.00	65.33	363.00	100.22	-1.3	50.00	65.67	366.28	100.12	-1.3	50.00	66.37	372.82	100.08	-1.3	50.00	66.72	376.09	100.08	-1.3	50.00	66.72	376.09	100.03	-1.3	50.00	67.07	379.36	99.89	-1.4	50.00	68.14	389.17	99.84	-1.4	50.00	68.50	392.44	99.84	-1.4	50.00	68.50	392.44	99.79	-1.4	50.00	68.86	395.71	99.46	-1.4	50.00	71.39	418.57	99.41	-1.4	50.00	71.75	421.83	99.41	-1.4	50.00	71.75	421.83	99.35	-1.4	50.00	72.24	426.28	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: Flusskies, -sand (über GS)	101.85	99.35	55.00	s3: Flusskies, -sand
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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>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: 01_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><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>106.10</td><td>103.23</td><td>101.88</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>45.90</td><td>0.00</td><td>100.69</td><td>92.70</td><td>Ständig</td></tr></table> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 6.75 m</div> <div>Bettungsmodule</div> <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/m²]</th><th>[MN/m²]</th></tr><tr><td>105.75</td><td>105.35</td><td>5.000</td><td>5.000</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>101.85</td><td>50.000</td><td>50.000</td></tr><tr><td>101.85</td><td>80.00</td><td>50.000</td><td>50.000</td></tr></table>			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	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m²]	[MN/m²]	105.75	105.35	5.000	5.000	105.35	102.48	5.000	5.000	102.48	101.85	50.000	50.000	101.85	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 <math>\mu_e = 263.056 / 759.424 = 0.346</math> Bettungslager <math>B_{h,d} = 263.056 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 759.424 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>105.35</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>101.85</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><tr><td>4</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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><thead><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>) 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 colspan="2">[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>105.750</td><td>3.915</td><td>6.488</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>6.488</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>105.050</td><td>9.800</td><td>11.076</td><td>1.50</td><td>4.50</td></tr><tr><td>105.050</td><td>105.000</td><td>11.076</td><td>11.289</td><td>4.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.090</td><td>11.289</td><td>15.160</td><td>5.00</td><td>5.00</td></tr><tr><td>104.090</td><td>103.231</td><td>15.160</td><td>18.816</td><td>5.00</td><td>5.00</td></tr><tr><td>103.231</td><td>103.081</td><td>18.816</td><td>18.898</td><td>5.00</td><td>5.00</td></tr><tr><td>103.081</td><td>102.480</td><td>18.898</td><td>19.225</td><td>5.00</td><td>5.00</td></tr><tr><td>102.480</td><td>102.430</td><td>14.883</td><td>14.956</td><td>5.00</td><td>5.00</td></tr><tr><td>102.430</td><td>102.081</td><td>14.956</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>101.699</td><td>15.886</td><td>16.506</td><td>5.00</td><td>5.00</td></tr><tr><td>101.699</td><td>101.094</td><td>16.506</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>99.349</td><td>112.926</td><td>116.376</td><td>5.00</td><td>5.00</td></tr><tr><td>99.349</td><td>99.110</td><td>116.376</td><td>129.155</td><td>5.00</td><td>5.00</td></tr><tr><td>99.110</td><td>98.997</td><td>129.155</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>97.950</td><td>122.623</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></tbody></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	105.35	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	Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]		106.100	106.097	0.000	3.915	0.00	0.00	106.097	105.750	3.915	6.488	0.00	0.00	105.750	105.500	6.488	8.339	0.00	0.00	105.500	105.350	8.339	8.924	0.00	1.50	105.350	105.050	9.800	11.076	1.50	4.50	105.050	105.000	11.076	11.289	4.50	5.00	105.000	104.090	11.289	15.160	5.00	5.00	104.090	103.231	15.160	18.816	5.00	5.00	103.231	103.081	18.816	18.898	5.00	5.00	103.081	102.480	18.898	19.225	5.00	5.00	102.480	102.430	14.883	14.956	5.00	5.00	102.430	102.081	14.956	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	101.699	15.886	16.506	5.00	5.00	101.699	101.094	16.506	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	99.349	112.926	116.376	5.00	5.00	99.349	99.110	116.376	129.155	5.00	5.00	99.110	98.997	129.155	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	97.950	122.623	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
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]																																																																																																																																																																																																																																																																																																																																																																					
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4	80.00	21.00	11.50	32.50	0.00	0.00	-0.667	0.667	7.50	0.00																																																																																																																																																																																																																																																																																																																																																																					
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3	101.85	0.357	0.433	32.500	10.84	59.19	0.179																																																																																																																																																																																																																																																																																																																																																																								
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104.090	103.231	15.160	18.816	5.00	5.00																																																																																																																																																																																																																																																																																																																																																																										
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101.094	100.691	18.987	20.641	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	
<div><div><div>92.70089.21654.21067.7055.005.00</div><div>89.21680.00067.705105.5055.005.00</div></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 0.00 106.10 105.75</div><div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 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</div><div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 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 -46.95 104.09 103.23 -46.95 -60.59 103.23 103.08 -60.59 -62.97 103.08 102.48 -62.97 -72.50 102.48 102.43 -129.24 -131.36 102.43 102.08 -131.36 -146.19 102.08 101.88 -146.19 -154.67 101.88 101.85 -154.67 -156.02 101.85 101.70 -156.02 -162.45 101.70 101.09 -162.45 -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 99.35 -259.59 -262.33 99.35 99.11 -262.33 -272.48 99.11 99.00 -272.48 -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 97.95 -313.88 -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</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 -13.1 -2.1 -0.9</div></div>							
Schnitt:		Anlage Q1 Schnitt 8L				Seite Anlage Q1/9	
Kapitel:		2 LF 1.2 (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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<p>Schnittgrößen ([g+q+w],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>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>-7.3</td><td>-1.8</td><td>-0.3</td></tr><tr><td>105.50</td><td>-11.5</td><td>-1.9</td><td>-0.8</td></tr><tr><td>105.35</td><td>-13.7</td><td>-1.7</td><td>-1.1</td></tr><tr><td>105.05</td><td>-18.5</td><td>-2.5</td><td>-1.7</td></tr><tr><td>105.00</td><td>-19.3</td><td>-2.8</td><td>-1.8</td></tr><tr><td>104.09</td><td>-34.2</td><td>-10.6</td><td>-7.6</td></tr><tr><td>103.23</td><td>-48.5</td><td>-22.2</td><td>-21.4</td></tr><tr><td>103.08</td><td>-51.0</td><td>-24.6</td><td>-24.9</td></tr><tr><td>102.48</td><td>-61.2</td><td>-34.5</td><td>-42.6</td></tr><tr><td>102.43</td><td>-62.0</td><td>-35.1</td><td>-44.3</td></tr><tr><td>102.08</td><td>-58.8</td><td>-17.6</td><td>-53.5</td></tr><tr><td>101.88</td><td>-57.2</td><td>-8.1</td><td>-56.1</td></tr><tr><td>101.85</td><td>-56.9</td><td>-6.6</td><td>-56.3</td></tr><tr><td>101.70</td><td>-55.8</td><td>0.3</td><td>-56.8</td></tr><tr><td>101.09</td><td>-51.6</td><td>25.7</td><td>-48.8</td></tr><tr><td>100.69</td><td>-49.2</td><td>41.1</td><td>-35.3</td></tr><tr><td>100.26</td><td>-46.7</td><td>35.1</td><td>-18.9</td></tr><tr><td>100.08</td><td>-45.6</td><td>30.7</td><td>-12.6</td></tr><tr><td>99.84</td><td>-44.3</td><td>23.3</td><td>-6.2</td></tr><tr><td>99.41</td><td>-41.9</td><td>3.7</td><td>-0.1</td></tr><tr><td>99.35</td><td>-41.5</td><td>0.0</td><td>0.0</td></tr></table> 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102.43	-62.0	-35.1	-44.3																																																																																																																																																																																																																																																																														
102.08	-58.8	-17.6	-53.5																																																																																																																																																																																																																																																																														
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101.70	-55.8	0.3	-56.8																																																																																																																																																																																																																																																																														
101.09	-51.6	25.7	-48.8																																																																																																																																																																																																																																																																														
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100.26	-46.7	35.1	-18.9																																																																																																																																																																																																																																																																														
100.08	-45.6	30.7	-12.6																																																																																																																																																																																																																																																																														
99.84	-44.3	23.3	-6.2																																																																																																																																																																																																																																																																														
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Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.: 10																																																																																																																																																																																																																																																																													
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025																																																																																																																																																																																																																																																																															

Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



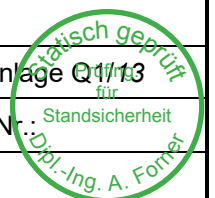
Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>99.41-41.93.7-0.1</div><div>99.35-41.50.00.0</div></div><div><div>Schnittgrößen (q,k)</div><div><div><div>Tiefe</div><div>N</div><div>Q</div><div>M</div></div><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>106.10</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.75</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>105.35</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>105.05</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>104.09</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.23</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>103.08</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.48</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.43</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>102.08</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.88</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.85</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.70</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>101.09</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.69</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.26</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>100.08</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.84</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.41</div><div>0.0</div><div>0.0</div><div>0.0</div></div><div><div>99.35</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<sub>Bh,k</sub></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>106.10</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.10</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.10</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>106.05</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.80</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.75</div><div>-2.2</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.75</div><div>-2.2</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>105.70</div><div>-2.2</div><div>0.00</div><div>0.00</div><div>4.75</div></div><div><div>105.55</div><div>-2.2</div><div>5.00</div><div>10.92</div><div>19.02</div></div><div><div>105.50</div><div>-2.2</div><div>5.00</div><div>10.86</div><div>23.77</div></div><div><div>105.50</div><div>-2.2</div><div>5.00</div><div>10.86</div><div>23.77</div></div><div><div>105.45</div><div>-2.2</div><div>5.00</div><div>10.80</div><div>28.53</div></div><div><div>105.40</div><div>-2.1</div><div>5.00</div><div>10.73</div><div>33.28</div></div><div><div>105.35</div><div>-2.1</div><div>5.00</div><div>10.67</div><div>38.04</div></div><div><div>105.35</div><div>-2.1</div><div>5.00</div><div>10.67</div><div>34.79</div></div><div><div>105.30</div><div>-2.1</div><div>5.00</div><div>10.60</div><div>37.37</div></div><div><div>105.10</div><div>-2.1</div><div>5.00</div><div>10.35</div><div>47.68</div></div><div><div>105.05</div><div>-2.1</div><div>5.00</div><div>10.28</div><div>50.26</div></div><div><div>105.05</div><div>-2.1</div><div>5.00</div><div>10.28</div><div>50.26</div></div><div><div>105.00</div><div>-2.0</div><div>5.00</div><div>10.22</div><div>52.84</div></div><div><div>105.00</div><div>-2.0</div><div>5.00</div><div>10.22</div><div>52.84</div></div><div><div>104.95</div><div>-2.0</div><div>5.00</div><div>10.16</div><div>54.14</div></div><div><div>104.14</div><div>-1.8</div><div>5.00</div><div>9.13</div><div>74.99</div></div><div><div>104.09</div><div>-1.8</div><div>5.00</div><div>9.07</div><div>76.30</div></div><div><div>104.09</div><div>-1.8</div><div>5.00</div><div>9.07</div><div>76.30</div></div><div><div>104.04</div><div>-1.8</div><div>5.00</div><div>9.01</div><div>77.60</div></div><div><div>103.28</div><div>-1.6</div><div>5.00</div><div>8.09</div><div>97.15</div></div><div><div>103.23</div><div>-1.6</div><div>5.00</div><div>8.04</div><div>98.45</div></div><div><div>103.23</div><div>-1.6</div><div>5.00</div><div>8.04</div><div>98.45</div></div><div><div>103.18</div><div>-1.6</div><div>5.00</div><div>7.98</div><div>99.74</div></div><div><div>103.13</div><div>-1.6</div><div>5.00</div><div>7.92</div><div>101.04</div></div><div><div>103.08</div><div>-1.6</div><div>5.00</div><div>7.87</div><div>102.33</div></div><div><div>103.08</div><div>-1.6</div><div>5.00</div><div>7.87</div><div>102.33</div></div><div><div>103.03</div><div>-1.6</div><div>5.00</div><div>7.81</div><div>103.62</div></div><div><div>102.53</div><div>-1.5</div><div>5.00</div><div>7.29</div><div>116.53</div></div><div><div>102.48</div><div>-1.4</div><div>5.00</div><div>7.24</div><div>117.82</div></div><div><div>102.48</div><div>-1.4</div><div>5.00</div><div>7.24</div><div>210.02</div></div></div></div></div>					
Schnitt: Anlage Q1 Schnitt 8L				Seite Anlage Q1/11	
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr. 1111	
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>102.43</td><td>-1.4</td><td>5.00</td><td>7.20</td><td>213.46</td></tr> <tr><td>102.43</td><td>-1.4</td><td>50.00</td><td>71.96</td><td>213.46</td></tr> <tr><td>102.38</td><td>-1.4</td><td>50.00</td><td>71.50</td><td>216.91</td></tr> <tr><td>102.13</td><td>-1.4</td><td>50.00</td><td>69.37</td><td>234.12</td></tr> <tr><td>102.08</td><td>-1.4</td><td>50.00</td><td>68.97</td><td>237.56</td></tr> <tr><td>102.08</td><td>-1.4</td><td>50.00</td><td>68.97</td><td>237.56</td></tr> <tr><td>102.03</td><td>-1.4</td><td>50.00</td><td>68.59</td><td>241.00</td></tr> <tr><td>101.93</td><td>-1.4</td><td>50.00</td><td>67.86</td><td>247.89</td></tr> <tr><td>101.88</td><td>-1.4</td><td>50.00</td><td>67.51</td><td>251.33</td></tr> <tr><td>101.88</td><td>-1.4</td><td>50.00</td><td>67.51</td><td>251.33</td></tr> <tr><td>101.85</td><td>-1.3</td><td>50.00</td><td>67.29</td><td>253.53</td></tr> <tr><td>101.85</td><td>-1.3</td><td>50.00</td><td>67.29</td><td>253.53</td></tr> <tr><td>101.80</td><td>-1.3</td><td>50.00</td><td>66.96</td><td>257.01</td></tr> <tr><td>101.75</td><td>-1.3</td><td>50.00</td><td>66.64</td><td>260.50</td></tr> <tr><td>101.70</td><td>-1.3</td><td>50.00</td><td>66.33</td><td>263.98</td></tr> <tr><td>101.70</td><td>-1.3</td><td>50.00</td><td>66.33</td><td>263.98</td></tr> <tr><td>101.65</td><td>-1.3</td><td>50.00</td><td>66.03</td><td>267.46</td></tr> <tr><td>101.14</td><td>-1.3</td><td>50.00</td><td>63.73</td><td>302.28</td></tr> <tr><td>101.09</td><td>-1.3</td><td>50.00</td><td>63.56</td><td>305.76</td></tr> <tr><td>101.09</td><td>-1.3</td><td>50.00</td><td>63.56</td><td>305.76</td></tr> <tr><td>101.04</td><td>-1.3</td><td>50.00</td><td>63.40</td><td>309.24</td></tr> <tr><td>100.74</td><td>-1.3</td><td>50.00</td><td>62.66</td><td>330.13</td></tr> <tr><td>100.69</td><td>-1.3</td><td>50.00</td><td>62.57</td><td>333.61</td></tr> <tr><td>100.69</td><td>-1.3</td><td>50.00</td><td>62.57</td><td>333.61</td></tr> <tr><td>100.69</td><td>-1.3</td><td>50.00</td><td>62.57</td><td>333.65</td></tr> <tr><td>100.69</td><td>-1.3</td><td>50.00</td><td>62.57</td><td>333.65</td></tr> <tr><td>100.64</td><td>-1.2</td><td>50.00</td><td>62.49</td><td>336.91</td></tr> <tr><td>100.31</td><td>-1.2</td><td>50.00</td><td>62.08</td><td>359.74</td></tr> <tr><td>100.26</td><td>-1.2</td><td>50.00</td><td>62.04</td><td>363.00</td></tr> <tr><td>100.26</td><td>-1.2</td><td>50.00</td><td>62.04</td><td>363.00</td></tr> <tr><td>100.22</td><td>-1.2</td><td>50.00</td><td>62.01</td><td>366.28</td></tr> <tr><td>100.12</td><td>-1.2</td><td>50.00</td><td>61.95</td><td>372.82</td></tr> <tr><td>100.08</td><td>-1.2</td><td>50.00</td><td>61.92</td><td>376.09</td></tr> <tr><td>100.08</td><td>-1.2</td><td>50.00</td><td>61.92</td><td>376.09</td></tr> <tr><td>100.03</td><td>-1.2</td><td>50.00</td><td>61.89</td><td>379.36</td></tr> <tr><td>99.89</td><td>-1.2</td><td>50.00</td><td>61.83</td><td>389.17</td></tr> <tr><td>99.84</td><td>-1.2</td><td>50.00</td><td>61.82</td><td>392.44</td></tr> <tr><td>99.84</td><td>-1.2</td><td>50.00</td><td>61.82</td><td>392.44</td></tr> <tr><td>99.79</td><td>-1.2</td><td>50.00</td><td>61.80</td><td>395.71</td></tr> <tr><td>99.46</td><td>-1.2</td><td>50.00</td><td>61.70</td><td>418.57</td></tr> <tr><td>99.41</td><td>-1.2</td><td>50.00</td><td>61.69</td><td>421.83</td></tr> <tr><td>99.41</td><td>-1.2</td><td>50.00</td><td>61.69</td><td>421.83</td></tr> <tr><td>99.35</td><td>-1.2</td><td>50.00</td><td>61.67</td><td>426.28</td></tr> </table> <p> Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.00030679  Theoretischer Fußpunkt = 99.349 m   Einbindetiefe <math>t_g</math> = 6.40 m  Profillänge = 6.75 m </p>					102.43	-1.4	5.00	7.20	213.46	102.43	-1.4	50.00	71.96	213.46	102.38	-1.4	50.00	71.50	216.91	102.13	-1.4	50.00	69.37	234.12	102.08	-1.4	50.00	68.97	237.56	102.08	-1.4	50.00	68.97	237.56	102.03	-1.4	50.00	68.59	241.00	101.93	-1.4	50.00	67.86	247.89	101.88	-1.4	50.00	67.51	251.33	101.88	-1.4	50.00	67.51	251.33	101.85	-1.3	50.00	67.29	253.53	101.85	-1.3	50.00	67.29	253.53	101.80	-1.3	50.00	66.96	257.01	101.75	-1.3	50.00	66.64	260.50	101.70	-1.3	50.00	66.33	263.98	101.70	-1.3	50.00	66.33	263.98	101.65	-1.3	50.00	66.03	267.46	101.14	-1.3	50.00	63.73	302.28	101.09	-1.3	50.00	63.56	305.76	101.09	-1.3	50.00	63.56	305.76	101.04	-1.3	50.00	63.40	309.24	100.74	-1.3	50.00	62.66	330.13	100.69	-1.3	50.00	62.57	333.61	100.69	-1.3	50.00	62.57	333.61	100.69	-1.3	50.00	62.57	333.65	100.69	-1.3	50.00	62.57	333.65	100.64	-1.2	50.00	62.49	336.91	100.31	-1.2	50.00	62.08	359.74	100.26	-1.2	50.00	62.04	363.00	100.26	-1.2	50.00	62.04	363.00	100.22	-1.2	50.00	62.01	366.28	100.12	-1.2	50.00	61.95	372.82	100.08	-1.2	50.00	61.92	376.09	100.08	-1.2	50.00	61.92	376.09	100.03	-1.2	50.00	61.89	379.36	99.89	-1.2	50.00	61.83	389.17	99.84	-1.2	50.00	61.82	392.44	99.84	-1.2	50.00	61.82	392.44	99.79	-1.2	50.00	61.80	395.71	99.46	-1.2	50.00	61.70	418.57	99.41	-1.2	50.00	61.69	421.83	99.41	-1.2	50.00	61.69	421.83	99.35	-1.2	50.00	61.67	426.28
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100.69	-1.3	50.00	62.57	333.61																																																																																																																																																																																																																							
100.69	-1.3	50.00	62.57	333.65																																																																																																																																																																																																																							
100.69	-1.3	50.00	62.57	333.65																																																																																																																																																																																																																							
100.64	-1.2	50.00	62.49	336.91																																																																																																																																																																																																																							
100.31	-1.2	50.00	62.08	359.74																																																																																																																																																																																																																							
100.26	-1.2	50.00	62.04	363.00																																																																																																																																																																																																																							
100.26	-1.2	50.00	62.04	363.00																																																																																																																																																																																																																							
100.22	-1.2	50.00	62.01	366.28																																																																																																																																																																																																																							
100.12	-1.2	50.00	61.95	372.82																																																																																																																																																																																																																							
100.08	-1.2	50.00	61.92	376.09																																																																																																																																																																																																																							
100.08	-1.2	50.00	61.92	376.09																																																																																																																																																																																																																							
100.03	-1.2	50.00	61.89	379.36																																																																																																																																																																																																																							
99.89	-1.2	50.00	61.83	389.17																																																																																																																																																																																																																							
99.84	-1.2	50.00	61.82	392.44																																																																																																																																																																																																																							
99.84	-1.2	50.00	61.82	392.44																																																																																																																																																																																																																							
99.79	-1.2	50.00	61.80	395.71																																																																																																																																																																																																																							
99.46	-1.2	50.00	61.70	418.57																																																																																																																																																																																																																							
99.41	-1.2	50.00	61.69	421.83																																																																																																																																																																																																																							
99.41	-1.2	50.00	61.69	421.83																																																																																																																																																																																																																							
99.35	-1.2	50.00	61.67	426.28																																																																																																																																																																																																																							
Schnitt: Anlage Q1 Schnitt 8L				Seite Anlage Q1/12																																																																																																																																																																																																																							
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)				Archiv Nr.: 2004-0025																																																																																																																																																																																																																							
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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  Nachweis des mobilisierten Erdwiderstands  Bedingung: <math>P_{v,k} + G'_{k} - G'_{k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{k} = 127.73 \text{ kN/m}</math>  <math>G'_{k} = 0.00 \text{ kN/m}</math>  <math>P_{v,k} = 0.00 \text{ kN/m}</math>  <math>E_{av,k} = 36.37 \text{ kN/m}</math> (<math>E_{ah,k} = 197.95 \text{ kN/m}</math>)  <math>B_{v,k} = 87.00</math>  Summe <math>V_{k} = 77.10 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit  (Erfahrungswerte nach EA Pfähle)  Verfahren 2: EAU Bild E 4-3 (rechts)  Bohrpfahlwand <math>D = 0.88 \text{ m}</math>  Verhältniswert (min, max) = 0.00  Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math>  (gemittelt von 100.23 bis 96.71 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math>  <math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></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>99.35</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.35 m = <math>1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 172.15 / 1.40 = 122.96 \text{ kN/m}</math>  <math>R_{d} = R_{b,d} + R_{s1,d} = 988.01 \text{ kN/m}</math></p> <p>Einwirkungen  <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 153.28 - 0.00 + 41.83 + 0.00 = 195.11 \text{ kN/m}</math>  <math>\Rightarrow \mu = V_{d} / R_{d} = 195.11 / 988.01 = 0.20</math></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	99.35	55.00	s3: Flussskies, -sand
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)																			
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Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/13																				
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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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 8 Datei: 02_BS 8_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 = 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></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 = 6.75 m</div> <div>Bettungsmodule</div> <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>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></tbody></table>			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	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.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast																																																																																																																					
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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																																																																																																																					
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102.48	80.00	50.000	50.000																																																																																																																											

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

Ausnutzungsgrad  $\mu_e = 213.240 / 215.247 = 0.991$   
Bettungslager  $B_{h,d} = 213.240 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 215.247 \text{ kN/m}$

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	-30.58	-26.13	-26.13	-10.61	6.900E+4	2.100E+7	-33.31

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]
-1.00	105.00	-1.4	0.0	-30.58	0.00	0.00
-0.90	105.00	-1.4	0.0	-30.58	0.00	0.00
-0.90	105.00	-1.4	0.0	-30.58	0.00	0.00
-0.80	105.00	-1.5	0.0	-30.58	0.00	0.00
-0.70	105.00	-1.5	0.0	-30.58	0.00	0.00
-0.60	105.00	-1.5	0.0	-30.58	0.00	0.00
-0.50	105.00	-1.6	0.0	-30.58	0.00	0.00
-0.40	105.00	-1.6	0.0	-30.58	0.00	0.00
-0.30	105.00	-1.7	0.0	-30.58	0.00	0.00
-0.20	105.00	-1.7	0.0	-30.58	0.00	0.00
-0.10	105.00	-1.8	0.0	-30.58	0.00	0.00
0.00	105.00	-1.8	0.0	-30.58	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 8\Linkes Ufer\00\_BS 8\_LF1.1 (ohne Lasten).vrb  
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0012

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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

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

von	bis	oben	unten	Wasserdruck
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]
106.100	105.500	10.890	10.890	0.00
105.500	105.350	10.890	10.890	0.00
105.350	105.100	10.890	10.890	1.50
105.100	105.000	10.890	10.890	4.00
105.000	104.050	10.890	7.260	5.00

Schnitt:	Anlage Q1	Schnitt 8L	Seite Anlage Q1/15
Kapitel:	3	LF 2.1 (BS-T, ohne Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

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



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Auftraggeber:		Stadtverwaltung Leipzig																																																																																																																																																																																																																																																																																																																																										
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																						
<table><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>101.346</td><td>16.092</td><td>17.953</td><td>5.00</td><td>5.00</td></tr><tr><td>101.346</td><td>101.094</td><td>17.953</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>99.349</td><td>112.926</td><td>116.376</td><td>5.00</td><td>5.00</td></tr><tr><td>99.349</td><td>99.110</td><td>116.376</td><td>129.155</td><td>5.00</td><td>5.00</td></tr><tr><td>99.110</td><td>98.997</td><td>129.155</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>97.950</td><td>122.623</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></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>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>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>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>101.35</td><td>-31.12</td><td>-50.40</td></tr><tr><td>101.35</td><td>101.09</td><td>-50.40</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>99.35</td><td>-132.54</td><td>-135.28</td></tr><tr><td>99.35</td><td>99.11</td><td>-135.28</td><td>-145.43</td></tr><tr><td>99.11</td><td>99.00</td><td>-145.43</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></table>								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	101.346	16.092	17.953	5.00	5.00	101.346	101.094	17.953	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	99.349	112.926	116.376	5.00	5.00	99.349	99.110	116.376	129.155	5.00	5.00	99.110	98.997	129.155	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	97.950	122.623	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	101.35	-31.12	-50.40	101.35	101.09	-50.40	-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	99.35	-132.54	-135.28	99.35	99.11	-135.28	-145.43	99.11	99.00	-145.43	-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
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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	97.950	122.623	117.764	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
97.950	97.636	117.764	116.163	5.00	5.00																																																																																																																																																																																																																																																																																																																																							
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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																																																																																																																																																																																																																																																																																																																																						
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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<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>106.10</td><td>-1.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-1.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-1.6</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]	106.10	0.0	0.0	0.0		105.50	-13.7	-6.5	-2.0		105.35	-17.2	-8.3	-3.1		105.10	-22.6	-11.7	-5.6		105.00	-24.8	-13.2	-6.8	-26.1	105.00	-24.8	12.9	-6.8		104.05	-45.3	-1.1	-1.6		103.05	-66.1	-13.4	-8.8		102.55	-76.6	-19.5	-17.0		102.48	-78.1	-21.0	-18.4		102.09	-83.1	-22.5	-27.2		101.85	-84.1	-18.5	-32.2		101.80	-84.1	-17.2	-33.1		101.35	-81.5	1.0	-37.1		101.09	-79.4	12.2	-35.4		100.69	-76.1	29.8	-26.9		100.26	-72.5	26.7	-14.8		100.08	-70.8	23.8	-10.0		99.84	-68.6	18.5	-5.0		99.41	-64.6	3.0	-0.1		99.35	-63.9	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		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		103.05	0.0	0.0	0.0		102.55	0.0	0.0	0.0		102.48	0.0	0.0	0.0		102.09	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		99.35	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-1.7	-	-	-	106.05	-1.7	-	-	-	105.55	-1.6	-	-	-	105.50	-1.6	-	-	-	105.50	-1.6	-	-	-	105.45	-1.6	-	-	-	105.40	-1.6	-	-	-	105.35	-1.6	-	-	-	105.35	-1.6	-	-	-	105.30	-1.6	-	-	-	105.15	-1.6	-	-	-	105.10	-1.6	-	-	-	105.10	-1.6	-	-	-	105.05	-1.6	-	-	-	105.05	-1.6	-	-	-	105.00	-1.6	-	-	-	105.00	-1.6	-	-	-	104.95	-1.6	-	-	-
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<table><tr><td>104.10</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.00</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.10</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.05</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.05</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.00</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.48</td><td>-1.4</td><td>0.00</td><td>0.00</td><td>13.54</td></tr><tr><td>102.48</td><td>-1.4</td><td>2.57</td><td>3.57</td><td>3.57</td></tr><tr><td>102.43</td><td>-1.4</td><td>2.57</td><td>3.57</td><td>6.92</td></tr><tr><td>102.14</td><td>-1.4</td><td>19.65</td><td>27.00</td><td>27.00</td></tr><tr><td>102.09</td><td>-1.4</td><td>19.65</td><td>26.97</td><td>30.35</td></tr><tr><td>102.09</td><td>-1.4</td><td>22.12</td><td>30.35</td><td>30.35</td></tr><tr><td>102.04</td><td>-1.4</td><td>22.12</td><td>30.31</td><td>33.70</td></tr><tr><td>101.90</td><td>-1.4</td><td>32.03</td><td>43.74</td><td>43.74</td></tr><tr><td>101.85</td><td>-1.4</td><td>32.03</td><td>43.70</td><td>47.09</td></tr><tr><td>101.85</td><td>-1.4</td><td>34.52</td><td>47.09</td><td>47.09</td></tr><tr><td>101.80</td><td>-1.4</td><td>34.52</td><td>47.04</td><td>50.57</td></tr><tr><td>101.80</td><td>-1.4</td><td>37.11</td><td>50.57</td><td>50.57</td></tr><tr><td>101.75</td><td>-1.4</td><td>37.11</td><td>50.53</td><td>54.05</td></tr><tr><td>101.40</td><td>-1.4</td><td>50.00</td><td>67.88</td><td>78.42</td></tr><tr><td>101.35</td><td>-1.4</td><td>50.00</td><td>67.89</td><td>81.90</td></tr><tr><td>101.35</td><td>-1.4</td><td>50.00</td><td>67.89</td><td>81.90</td></tr><tr><td>101.30</td><td>-1.4</td><td>50.00</td><td>67.90</td><td>85.38</td></tr><tr><td>101.14</td><td>-1.4</td><td>50.00</td><td>67.98</td><td>95.83</td></tr><tr><td>101.09</td><td>-1.4</td><td>50.00</td><td>68.02</td><td>99.31</td></tr><tr><td>101.09</td><td>-1.4</td><td>50.00</td><td>68.02</td><td>99.31</td></tr><tr><td>101.04</td><td>-1.4</td><td>50.00</td><td>68.07</td><td>102.79</td></tr><tr><td>100.74</td><td>-1.4</td><td>50.00</td><td>68.52</td><td>123.68</td></tr><tr><td>100.69</td><td>-1.4</td><td>50.00</td><td>68.62</td><td>127.17</td></tr><tr><td>100.69</td><td>-1.4</td><td>50.00</td><td>68.62</td><td>127.17</td></tr><tr><td>100.69</td><td>-1.4</td><td>50.00</td><td>68.62</td><td>127.20</td></tr><tr><td>100.69</td><td>-1.4</td><td>50.00</td><td>68.62</td><td>127.20</td></tr><tr><td>100.64</td><td>-1.4</td><td>50.00</td><td>68.72</td><td>130.46</td></tr><tr><td>100.31</td><td>-1.4</td><td>50.00</td><td>69.52</td><td>153.30</td></tr><tr><td>100.26</td><td>-1.4</td><td>50.00</td><td>69.65</td><td>156.56</td></tr><tr><td>100.26</td><td>-1.4</td><td>50.00</td><td>69.65</td><td>156.56</td></tr><tr><td>100.22</td><td>-1.4</td><td>50.00</td><td>69.78</td><td>159.83</td></tr><tr><td>100.12</td><td>-1.4</td><td>50.00</td><td>70.06</td><td>166.37</td></tr><tr><td>100.08</td><td>-1.4</td><td>50.00</td><td>70.19</td><td>169.64</td></tr><tr><td>100.08</td><td>-1.4</td><td>50.00</td><td>70.19</td><td>169.64</td></tr><tr><td>100.03</td><td>-1.4</td><td>50.00</td><td>70.34</td><td>172.91</td></tr><tr><td>99.89</td><td>-1.4</td><td>50.00</td><td>70.77</td><td>182.72</td></tr><tr><td>99.84</td><td>-1.4</td><td>50.00</td><td>70.91</td><td>185.99</td></tr><tr><td>99.84</td><td>-1.4</td><td>50.00</td><td>70.91</td><td>185.99</td></tr><tr><td>99.79</td><td>-1.4</td><td>50.00</td><td>71.06</td><td>189.26</td></tr><tr><td>99.46</td><td>-1.4</td><td>50.00</td><td>72.11</td><td>212.12</td></tr><tr><td>99.41</td><td>-1.4</td><td>50.00</td><td>72.26</td><td>215.39</td></tr><tr><td>99.41</td><td>-1.4</td><td>50.00</td><td>72.26</td><td>215.39</td></tr><tr><td>99.35</td><td>-1.4</td><td>50.00</td><td>72.46</td><td>219.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00364338 Theoretischer Fußpunkt = 99.349 m</p> <p>Einbindetiefe tg = 3.20 m Profillänge = 6.75 m</p>			104.10	-1.5	-	-	-	104.05	-1.5	-	-	-	104.05	-1.5	-	-	-	104.00	-1.5	-	-	-	103.10	-1.4	-	-	-	103.05	-1.4	-	-	-	103.05	-1.4	-	-	-	103.00	-1.4	-	-	-	102.60	-1.4	-	-	-	102.55	-1.4	0.00	0.00	0.00	102.55	-1.4	0.00	0.00	11.73	102.48	-1.4	0.00	0.00	13.54	102.48	-1.4	2.57	3.57	3.57	102.43	-1.4	2.57	3.57	6.92	102.14	-1.4	19.65	27.00	27.00	102.09	-1.4	19.65	26.97	30.35	102.09	-1.4	22.12	30.35	30.35	102.04	-1.4	22.12	30.31	33.70	101.90	-1.4	32.03	43.74	43.74	101.85	-1.4	32.03	43.70	47.09	101.85	-1.4	34.52	47.09	47.09	101.80	-1.4	34.52	47.04	50.57	101.80	-1.4	37.11	50.57	50.57	101.75	-1.4	37.11	50.53	54.05	101.40	-1.4	50.00	67.88	78.42	101.35	-1.4	50.00	67.89	81.90	101.35	-1.4	50.00	67.89	81.90	101.30	-1.4	50.00	67.90	85.38	101.14	-1.4	50.00	67.98	95.83	101.09	-1.4	50.00	68.02	99.31	101.09	-1.4	50.00	68.02	99.31	101.04	-1.4	50.00	68.07	102.79	100.74	-1.4	50.00	68.52	123.68	100.69	-1.4	50.00	68.62	127.17	100.69	-1.4	50.00	68.62	127.17	100.69	-1.4	50.00	68.62	127.20	100.69	-1.4	50.00	68.62	127.20	100.64	-1.4	50.00	68.72	130.46	100.31	-1.4	50.00	69.52	153.30	100.26	-1.4	50.00	69.65	156.56	100.26	-1.4	50.00	69.65	156.56	100.22	-1.4	50.00	69.78	159.83	100.12	-1.4	50.00	70.06	166.37	100.08	-1.4	50.00	70.19	169.64	100.08	-1.4	50.00	70.19	169.64	100.03	-1.4	50.00	70.34	172.91	99.89	-1.4	50.00	70.77	182.72	99.84	-1.4	50.00	70.91	185.99	99.84	-1.4	50.00	70.91	185.99	99.79	-1.4	50.00	71.06	189.26	99.46	-1.4	50.00	72.11	212.12	99.41	-1.4	50.00	72.26	215.39	99.41	-1.4	50.00	72.26	215.39	99.35	-1.4	50.00	72.46	219.84
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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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{,k} - G'_{,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{,k} = 127.73 \text{ kN/m}</math> <math>G'_{,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 33.97 \text{ kN/m}</math> (<math>E_{ah,k} = 181.31 \text{ kN/m}</math>) <math>B_{v,k} = 73.38</math> Summe <math>V_{,k} = 88.32 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.23 bis 96.71 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></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>99.35</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 99.35 m = 1.000 m<sup>2</sup>/m/m <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 172.15 / 1.40 = 122.96 \text{ kN/m}</math> <math>R_{,d} = R_{b,d} + R_{s1,d} = 988.01 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{,d} = G_{,d} - G'_{,k} + E_{av,d} + P_{v,d} = 153.28 - 0.00 + 39.07 + 0.00 = 192.34 \text{ kN/m}</math> <math>\implies \mu = V_{,d} / R_{,d} = 192.34 / 988.01 = 0.19</math></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	99.35	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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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>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: 03_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>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>Erddruckumlagerung: EAB 2012 Bild EB 70-1.c</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 8.05 m</div> <div>Bettungsmodule</div> <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>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></tbody></table>			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	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
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Statisch geprüft  
für  
Standicherheit  
Dipl.-Ing. A. Forner

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<div>Ausnutzungsgrad <math>\mu_{ue} = 423.936 / 427.031 = 0.993</math> Bettungslager <math>B_{h,d} = 423.936 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 427.031 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_d</math></th><th><math>N(g+q+w),k</math></th><th><math>N(g+w),k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-37.04</td><td>-31.74</td><td>-31.74</td><td>-10.76</td><td>6.900E+4</td><td>2.100E+7</td><td>-40.47</td></tr></table> <div>Zusätzlich für Steifen Steife 1 Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_d</math></th><th><math>Q_d</math></th><th><math>M_d</math></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>-1.4</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-1.4</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-1.4</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>105.00</td><td>-1.5</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>105.00</td><td>-1.5</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>105.00</td><td>-1.6</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>105.00</td><td>-1.6</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>105.00</td><td>-1.7</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>105.00</td><td>-1.7</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>105.00</td><td>-1.8</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>105.00</td><td>-1.9</td><td>0.0</td><td>-37.04</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>105.00</td><td>-1.9</td><td>0.0</td><td>-37.04</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\Linkes Ufer\00_BS_8_LF1.1 (ohne Lasten).vrb eingeliesen.</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>105.00</td><td>-0.0012</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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>101.85</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><tr><td>4</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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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>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></table> <div>Aktive Erddruckordinaten (<math>[g+q],k</math>) 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>106.100</td><td>106.097</td><td>16.299</td><td>16.299</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></tr><tr><td>105.500</td><td>105.350</td><td>16.299</td><td>16.299</td><td>0.00</td></tr><tr><td>105.350</td><td>105.100</td><td>16.299</td><td>16.299</td><td>1.50</td></tr><tr><td></td><td></td><td></td><td></td><td>4.00</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	-37.04	-31.74	-31.74	-10.76	6.900E+4	2.100E+7	-40.47	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	-1.4	0.0	-37.04	0.00	0.00	-0.90	105.00	-1.4	0.0	-37.04	0.00	0.00	-0.90	105.00	-1.4	0.0	-37.04	0.00	0.00	-0.80	105.00	-1.5	0.0	-37.04	0.00	0.00	-0.70	105.00	-1.5	0.0	-37.04	0.00	0.00	-0.60	105.00	-1.6	0.0	-37.04	0.00	0.00	-0.50	105.00	-1.6	0.0	-37.04	0.00	0.00	-0.40	105.00	-1.7	0.0	-37.04	0.00	0.00	-0.30	105.00	-1.7	0.0	-37.04	0.00	0.00	-0.20	105.00	-1.8	0.0	-37.04	0.00	0.00	-0.10	105.00	-1.9	0.0	-37.04	0.00	0.00	0.00	105.00	-1.9	0.0	-37.04	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	105.00	-0.0012	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	Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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]	106.100	106.097	16.299	16.299	0.00	106.097	105.500	16.299	16.299	0.00	105.500	105.350	16.299	16.299	0.00	105.350	105.100	16.299	16.299	1.50					4.00	<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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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):	
Auftraggeber: Stadtverwaltung Leipzig					
Verfasser: INROS LACKNER SE, Niederlassung Cottbus				Datum: 21.06.2024	
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	102.081	14.883	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	99.981	83.604	87.220	5.00	5.00
99.981	99.839	87.220	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
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					
Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017 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					
Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.30 Anpassungsfaktor Erdwiderstand = 0.80 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 -27.62 101.88 101.85 -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					
Schnitt: Anlage Q1 Schnitt 8L				Seite Anlage Q1/23	
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><div><div>100.08 99.98 -104.39 -108.42</div><div>99.98 99.84 -108.42 -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>Tiefe N Q M A(h)</div><div>[mNHN] [kN/m] [kN/m] [kN·m/m] [kN/m]</div><div>106.10 0.0 0.0 0.0</div><div>106.10 -0.1 0.0 0.0</div><div>105.50 -17.2 -11.2 -3.4</div><div>105.35 -21.4 -14.2 -5.3</div><div>105.10 -28.1 -19.7 -9.5</div><div>105.00 -30.8 -22.1 -11.6 -37.0</div><div>105.00 -30.8 14.9 -11.6</div><div>104.05 -55.8 -6.7 -8.3</div><div>103.23 -76.3 -21.9 -20.0</div><div>103.05 -80.9 -25.2 -24.3</div><div>102.55 -93.4 -34.5 -39.2</div><div>102.48 -95.0 -36.4 -41.7</div><div>102.08 -100.8 -38.6 -57.0</div><div>101.88 -101.9 -35.0 -64.4</div><div>101.85 -101.9 -34.1 -65.5</div><div>101.80 -101.9 -32.6 -67.2</div><div>101.19 -96.1 -0.4 -78.3</div><div>101.09 -94.6 6.3 -78.0</div><div>100.69 -87.9 33.6 -70.0</div><div>100.26 -80.2 39.0 -54.5</div><div>100.08 -76.5 40.2 -46.9</div><div>99.98 -74.6 40.4 -43.1</div><div>99.84 -71.6 40.2 -37.4</div><div>99.41 -61.9 35.0 -21.1</div><div>99.11 -54.4 26.7 -11.7</div><div>99.05 -52.9 24.7 -10.2</div><div>99.00 -51.4 22.8 -8.9</div><div>98.99 -51.2 22.4 -8.7</div><div>98.56 -39.3 9.4 -2.0</div><div>98.37 -33.6 4.9 -0.7</div><div>98.14 -26.2 0.8 0.0</div><div>98.09 -24.8 0.4 0.0</div><div>98.05 -23.4 0.0 0.0</div></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>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></div>		
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/24
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><div><div><div><div>105.00</div><div>-26.8</div><div>-19.2</div><div>-10.1</div><div>-31.7</div></div><div><div>105.00</div><div>-26.8</div><div>12.6</div><div>-10.1</div><div></div></div><div><div>104.05</div><div>-48.5</div><div>-6.0</div><div>-7.5</div><div></div></div><div><div>103.23</div><div>-66.4</div><div>-19.0</div><div>-17.8</div><div></div></div><div><div>103.05</div><div>-70.3</div><div>-21.9</div><div>-21.5</div><div></div></div><div><div>102.55</div><div>-81.2</div><div>-29.8</div><div>-34.4</div><div></div></div><div><div>102.48</div><div>-82.8</div><div>-31.5</div><div>-36.6</div><div></div></div><div><div>102.08</div><div>-87.8</div><div>-33.4</div><div>-49.9</div><div></div></div><div><div>101.88</div><div>-88.7</div><div>-30.2</div><div>-56.2</div><div></div></div><div><div>101.85</div><div>-88.8</div><div>-29.5</div><div>-57.2</div><div></div></div><div><div>101.80</div><div>-88.8</div><div>-28.2</div><div>-58.6</div><div></div></div><div><div>101.19</div><div>-83.8</div><div>-0.2</div><div>-68.2</div><div></div></div><div><div>101.09</div><div>-82.4</div><div>5.6</div><div>-68.0</div><div></div></div><div><div>100.69</div><div>-76.6</div><div>29.3</div><div>-60.9</div><div></div></div><div><div>100.26</div><div>-69.9</div><div>33.9</div><div>-47.4</div><div></div></div><div><div>100.08</div><div>-66.7</div><div>35.0</div><div>-40.8</div><div></div></div><div><div>99.98</div><div>-65.0</div><div>35.2</div><div>-37.5</div><div></div></div><div><div>99.84</div><div>-62.4</div><div>35.0</div><div>-32.5</div><div></div></div><div><div>99.41</div><div>-54.0</div><div>30.5</div><div>-18.4</div><div></div></div><div><div>99.11</div><div>-47.5</div><div>23.2</div><div>-10.1</div><div></div></div><div><div>99.05</div><div>-46.2</div><div>21.5</div><div>-8.9</div><div></div></div><div><div>99.00</div><div>-44.9</div><div>19.8</div><div>-7.7</div><div></div></div><div><div>98.99</div><div>-44.7</div><div>19.5</div><div>-7.5</div><div></div></div><div><div>98.56</div><div>-34.3</div><div>8.2</div><div>-1.7</div><div></div></div><div><div>98.37</div><div>-29.4</div><div>4.2</div><div>-0.6</div><div></div></div><div><div>98.14</div><div>-23.0</div><div>0.7</div><div>0.0</div><div></div></div><div><div>98.09</div><div>-21.8</div><div>0.3</div><div>0.0</div><div></div></div><div><div>98.05</div><div>-20.5</div><div>0.0</div><div>0.0</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><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>-14.9</div><div>-9.8</div><div>-2.9</div><div></div></div><div><div>105.35</div><div>-18.6</div><div>-12.3</div><div>-4.6</div><div></div></div><div><div>105.10</div><div>-24.5</div><div>-17.1</div><div>-8.3</div><div></div></div><div><div>105.00</div><div>-26.8</div><div>-19.2</div><div>-10.1</div><div>-31.7</div></div><div><div>105.00</div><div>-26.8</div><div>12.6</div><div>-10.1</div><div></div></div><div><div>104.05</div><div>-48.5</div><div>-6.0</div><div>-7.5</div><div></div></div><div><div>103.23</div><div>-66.4</div><div>-19.0</div><div>-17.8</div><div></div></div><div><div>103.05</div><div>-70.3</div><div>-21.9</div><div>-21.5</div><div></div></div><div><div>102.55</div><div>-81.2</div><div>-29.8</div><div>-34.4</div><div></div></div><div><div>102.48</div><div>-82.8</div><div>-31.5</div><div>-36.6</div><div></div></div><div><div>102.08</div><div>-87.8</div><div>-33.4</div><div>-49.9</div><div></div></div><div><div>101.88</div><div>-88.7</div><div>-30.2</div><div>-56.2</div><div></div></div><div><div>101.85</div><div>-88.8</div><div>-29.5</div><div>-57.2</div><div></div></div><div><div>101.80</div><div>-88.8</div><div>-28.2</div><div>-58.6</div><div></div></div><div><div>101.19</div><div>-83.8</div><div>-0.2</div><div>-68.2</div><div></div></div><div><div>101.09</div><div>-82.4</div><div>5.6</div><div>-68.0</div><div></div></div><div><div>100.69</div><div>-76.6</div><div>29.3</div><div>-60.9</div><div></div></div><div><div>100.26</div><div>-69.9</div><div>33.9</div><div>-47.4</div><div></div></div><div><div>100.08</div><div>-66.7</div><div>35.0</div><div>-40.8</div><div></div></div><div><div>99.98</div><div>-65.0</div><div>35.2</div><div>-37.5</div><div></div></div><div><div>99.84</div><div>-62.4</div><div>35.0</div><div>-32.5</div><div></div></div><div><div>99.41</div><div>-54.0</div><div>30.5</div><div>-18.4</div><div></div></div><div><div>99.11</div><div>-47.5</div><div>23.2</div><div>-10.1</div><div></div></div><div><div>99.05</div><div>-46.2</div><div>21.5</div><div>-8.9</div><div></div></div><div><div>99.00</div><div>-44.9</div><div>19.8</div><div>-7.7</div><div></div></div><div><div>98.99</div><div>-44.7</div><div>19.5</div><div>-7.5</div><div></div></div><div><div>98.56</div><div>-34.3</div><div>8.2</div><div>-1.7</div><div></div></div><div><div>98.37</div><div>-29.4</div><div>4.2</div><div>-0.6</div><div></div></div><div><div>98.14</div><div>-23.0</div><div>0.7</div><div>0.0</div><div></div></div><div><div>98.09</div><div>-21.8</div><div>0.3</div><div>0.0</div><div></div></div><div><div>98.05</div><div>-20.5</div><div>0.0</div><div>0.0</div><div></div></div></div></div>					
Schnitt:		Anlage Q1 Schnitt 8L		Seite Anlage Q1/25	
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>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>106.10</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>102.08</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>99.98</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></tbody></table> <div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> 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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus			Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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50.00</td><td>99.35</td><td>99.35</td><td>212.12</td><td></td></tr><tr><td>99.41</td><td>-2.0</td><td>50.00</td><td>99.98</td><td>99.98</td><td>215.39</td><td></td></tr><tr><td>99.41</td><td>-2.0</td><td>50.00</td><td>99.98</td><td>99.98</td><td>215.39</td><td></td></tr><tr><td>99.36</td><td>-2.0</td><td>50.00</td><td>100.66</td><td>100.66</td><td>218.88</td><td></td></tr><tr><td>99.16</td><td>-2.1</td><td>50.00</td><td>103.39</td><td>103.39</td><td>232.84</td><td></td></tr><tr><td>99.11</td><td>-2.1</td><td>50.00</td><td>104.08</td><td>104.08</td><td>236.33</td><td></td></tr><tr><td>99.11</td><td>-2.1</td><td>50.00</td><td>104.08</td><td>104.08</td><td>236.33</td><td></td></tr><tr><td>99.05</td><td>-2.1</td><td>50.00</td><td>104.85</td><td>104.85</td><td>240.22</td><td></td></tr><tr><td>99.05</td><td>-2.1</td><td>50.00</td><td>104.85</td><td>104.85</td><td>240.22</td><td></td></tr><tr><td>99.00</td><td>-2.1</td><td>50.00</td><td>105.63</td><td>105.63</td><td>244.12</td><td></td></tr><tr><td>99.00</td><td>-2.1</td><td>50.00</td><td>105.63</td><td>105.63</td><td>244.12</td><td></td></tr><tr><td>98.99</td><td>-2.1</td><td>50.00</td><td>105.76</td><td>105.76</td><td>244.78</td><td></td></tr><tr><td>98.99</td><td>-2.1</td><td>50.00</td><td>105.76</td><td>105.76</td><td>244.78</td><td></td></tr><tr><td>98.94</td><td>-2.1</td><td>50.00</td><td>106.41</td><td>106.41</td><td>248.05</td><td></td></tr><tr><td>98.61</td><td>-2.2</td><td>50.00</td><td>111.01</td><td>111.01</td><td>270.94</td><td></td></tr><tr><td>98.56</td><td>-2.2</td><td>50.00</td><td>111.67</td><td>111.67</td><td>274.21</td><td></td></tr><tr><td>98.56</td><td>-2.2</td><td>50.00</td><td>111.67</td><td>111.67</td><td>274.21</td><td></td></tr><tr><td>98.51</td><td>-2.2</td><td>50.00</td><td>112.33</td><td>112.33</td><td>277.47</td><td></td></tr><tr><td>98.42</td><td>-2.3</td><td>50.00</td><td>113.65</td><td>113.65</td><td>284.00</td><td></td></tr><tr><td>98.37</td><td>-2.3</td><td>50.00</td><td>114.31</td><td>114.31</td><td>287.26</td><td></td></tr><tr><td>98.37</td><td>-2.3</td><td>50.00</td><td>114.31</td><td>114.31</td><td>287.26</td><td></td></tr><tr><td>98.33</td><td>-2.3</td><td>50.00</td><td>114.97</td><td>114.97</td><td>290.53</td><td></td></tr></table>							103.00	-1.6	-	-	-			102.60	-1.6	-	-	-			102.55	-1.6	0.00	0.00	0.00			102.55	-1.6	0.00	0.00	0.00	11.73		102.48	-1.6	0.00	0.00	0.00	13.54		102.48	-1.6	2.30	3.57	3.57	3.57		102.43	-1.6	2.30	3.57	3.57	7.02		102.13	-1.6	17.73	27.65	27.65	27.67		102.08	-1.6	17.73	27.67	27.67	31.11		102.08	-1.6	19.91	31.08	31.08	31.11		102.03	-1.6	19.91	31.12	31.12	34.56		101.93	-1.6	26.42	41.39	41.39	41.44		101.88	-1.6	26.42	41.45	41.45	44.89		101.88	-1.6	28.58	44.84	44.84	44.89		101.85	-1.6	28.58	44.89	44.89	47.09		101.85	-1.6	29.93	47.01	47.01	47.09		101.80	-1.6	29.93	47.09	47.09	50.57		101.80	-1.6	32.08	50.48	50.48	50.57		101.75	-1.6	32.08	50.57	50.57	54.05		101.25	-1.6	50.00	81.07	81.07	88.87		101.19	-1.6	50.00	81.38	81.38	92.35		101.19	-1.6	50.00	81.38	81.38	92.35		101.14	-1.6	50.00	81.70	81.70	95.83		101.14	-1.6	50.00	81.70	81.70	95.83		101.09	-1.6	50.00	82.03	82.03	99.31		101.09	-1.6	50.00	82.03	82.03	99.31		101.04	-1.6	50.00	82.38	82.38	102.79		100.74	-1.7	50.00	84.77	84.77	123.68		100.69	-1.7	50.00	85.22	85.22	127.17		100.69	-1.7	50.00	85.22	85.22	127.17		100.69	-1.7	50.00	85.22	85.22	127.20		100.69	-1.7	50.00	85.22	85.22	127.20		100.64	-1.7	50.00	85.65	85.65	130.46		100.31	-1.8	50.00	88.97	88.97	153.30		100.26	-1.8	50.00	89.49	89.49	156.56		100.26	-1.8	50.00	89.49	89.49	156.56		100.22	-1.8	50.00	90.01	90.01	159.83		100.12	-1.8	50.00	91.08	91.08	166.37		100.08	-1.8	50.00	91.63	91.63	169.64		100.08	-1.8	50.00	91.63	91.63	169.64		100.03	-1.8	50.00	92.19	92.19	172.91		100.03	-1.8	50.00	92.19	92.19	172.91		99.98	-1.9	50.00	92.75	92.75	176.18		99.98	-1.9	50.00	92.75	92.75	176.18		99.93	-1.9	50.00	93.32	93.32	179.45		99.89	-1.9	50.00	93.90	93.90	182.72		99.84	-1.9	50.00	94.49	94.49	185.99		99.84	-1.9	50.00	94.49	94.49	185.99		99.79	-1.9	50.00	95.08	95.08	189.26		99.46	-2.0	50.00	99.35	99.35	212.12		99.41	-2.0	50.00	99.98	99.98	215.39		99.41	-2.0	50.00	99.98	99.98	215.39		99.36	-2.0	50.00	100.66	100.66	218.88		99.16	-2.1	50.00	103.39	103.39	232.84		99.11	-2.1	50.00	104.08	104.08	236.33		99.11	-2.1	50.00	104.08	104.08	236.33		99.05	-2.1	50.00	104.85	104.85	240.22		99.05	-2.1	50.00	104.85	104.85	240.22		99.00	-2.1	50.00	105.63	105.63	244.12		99.00	-2.1	50.00	105.63	105.63	244.12		98.99	-2.1	50.00	105.76	105.76	244.78		98.99	-2.1	50.00	105.76	105.76	244.78		98.94	-2.1	50.00	106.41	106.41	248.05		98.61	-2.2	50.00	111.01	111.01	270.94		98.56	-2.2	50.00	111.67	111.67	274.21		98.56	-2.2	50.00	111.67	111.67	274.21		98.51	-2.2	50.00	112.33	112.33	277.47		98.42	-2.3	50.00	113.65	113.65	284.00		98.37	-2.3	50.00	114.31	114.31	287.26		98.37	-2.3	50.00	114.31	114.31	287.26		98.33	-2.3	50.00	114.97	114.97	290.53	
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101.04	-1.6	50.00	82.38	82.38	102.79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.74	-1.7	50.00	84.77	84.77	123.68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.69	-1.7	50.00	85.22	85.22	127.17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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100.64	-1.7	50.00	85.65	85.65	130.46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.31	-1.8	50.00	88.97	88.97	153.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.26	-1.8	50.00	89.49	89.49	156.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.26	-1.8	50.00	89.49	89.49	156.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.22	-1.8	50.00	90.01	90.01	159.83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.12	-1.8	50.00	91.08	91.08	166.37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
100.08	-1.8	50.00	91.63	91.63	169.64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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100.03	-1.8	50.00	92.19	92.19	172.91																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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99.98	-1.9	50.00	92.75	92.75	176.18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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99.93	-1.9	50.00	93.32	93.32	179.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.89	-1.9	50.00	93.90	93.90	182.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.84	-1.9	50.00	94.49	94.49	185.99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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99.79	-1.9	50.00	95.08	95.08	189.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.46	-2.0	50.00	99.35	99.35	212.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.41	-2.0	50.00	99.98	99.98	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.41	-2.0	50.00	99.98	99.98	215.39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.36	-2.0	50.00	100.66	100.66	218.88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.16	-2.1	50.00	103.39	103.39	232.84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.11	-2.1	50.00	104.08	104.08	236.33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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99.05	-2.1	50.00	104.85	104.85	240.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.05	-2.1	50.00	104.85	104.85	240.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.00	-2.1	50.00	105.63	105.63	244.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
99.00	-2.1	50.00	105.63	105.63	244.12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.99	-2.1	50.00	105.76	105.76	244.78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.99	-2.1	50.00	105.76	105.76	244.78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.94	-2.1	50.00	106.41	106.41	248.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.61	-2.2	50.00	111.01	111.01	270.94																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.56	-2.2	50.00	111.67	111.67	274.21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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98.51	-2.2	50.00	112.33	112.33	277.47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.42	-2.3	50.00	113.65	113.65	284.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.37	-2.3	50.00	114.31	114.31	287.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.37	-2.3	50.00	114.31	114.31	287.26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
98.33	-2.3	50.00	114.97	114.97	290.53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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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>98.18-2.350.00116.95300.34</div><div>98.14-2.450.00117.61303.61</div><div>98.14-2.450.00117.61303.61</div><div>98.09-2.450.00118.22306.61</div><div>98.09-2.450.00118.22306.61</div><div>98.05-2.450.00118.83309.62</div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°]</div><div>phi,[g+q],k: 0.01599008</div><div>Theoretischer Fußpunkt = 98.049 m</div><div>Einbindetiefe tg = 4.50 m</div><div>Profillänge = 8.05 m</div><div>Nachweis Summe V</div><div>Nachweis des mobilisierten Erdwiderstands</div><div>Bedingung: Pv,k + G',k - G',k + Eav,k &gt;= Bv,k</div><div>G,k = 152.33 kN/m</div><div>G',k = 0.00 kN/m</div><div>Pv,k = 0.00 kN/m</div><div>Eav,k = 69.26 kN/m (Eah,k = 363.41 kN/m)</div><div>Bv,k = 146.10</div><div>Summe V,k = 75.49 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) ==&gt; 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><thead><tr><th>von</th><th>bis</th><th>qs,k [kN/m²]</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: Flusskies, -sand (über GS)</td></tr><tr><td>101.85</td><td>98.05</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></tbody></table></div><div>Mantelfläche bis 98.05 m = 1.000 m²/m/m ==&gt; R,s1,d</div><div>R,s1,d = eta(s) · R,s1,k / gamma(qs,k) = 1.000 · 243.65 / 1.40 = 174.04 kN/m</div><div>R,d = Rb,d + R,s1,d = 1039.08 kN/m</div><div>Einwirkungen</div><div>V,d = G,d - G',k + Eav,d + Pv,d = 182.80 - 0.00 + 79.65 + 0.00 = 262.44 kN/m</div><div>==&gt; µ = V,d / R,d = 262.44 / 1039.08 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>			von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.48	0.00	S2: Auelehm (über GS)	102.48	101.85	55.00	s3: Flusskies, -sand (über GS)	101.85	98.05	55.00	s3: Flusskies, -sand
von	bis	qs,k [kN/m²]	Bezeichnung															
102.55	102.48	0.00	S2: Auelehm (über GS)															
102.48	101.85	55.00	s3: Flusskies, -sand (über GS)															
101.85	98.05	55.00	s3: Flusskies, -sand															
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/28																
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 8 Datei: 04_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<sub>g,k</sub></th><th>M<sub>q,k</sub></th><th>H<sub>g,k</sub></th><th>H<sub>q,k</sub></th><th>V<sub>g,k</sub></th><th>V<sub>q,k</sub></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 = 6.75 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 <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>	[-]	[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
Nr.	sig(v)	x(Luftseite)	x(Erdseite)	Tiefe	y(1)	y(2)	y(3)	y(4)	Verkehrslast																																																																																																																																													
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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  $\mu_e = 189.344 / 215.247 = 0.880$   
 Bettungslager  $B_{h,d} = 189.344 \text{ kN/m}$   
 Erdwiderstand  $E_{ph,d} = 215.247 \text{ kN/m}$

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	-90.31	-76.76	-76.76	-44.92	3.900E+7	2.100E+7	-97.87

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	-1.7	0.0	-90.52	0.00	0.00
-7.47	103.72	-1.7	0.0	-90.52	0.00	0.00
-7.47	103.72	-1.7	0.0	-90.52	0.00	0.00
-6.64	103.72	-1.7	0.0	-90.52	0.00	0.00
-5.81	103.72	-1.7	0.0	-90.52	0.00	0.00
-4.98	103.72	-1.7	0.0	-90.52	0.00	0.00
-4.15	103.72	-1.7	0.0	-90.52	0.00	0.00
-3.32	103.72	-1.7	0.0	-90.52	0.00	0.00
-2.49	103.72	-1.7	0.0	-90.52	0.00	0.00
-1.66	103.72	-1.7	0.0	-90.52	0.00	0.00
-0.83	103.72	-1.7	0.0	-90.52	0.00	0.00
0.00	103.72	-1.7	0.0	-90.52	0.00	0.00

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

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0015

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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 Q1	Schnitt 8L	Seite Anlage Q1/30
Kapitel:	5	LF 3 (BS-T, mit Lasten)	Archiv Nr.:
Vorgang:	Genehmigungsstatik		Projekt-Nr.: 2004-0025

statisch geprüft  
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 Standsicherheit  
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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>101.094</td><td>16.092</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>99.349</td><td>112.926</td><td>116.376</td><td>0.00</td><td>0.00</td></tr><tr><td>99.349</td><td>99.110</td><td>116.376</td><td>129.155</td><td>0.00</td><td>0.00</td></tr><tr><td>99.110</td><td>98.997</td><td>129.155</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>97.950</td><td>122.623</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><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>101.09</td><td>-31.12</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	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	101.094	16.092	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	99.349	112.926	116.376	0.00	0.00	99.349	99.110	116.376	129.155	0.00	0.00	99.110	98.997	129.155	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	97.950	122.623	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	101.88	101.85	-27.62	-28.98	101.85	101.80	-28.98	-31.12	101.80	101.09	-31.12	-61.11	Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/31	
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101.800	101.094	16.092	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	99.349	112.926	116.376	0.00	0.00																																																																																																																																																																																																																																																																																																																																																			
99.349	99.110	116.376	129.155	0.00	0.00																																																																																																																																																																																																																																																																																																																																																			
99.110	98.997	129.155	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	97.950	122.623	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																																																																																																																																																																																																																																																																																																																																																			
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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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Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																																																																																																	
<table><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>99.35</td><td>-132.54</td><td>-135.28</td></tr><tr><td>99.35</td><td>99.11</td><td>-135.28</td><td>-145.43</td></tr><tr><td>99.11</td><td>99.00</td><td>-145.43</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>97.95</td><td>-186.83</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></table> <p>Schnittgrößen (Bemessungswerte)</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>-0.1</td><td>0.0</td><td>0.0</td><td></td><td></td></tr><tr><td>105.50</td><td>-14.6</td><td>-4.2</td><td>-1.1</td><td></td><td></td></tr><tr><td>105.50</td><td>-38.0</td><td>-4.2</td><td>-16.1</td><td></td><td></td></tr><tr><td>105.35</td><td>-41.8</td><td>-5.8</td><td>-16.9</td><td></td><td></td></tr><tr><td>105.10</td><td>-48.0</td><td>-9.6</td><td>-18.8</td><td></td><td></td></tr><tr><td>104.10</td><td>-73.8</td><td>-35.4</td><td>-39.9</td><td></td><td></td></tr><tr><td>103.72</td><td>-83.9</td><td>-49.6</td><td>-55.9</td><td>-90.5</td><td></td></tr><tr><td>103.72</td><td>-83.9</td><td>40.9</td><td>-55.9</td><td></td><td></td></tr><tr><td>103.23</td><td>-97.3</td><td>19.1</td><td>-41.1</td><td></td><td></td></tr><tr><td>103.05</td><td>-102.2</td><td>10.0</td><td>-38.5</td><td></td><td></td></tr><tr><td>102.55</td><td>-116.1</td><td>-17.1</td><td>-40.1</td><td></td><td></td></tr><tr><td>102.48</td><td>-117.6</td><td>-18.7</td><td>-41.4</td><td></td><td></td></tr><tr><td>102.08</td><td>-123.5</td><td>-18.5</td><td>-49.2</td><td></td><td></td></tr><tr><td>101.88</td><td>-124.5</td><td>-13.8</td><td>-52.5</td><td></td><td></td></tr><tr><td>101.85</td><td>-124.6</td><td>-12.7</td><td>-52.9</td><td></td><td></td></tr><tr><td>101.80</td><td>-124.6</td><td>-10.9</td><td>-53.5</td><td></td><td></td></tr><tr><td>101.09</td><td>-120.8</td><td>23.0</td><td>-49.4</td><td></td><td></td></tr><tr><td>100.69</td><td>-118.4</td><td>41.6</td><td>-36.4</td><td></td><td></td></tr><tr><td>100.26</td><td>-116.0</td><td>36.1</td><td>-19.6</td><td></td><td></td></tr><tr><td>100.08</td><td>-114.9</td><td>31.8</td><td>-13.2</td><td></td><td></td></tr><tr><td>99.84</td><td>-113.5</td><td>24.3</td><td>-6.5</td><td></td><td></td></tr><tr><td>99.41</td><td>-110.8</td><td>3.9</td><td>-0.1</td><td></td><td></td></tr><tr><td>99.35</td><td>-110.4</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>106.10</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>-76.8</td><td></td></tr><tr><td>103.72</td><td>-72.1</td><td>34.3</td><td>-47.7</td><td></td><td></td></tr><tr><td>103.23</td><td>-83.7</td><td>15.7</td><td>-35.3</td><td></td><td></td></tr><tr><td>103.05</td><td>-88.1</td><td>8.1</td><td>-33.1</td><td></td><td></td></tr><tr><td>102.55</td><td>-100.1</td><td>-15.0</td><td>-34.8</td><td></td><td></td></tr><tr><td>102.48</td><td>-101.6</td><td>-16.3</td><td>-35.9</td><td></td><td></td></tr><tr><td>102.08</td><td>-106.7</td><td>-16.2</td><td>-42.7</td><td></td><td></td></tr></table>						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	99.35	-132.54	-135.28	99.35	99.11	-135.28	-145.43	99.11	99.00	-145.43	-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	97.95	-186.83	-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	-14.6	-4.2	-1.1			105.50	-38.0	-4.2	-16.1			105.35	-41.8	-5.8	-16.9			105.10	-48.0	-9.6	-18.8			104.10	-73.8	-35.4	-39.9			103.72	-83.9	-49.6	-55.9	-90.5		103.72	-83.9	40.9	-55.9			103.23	-97.3	19.1	-41.1			103.05	-102.2	10.0	-38.5			102.55	-116.1	-17.1	-40.1			102.48	-117.6	-18.7	-41.4			102.08	-123.5	-18.5	-49.2			101.88	-124.5	-13.8	-52.5			101.85	-124.6	-12.7	-52.9			101.80	-124.6	-10.9	-53.5			101.09	-120.8	23.0	-49.4			100.69	-118.4	41.6	-36.4			100.26	-116.0	36.1	-19.6			100.08	-114.9	31.8	-13.2			99.84	-113.5	24.3	-6.5			99.41	-110.8	3.9	-0.1			99.35	-110.4	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			106.10	0.0	0.0	0.0			105.50	-12.7	-3.7	-1.0			105.50	-32.2	-3.7	-13.5			105.35	-35.5	-5.1	-14.1			105.10	-40.9	-8.3	-15.8			104.10	-63.3	-30.3	-33.9			103.72	-72.1	-42.4	-47.7	-76.8		103.72	-72.1	34.3	-47.7			103.23	-83.7	15.7	-35.3			103.05	-88.1	8.1	-33.1			102.55	-100.1	-15.0	-34.8			102.48	-101.6	-16.3	-35.9			102.08	-106.7	-16.2	-42.7		
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97.95	97.64	-194.73	-208.07																																																																																																																																																																																																																																																																																																																																																																		
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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																																																																																																																																																																																																																																																																																																																																																																		
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Statisch geprüft für Standsicherheit

Dipl.-Ing. A. Forner



[illegible]

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>106.10</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.10</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.05</td><td>-2.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.40</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.35</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.15</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.10</td><td>-1.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-1.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.10</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.05</td><td>-1.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.77</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.72</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.66</td><td>-1.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.28</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.23</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.19</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.10</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.05</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.05</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.00</td><td>-1.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-1.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-1.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-1.3</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.48</td><td>-1.3</td><td>0.00</td><td>0.00</td><td>13.54</td></tr><tr><td>102.48</td><td>-1.3</td><td>2.72</td><td>3.57</td><td>3.57</td></tr><tr><td>102.43</td><td>-1.3</td><td>2.72</td><td>3.56</td><td>7.02</td></tr><tr><td>102.13</td><td>-1.3</td><td>21.75</td><td>27.67</td><td>27.67</td></tr><tr><td>102.08</td><td>-1.3</td><td>21.75</td><td>27.56</td><td>31.11</td></tr><tr><td>102.08</td><td>-1.3</td><td>24.55</td><td>31.12</td><td>31.11</td></tr><tr><td>102.03</td><td>-1.3</td><td>24.55</td><td>30.99</td><td>34.56</td></tr><tr><td>101.93</td><td>-1.3</td><td>33.07</td><td>41.44</td><td>41.44</td></tr><tr><td>101.88</td><td>-1.2</td><td>33.07</td><td>41.30</td><td>44.89</td></tr><tr><td>101.88</td><td>-1.2</td><td>35.95</td><td>44.89</td><td>44.89</td></tr><tr><td>101.85</td><td>-1.2</td><td>35.95</td><td>44.79</td><td>47.09</td></tr><tr><td>101.85</td><td>-1.2</td><td>37.79</td><td>47.09</td><td>47.09</td></tr><tr><td>101.80</td><td>-1.2</td><td>37.79</td><td>46.93</td><td>50.57</td></tr><tr><td>101.80</td><td>-1.2</td><td>40.72</td><td>50.57</td><td>50.57</td></tr><tr><td>101.75</td><td>-1.2</td><td>40.72</td><td>50.41</td><td>54.05</td></tr><tr><td>101.14</td><td>-1.2</td><td>50.00</td><td>60.34</td><td>95.83</td></tr><tr><td>101.09</td><td>-1.2</td><td>50.00</td><td>60.27</td><td>99.31</td></tr><tr><td>101.09</td><td>-1.2</td><td>50.00</td><td>60.27</td><td>99.31</td></tr><tr><td>101.04</td><td>-1.2</td><td>50.00</td><td>60.22</td><td>102.79</td></tr><tr><td>100.74</td><td>-1.2</td><td>50.00</td><td>60.06</td><td>123.68</td></tr><tr><td>100.69</td><td>-1.2</td><td>50.00</td><td>60.06</td><td>127.17</td></tr><tr><td>100.69</td><td>-1.2</td><td>50.00</td><td>60.06</td><td>127.17</td></tr><tr><td>100.69</td><td>-1.2</td><td>50.00</td><td>60.06</td><td>127.20</td></tr><tr><td>100.69</td><td>-1.2</td><td>50.00</td><td>60.06</td><td>127.20</td></tr><tr><td>100.64</td><td>-1.2</td><td>50.00</td><td>60.07</td><td>130.46</td></tr><tr><td>100.31</td><td>-1.2</td><td>50.00</td><td>60.26</td><td>153.30</td></tr><tr><td>100.26</td><td>-1.2</td><td>50.00</td><td>60.30</td><td>156.56</td></tr><tr><td>100.26</td><td>-1.2</td><td>50.00</td><td>60.30</td><td>156.56</td></tr><tr><td>100.22</td><td>-1.2</td><td>50.00</td><td>60.35</td><td>159.83</td></tr><tr><td>100.12</td><td>-1.2</td><td>50.00</td><td>60.46</td><td>166.37</td></tr><tr><td>100.08</td><td>-1.2</td><td>50.00</td><td>60.51</td><td>169.64</td></tr><tr><td>100.08</td><td>-1.2</td><td>50.00</td><td>60.51</td><td>169.64</td></tr></tbody></table>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.10	-2.1	-	-	-	106.10	-2.1	-	-	-	106.10	-2.1	-	-	-	106.05	-2.1	-	-	-	105.55	-2.0	-	-	-	105.50	-2.0	-	-	-	105.50	-2.0	-	-	-	105.45	-1.9	-	-	-	105.40	-1.9	-	-	-	105.35	-1.9	-	-	-	105.35	-1.9	-	-	-	105.30	-1.9	-	-	-	105.15	-1.9	-	-	-	105.10	-1.9	-	-	-	105.10	-1.9	-	-	-	105.05	-1.8	-	-	-	104.15	-1.6	-	-	-	104.10	-1.6	-	-	-	104.10	-1.6	-	-	-	104.05	-1.6	-	-	-	103.77	-1.5	-	-	-	103.72	-1.5	-	-	-	103.72	-1.5	-	-	-	103.66	-1.5	-	-	-	103.28	-1.4	-	-	-	103.23	-1.4	-	-	-	103.23	-1.4	-	-	-	103.19	-1.4	-	-	-	103.10	-1.4	-	-	-	103.05	-1.4	-	-	-	103.05	-1.4	-	-	-	103.00	-1.4	-	-	-	102.60	-1.3	-	-	-	102.55	-1.3	0.00	0.00	0.00	102.55	-1.3	0.00	0.00	11.73	102.48	-1.3	0.00	0.00	13.54	102.48	-1.3	2.72	3.57	3.57	102.43	-1.3	2.72	3.56	7.02	102.13	-1.3	21.75	27.67	27.67	102.08	-1.3	21.75	27.56	31.11	102.08	-1.3	24.55	31.12	31.11	102.03	-1.3	24.55	30.99	34.56	101.93	-1.3	33.07	41.44	41.44	101.88	-1.2	33.07	41.30	44.89	101.88	-1.2	35.95	44.89	44.89	101.85	-1.2	35.95	44.79	47.09	101.85	-1.2	37.79	47.09	47.09	101.80	-1.2	37.79	46.93	50.57	101.80	-1.2	40.72	50.57	50.57	101.75	-1.2	40.72	50.41	54.05	101.14	-1.2	50.00	60.34	95.83	101.09	-1.2	50.00	60.27	99.31	101.09	-1.2	50.00	60.27	99.31	101.04	-1.2	50.00	60.22	102.79	100.74	-1.2	50.00	60.06	123.68	100.69	-1.2	50.00	60.06	127.17	100.69	-1.2	50.00	60.06	127.17	100.69	-1.2	50.00	60.06	127.20	100.69	-1.2	50.00	60.06	127.20	100.64	-1.2	50.00	60.07	130.46	100.31	-1.2	50.00	60.26	153.30	100.26	-1.2	50.00	60.30	156.56	100.26	-1.2	50.00	60.30	156.56	100.22	-1.2	50.00	60.35	159.83	100.12	-1.2	50.00	60.46	166.37	100.08	-1.2	50.00	60.51	169.64	100.08	-1.2	50.00	60.51	169.64
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102.55	-1.3	0.00	0.00	0.00																																																																																																																																																																																																																																																																																																																																																							
102.55	-1.3	0.00	0.00	11.73																																																																																																																																																																																																																																																																																																																																																							
102.48	-1.3	0.00	0.00	13.54																																																																																																																																																																																																																																																																																																																																																							
102.48	-1.3	2.72	3.57	3.57																																																																																																																																																																																																																																																																																																																																																							
102.43	-1.3	2.72	3.56	7.02																																																																																																																																																																																																																																																																																																																																																							
102.13	-1.3	21.75	27.67	27.67																																																																																																																																																																																																																																																																																																																																																							
102.08	-1.3	21.75	27.56	31.11																																																																																																																																																																																																																																																																																																																																																							
102.08	-1.3	24.55	31.12	31.11																																																																																																																																																																																																																																																																																																																																																							
102.03	-1.3	24.55	30.99	34.56																																																																																																																																																																																																																																																																																																																																																							
101.93	-1.3	33.07	41.44	41.44																																																																																																																																																																																																																																																																																																																																																							
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101.80	-1.2	37.79	46.93	50.57																																																																																																																																																																																																																																																																																																																																																							
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100.74	-1.2	50.00	60.06	123.68																																																																																																																																																																																																																																																																																																																																																							
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100.31	-1.2	50.00	60.26	153.30																																																																																																																																																																																																																																																																																																																																																							
100.26	-1.2	50.00	60.30	156.56																																																																																																																																																																																																																																																																																																																																																							
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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																																																													
<table><tr><td>100.03</td><td>-1.2</td><td>50.00</td><td>60.57</td><td>172.91</td></tr><tr><td>99.89</td><td>-1.2</td><td>50.00</td><td>60.75</td><td>182.72</td></tr><tr><td>99.84</td><td>-1.2</td><td>50.00</td><td>60.82</td><td>185.99</td></tr><tr><td>99.84</td><td>-1.2</td><td>50.00</td><td>60.82</td><td>185.99</td></tr><tr><td>99.79</td><td>-1.2</td><td>50.00</td><td>60.88</td><td>189.26</td></tr><tr><td>99.46</td><td>-1.2</td><td>50.00</td><td>61.35</td><td>212.12</td></tr><tr><td>99.41</td><td>-1.2</td><td>50.00</td><td>61.42</td><td>215.39</td></tr><tr><td>99.41</td><td>-1.2</td><td>50.00</td><td>61.42</td><td>215.39</td></tr><tr><td>99.35</td><td>-1.2</td><td>50.00</td><td>61.51</td><td>219.84</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00165543 Theoretischer Fußpunkt = 99.349 m</p> <p>Einbindetiefe tg = 3.20 m Profillänge = 6.75 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{v,k} = 127.73 \text{ kN/m}</math> <math>G'_{v,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 19.50 \text{ kN/m}</math> <math>E_{av,k} = 36.37 \text{ kN/m}</math> (<math>E_{ah,k} = 197.95 \text{ kN/m}</math>) <math>B_{v,k} = 65.47</math> Summe <math>V_{v,k} = 118.13 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.23 bis 96.71 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></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>99.35</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.35 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 172.15 / 1.40 = 122.96 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 988.01 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{v,k} + E_{av,d} + P_{v,d} = 153.28 - 0.00 + 41.83 + 23.40 = 218.51 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{d} / R_{d} = 218.51 / 988.01 = 0.22</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			100.03	-1.2	50.00	60.57	172.91	99.89	-1.2	50.00	60.75	182.72	99.84	-1.2	50.00	60.82	185.99	99.84	-1.2	50.00	60.82	185.99	99.79	-1.2	50.00	60.88	189.26	99.46	-1.2	50.00	61.35	212.12	99.41	-1.2	50.00	61.42	215.39	99.41	-1.2	50.00	61.42	215.39	99.35	-1.2	50.00	61.51	219.84	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	99.35	55.00	s3: Flussskies, -sand
100.03	-1.2	50.00	60.57	172.91																																																											
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102.48	101.85	55.00	s3: Flussskies, -sand (über GS)																																																												
101.85	99.35	55.00	s3: Flussskies, -sand																																																												
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/35																																																													
Kapitel: 5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 218.51/988.01																																																													
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>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: 05_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> <tr><td colspan="2">Schnitt: Anlage Q1 Schnitt 8L</td><td>Seite Anlage Q1/36</td></tr> <tr><td colspan="2">Kapitel: 6 LF 4 (BS-P, mit Lasten)</td><td>Archiv Nr.:</td></tr> <tr><td colspan="2">Vorgang: Genehmigungsstatik</td><td>Projekt-Nr.: 2004-0025</td></tr>			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	Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/36	Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.:	Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025
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]	[-]																																																																																																																																													
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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																																																																																																																																													
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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																																																																																																																																																	
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/36																																																																																																																																																				
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 Elsternmühlgrabens - TBA 3.2	Bauwerksnummer (ASB):
Auftraggeber:	Stadtverwaltung Leipzig	-
Verfasser:	INROS LACKNER SE, Niederlassung Cottbus	Datum:   21.06.2024
<div>Kraftränder Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) 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 [-] [mNHN] [kN·m/m] [kN·m/m] [kN/m] [kN/m] [kN/m] [kN/m]</div> <div>1 105.50 -12.50 0.00 0.00 0.00 19.50 0.00</div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 6.75 m</div> <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</div> <div>Ausnutzungsgrad mue = 218.147 / 235.334 = 0.927 Bettungslager Bh,d = 218.147 kN/m Erdwiderstand Eph,d = 235.334 kN/m</div> <div>Anker und Steifen Nd' = Bemessungswert (Steifen) mit BS-P (1.275/1.50) Nw,k kann Anteil aus Einzelkräften beinhalten.</div> <div>Nr. Neigung Länge Nd N(g+q+w),k N(g+w),k Nw,k EA EI Nd' [-] [mNHN] [°] [m] [kN/m] [kN/m] [kN/m] [kN/m] [kN/m²] [kN/m²] [kN/m]</div> <div>1 103.72 0.00 8.30 -92.66 -70.29 -70.29 -44.96 3.900E+7 2.100E+7 -89.62 Steife</div> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max Md [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <div>x y wx,d wy,d Nd Qd Md [m] [m] [mm] [mm] [kN/m] [kN/m] [kN·m/m]</div> <div>-8.30 103.72 -1.9 0.0 -92.99 0.00 0.00 -7.47 103.72 -1.9 0.0 -92.99 0.00 0.00 -7.47 103.72 -1.9 0.0 -92.99 0.00 0.00 -6.64 103.72 -1.9 0.0 -92.99 0.00 0.00 -5.81 103.72 -1.9 0.0 -92.99 0.00 0.00 -4.98 103.72 -1.9 0.0 -92.99 0.00 0.00 -4.15 103.72 -1.9 0.0 -92.99 0.00 0.00 -3.32 103.72 -1.9 0.0 -92.99 0.00 0.00 -2.49 103.72 -1.9 0.0 -92.99 0.00 0.00 -1.66 103.72 -1.9 0.0 -92.99 0.00 0.00 -0.83 103.72 -1.9 0.0 -92.99 0.00 0.00 0.00 103.72 -1.9 0.0 -92.99 0.00 0.00</div> <div>Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden von "Hand" eingegeben. Anker/Steife Tiefe Vorverformung [-] [m] [m] 1 103.72 -0.0015</div> <div>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]</div> <div>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</div>		
Schnitt:	Anlage Q1 Schnitt 8L	Seite Anlage Q1/37
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		-																																																																																																																																																																																																																																																																																																																								
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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 &lt;&gt; 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>105.35</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></table></div> <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>106.097</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>101.699</td><td>15.886</td><td>16.506</td><td>0.00</td><td>0.00</td></tr><tr><td>101.699</td><td>101.094</td><td>16.506</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>99.349</td><td>112.926</td><td>116.376</td><td>0.00</td><td>0.00</td></tr><tr><td>99.349</td><td>99.110</td><td>116.376</td><td>129.155</td><td>0.00</td><td>0.00</td></tr><tr><td>99.110</td><td>98.997</td><td>129.155</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>97.950</td><td>122.623</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></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></div>			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	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	101.699	15.886	16.506	0.00	0.00	101.699	101.094	16.506	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	99.349	112.926	116.376	0.00	0.00	99.349	99.110	116.376	129.155	0.00	0.00	99.110	98.997	129.155	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	97.950	122.623	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	kagh	kach	phi,k	delta	theta	kagh(40°)																																																																																																																																																																																																																																																																																																																			
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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	99.349	112.926	116.376	0.00	0.00																																																																																																																																																																																																																																																																																																																					
99.349	99.110	116.376	129.155	0.00	0.00																																																																																																																																																																																																																																																																																																																					
99.110	98.997	129.155	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	97.950	122.623	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																																																																																																																																																																																																																																																																																																																							
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/38																																																																																																																																																																																																																																																																																																																								
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):																																																																																																																																																																																																																																																																																																			
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>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> <div>Passive Erddruckordinaten (Bemessungswerte) Teilsicherheit Erdwiderstand = 1.40 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>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>102.08</td><td>-13.37</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>101.70</td><td>-38.23</td><td>-44.20</td></tr><tr><td>101.70</td><td>101.09</td><td>-44.20</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>99.35</td><td>-134.40</td><td>-136.95</td></tr><tr><td>99.35</td><td>99.11</td><td>-136.95</td><td>-146.37</td></tr><tr><td>99.11</td><td>99.00</td><td>-146.37</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>97.95</td><td>-184.81</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></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>106.10</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>-93.0</td></tr><tr><td>103.72</td><td>-93.4</td><td>37.7</td><td>-62.4</td><td></td></tr><tr><td>103.23</td><td>-108.2</td><td>13.3</td><td>-49.8</td><td></td></tr><tr><td>103.05</td><td>-113.7</td><td>3.1</td><td>-48.3</td><td></td></tr><tr><td>102.55</td><td>-129.1</td><td>-27.2</td><td>-54.2</td><td></td></tr><tr><td>102.48</td><td>-130.5</td><td>-28.9</td><td>-56.2</td><td></td></tr><tr><td>102.08</td><td>-133.4</td><td>-19.8</td><td>-66.5</td><td></td></tr><tr><td>101.88</td><td>-132.6</td><td>-9.6</td><td>-69.5</td><td></td></tr><tr><td>101.85</td><td>-132.4</td><td>-7.8</td><td>-69.8</td><td></td></tr><tr><td>101.70</td><td>-131.5</td><td>0.6</td><td>-70.3</td><td></td></tr><tr><td>101.09</td><td>-128.2</td><td>31.8</td><td>-60.3</td><td></td></tr><tr><td>100.69</td><td>-126.2</td><td>51.1</td><td>-43.6</td><td></td></tr><tr><td>100.26</td><td>-124.1</td><td>43.4</td><td>-23.3</td><td></td></tr><tr><td>100.08</td><td>-123.1</td><td>38.0</td><td>-15.6</td><td></td></tr><tr><td>99.84</td><td>-121.9</td><td>28.8</td><td>-7.6</td><td></td></tr></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	102.08	-13.37	-29.10	102.08	101.88	-29.10	-36.97	101.88	101.85	-36.97	-38.23	101.85	101.70	-38.23	-44.20	101.70	101.09	-44.20	-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	99.35	-134.40	-136.95	99.35	99.11	-136.95	-146.37	99.11	99.00	-146.37	-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	97.95	-184.81	-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	-93.0	103.72	-93.4	37.7	-62.4		103.23	-108.2	13.3	-49.8		103.05	-113.7	3.1	-48.3		102.55	-129.1	-27.2	-54.2		102.48	-130.5	-28.9	-56.2		102.08	-133.4	-19.8	-66.5		101.88	-132.6	-9.6	-69.5		101.85	-132.4	-7.8	-69.8		101.70	-131.5	0.6	-70.3		101.09	-128.2	31.8	-60.3		100.69	-126.2	51.1	-43.6		100.26	-124.1	43.4	-23.3		100.08	-123.1	38.0	-15.6		99.84	-121.9	28.8	-7.6	
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	102.08	-13.37	-29.10																																																																																																																																																																																																																																																																																																		
102.08	101.88	-29.10	-36.97																																																																																																																																																																																																																																																																																																		
101.88	101.85	-36.97	-38.23																																																																																																																																																																																																																																																																																																		
101.85	101.70	-38.23	-44.20																																																																																																																																																																																																																																																																																																		
101.70	101.09	-44.20	-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	99.35	-134.40	-136.95																																																																																																																																																																																																																																																																																																		
99.35	99.11	-136.95	-146.37																																																																																																																																																																																																																																																																																																		
99.11	99.00	-146.37	-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	97.95	-184.81	-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																																																																																																																																																																																																																																																																																																		
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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	-93.0																																																																																																																																																																																																																																																																																																	
103.72	-93.4	37.7	-62.4																																																																																																																																																																																																																																																																																																		
103.23	-108.2	13.3	-49.8																																																																																																																																																																																																																																																																																																		
103.05	-113.7	3.1	-48.3																																																																																																																																																																																																																																																																																																		
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102.48	-130.5	-28.9	-56.2																																																																																																																																																																																																																																																																																																		
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101.70	-131.5	0.6	-70.3																																																																																																																																																																																																																																																																																																		
101.09	-128.2	31.8	-60.3																																																																																																																																																																																																																																																																																																		
100.69	-126.2	51.1	-43.6																																																																																																																																																																																																																																																																																																		
100.26	-124.1	43.4	-23.3																																																																																																																																																																																																																																																																																																		
100.08	-123.1	38.0	-15.6																																																																																																																																																																																																																																																																																																		
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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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([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>106.10</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>105.50</td><td>-12.7</td><td>-3.7</td><td>-1.0</td><td></td></tr><tr><td>105.50</td><td>-32.2</td><td>-3.7</td><td>-13.5</td><td></td></tr><tr><td>105.35</td><td>-35.5</td><td>-5.1</td><td>-14.1</td><td></td></tr><tr><td>105.10</td><td>-40.9</td><td>-8.3</td><td>-15.8</td><td></td></tr><tr><td>104.10</td><td>-63.3</td><td>-30.3</td><td>-33.9</td><td></td></tr><tr><td>103.72</td><td>-72.1</td><td>-42.4</td><td>-47.7</td><td>-70.3</td></tr><tr><td>103.72</td><td>-72.1</td><td>27.9</td><td>-47.7</td><td></td></tr><tr><td>103.23</td><td>-83.7</td><td>9.3</td><td>-38.5</td><td></td></tr><tr><td>103.05</td><td>-88.1</td><td>1.6</td><td>-37.5</td><td></td></tr><tr><td>102.55</td><td>-100.1</td><td>-21.4</td><td>-42.3</td><td></td></tr><tr><td>102.48</td><td>-101.5</td><td>-22.8</td><td>-43.9</td><td></td></tr><tr><td>102.08</td><td>-103.8</td><td>-15.6</td><td>-52.0</td><td></td></tr><tr><td>101.88</td><td>-103.1</td><td>-7.6</td><td>-54.4</td><td></td></tr><tr><td>101.85</td><td>-103.0</td><td>-6.2</td><td>-54.6</td><td></td></tr><tr><td>101.70</td><td>-102.3</td><td>0.4</td><td>-55.0</td><td></td></tr><tr><td>101.09</td><td>-99.7</td><td>24.9</td><td>-47.3</td><td></td></tr><tr><td>100.69</td><td>-98.2</td><td>40.0</td><td>-34.2</td><td></td></tr><tr><td>100.26</td><td>-96.5</td><td>34.0</td><td>-18.3</td><td></td></tr><tr><td>100.08</td><td>-95.8</td><td>29.8</td><td>-12.2</td><td></td></tr><tr><td>99.84</td><td>-94.8</td><td>22.6</td><td>-6.0</td><td></td></tr><tr><td>99.41</td><td>-93.0</td><td>3.6</td><td>-0.1</td><td></td></tr><tr><td>99.35</td><td>-92.7</td><td>0.0</td><td>0.0</td><td></td></tr></table><div><div>Schnittgrößen 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103.05	-88.1	1.6	-37.5																																																																																																																																																																																																																																																																																																																													
102.55	-100.1	-21.4	-42.3																																																																																																																																																																																																																																																																																																																													
102.48	-101.5	-22.8	-43.9																																																																																																																																																																																																																																																																																																																													
102.08	-103.8	-15.6	-52.0																																																																																																																																																																																																																																																																																																																													
101.88	-103.1	-7.6	-54.4																																																																																																																																																																																																																																																																																																																													
101.85	-103.0	-6.2	-54.6																																																																																																																																																																																																																																																																																																																													
101.70	-102.3	0.4	-55.0																																																																																																																																																																																																																																																																																																																													
101.09	-99.7	24.9	-47.3																																																																																																																																																																																																																																																																																																																													
100.69	-98.2	40.0	-34.2																																																																																																																																																																																																																																																																																																																													
100.26	-96.5	34.0	-18.3																																																																																																																																																																																																																																																																																																																													
100.08	-95.8	29.8	-12.2																																																																																																																																																																																																																																																																																																																													
99.84	-94.8	22.6	-6.0																																																																																																																																																																																																																																																																																																																													
99.41	-93.0	3.6	-0.1																																																																																																																																																																																																																																																																																																																													
99.35	-92.7	0.0	0.0																																																																																																																																																																																																																																																																																																																													
Tiefe	N	Q	M	A(h)																																																																																																																																																																																																																																																																																																																												
[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	[kN/m]																																																																																																																																																																																																																																																																																																																												
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103.72	0.0	0.0	0.0	-4.3																																																																																																																																																																																																																																																																																																																												
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103.05	0.0	0.0	0.0																																																																																																																																																																																																																																																																																																																													
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Kapitel: 6 LF 4 (BS-P, 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):	
Auftraggeber:		Stadtverwaltung Leipzig			
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024	
<div><div><div>102.550.00.00.0.0</div><div>102.480.00.00.0.0</div><div>102.080.00.00.0.0</div><div>101.880.00.00.0.0</div><div>101.850.00.00.0.0</div><div>101.700.00.00.0.0</div><div>101.090.00.00.0.0</div><div>100.690.00.00.0.0</div><div>100.260.00.00.0.0</div><div>100.080.00.00.0.0</div><div>99.840.00.00.0.0</div><div>99.410.00.00.0.0</div><div>99.350.00.00.0.0</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>106.10-2.2--</div><div>106.10-2.2--</div><div>106.10-2.2--</div><div>106.05-2.2--</div><div>105.55-2.0--</div><div>105.50-2.0--</div><div>105.50-2.0--</div><div>105.45-2.0--</div><div>105.40-2.0--</div><div>105.35-2.0--</div><div>105.35-2.0--</div><div>105.30-2.0--</div><div>105.15-1.9--</div><div>105.10-1.9--</div><div>105.10-1.9--</div><div>105.05-1.9--</div><div>104.15-1.6--</div><div>104.10-1.6--</div><div>104.10-1.6--</div><div>104.05-1.6--</div><div>103.77-1.5--</div><div>103.72-1.5--</div><div>103.72-1.5--</div><div>103.66-1.5--</div><div>103.28-1.4--</div><div>103.23-1.4--</div><div>103.23-1.4--</div><div>103.19-1.4--</div><div>103.10-1.4--</div><div>103.05-1.4--</div><div>103.05-1.4--</div><div>103.00-1.4--</div><div>102.60-1.3--</div><div>102.55-1.30.000.000.00</div><div>102.55-1.30.000.0021.74</div><div>102.48-1.30.000.0023.55</div><div>102.48-1.35.006.3823.39</div><div>102.43-1.35.006.3426.84</div><div>102.13-1.238.6647.4947.49</div><div>102.08-1.238.6647.2650.93</div><div>102.08-1.241.6650.9450.93</div><div>102.03-1.241.6650.7054.38</div><div>101.93-1.250.0060.3061.26</div><div>101.88-1.250.0060.0564.70</div><div>101.88-1.250.0060.0564.70</div><div>101.85-1.250.0059.8966.90</div><div>101.85-1.250.0059.8966.90</div><div>101.80-1.250.0059.6570.39</div><div>101.75-1.250.0059.4273.87</div><div>101.70-1.250.0059.2177.35</div><div>101.70-1.250.0059.2177.35</div><div>101.65-1.250.0059.0180.83</div><div>101.14-1.250.0057.62115.65</div></div></div></div>					
Schnitt:		Anlage Q1 Schnitt 8L		Seite Anlage Q1/41	
Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1141	
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>101.09</div><div>-1.2</div><div>50.00</div><div>57.54</div><div>119.13</div></div><div><div>101.09</div><div>-1.2</div><div>50.00</div><div>57.54</div><div>119.13</div></div><div><div>101.04</div><div>-1.1</div><div>50.00</div><div>57.47</div><div>122.61</div></div><div><div>100.74</div><div>-1.1</div><div>50.00</div><div>57.26</div><div>143.50</div></div><div><div>100.69</div><div>-1.1</div><div>50.00</div><div>57.25</div><div>146.98</div></div><div><div>100.69</div><div>-1.1</div><div>50.00</div><div>57.25</div><div>146.98</div></div><div><div>100.69</div><div>-1.1</div><div>50.00</div><div>57.25</div><div>147.02</div></div><div><div>100.69</div><div>-1.1</div><div>50.00</div><div>57.25</div><div>147.02</div></div><div><div>100.64</div><div>-1.1</div><div>50.00</div><div>57.25</div><div>150.28</div></div><div><div>100.31</div><div>-1.1</div><div>50.00</div><div>57.42</div><div>173.11</div></div><div><div>100.26</div><div>-1.1</div><div>50.00</div><div>57.46</div><div>176.38</div></div><div><div>100.26</div><div>-1.1</div><div>50.00</div><div>57.46</div><div>176.38</div></div><div><div>100.22</div><div>-1.2</div><div>50.00</div><div>57.50</div><div>179.65</div></div><div><div>100.12</div><div>-1.2</div><div>50.00</div><div>57.60</div><div>186.19</div></div><div><div>100.08</div><div>-1.2</div><div>50.00</div><div>57.65</div><div>189.46</div></div><div><div>100.08</div><div>-1.2</div><div>50.00</div><div>57.65</div><div>189.46</div></div><div><div>100.03</div><div>-1.2</div><div>50.00</div><div>57.71</div><div>192.73</div></div><div><div>99.89</div><div>-1.2</div><div>50.00</div><div>57.89</div><div>202.54</div></div><div><div>99.84</div><div>-1.2</div><div>50.00</div><div>57.95</div><div>205.81</div></div><div><div>99.84</div><div>-1.2</div><div>50.00</div><div>57.95</div><div>205.81</div></div><div><div>99.79</div><div>-1.2</div><div>50.00</div><div>58.01</div><div>209.08</div></div><div><div>99.46</div><div>-1.2</div><div>50.00</div><div>58.47</div><div>231.94</div></div><div><div>99.41</div><div>-1.2</div><div>50.00</div><div>58.54</div><div>235.20</div></div><div><div>99.41</div><div>-1.2</div><div>50.00</div><div>58.54</div><div>235.20</div></div><div><div>99.35</div><div>-1.2</div><div>50.00</div><div>58.63</div><div>239.66</div></div></div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: 0.00161930 Theoretischer Fußpunkt = 99.349 m</div><div>Einbindetiefe tg = 3.20 m Profillänge = 6.75 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 127.73 kN/m G',k = 0.00 kN/m Pv,k = 19.50 kN/m Eav,k = 36.37 kN/m (Eah,k = 197.95 kN/m) Bv,k = 68.04 Summe V,k = 115.56 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 100.23 bis 96.71 m) ==&gt; 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 (über GS) 102.48 101.85 55.00 s3: Flussskies, -sand (über GS) 101.85 99.35 55.00 s3: Flussskies, -sand Mantelfläche bis 99.35 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 172.15 / 1.40 = 122.96 kN/m Rd = Rb,d + Rs1,d = 988.01 kN/m</div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 172.44 - 0.00 + 46.38 + 26.33 = 245.14 kN/m ==&gt; µ = V,d / Rd = 245.14 / 988.01 = 0.25</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div>		
Schnitt: Anlage Q1 Schnitt 8L		Seite Anlage Q1/42
Kapitel: 6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 1142
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>Anlage R1 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: 00_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 = 6.30 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>105.75</td><td>105.25</td><td>5.000</td><td>5.000</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>			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]	105.75	105.25	5.000	5.000	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	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]																																																																																		
105.75	105.25	5.000	5.000																																																																																		
105.25	102.45	5.000	5.000																																																																																		
102.45	80.00	50.000	50.000																																																																																		
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/1																																																																																			
Kapitel: 1 LF 1.1 (BS-T, ohne Lasten)		Archiv Nr.: 1119																																																																																			
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 <math>\mu_e = 179.637 / 610.359 = 0.294</math> Bettungslager <math>B_{h,d} = 179.637 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 610.359 \text{ kN/m}</math></div> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{a,k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas),k</math></th><th><math>c(akt),k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&gt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>) mit Zusatzdrücke</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>105.750</td><td>0.000</td><td>3.702</td><td>0.00</td><td>0.00</td></tr><tr><td>105.750</td><td>105.500</td><td>3.702</td><td>5.553</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.250</td><td>5.553</td><td>6.527</td><td>0.00</td><td>2.50</td></tr><tr><td>105.250</td><td>105.000</td><td>6.721</td><td>7.785</td><td>2.50</td><td>5.00</td></tr><tr><td>105.000</td><td>104.204</td><td>7.785</td><td>11.170</td><td>5.00</td><td>5.00</td></tr><tr><td>104.204</td><td>103.210</td><td>11.170</td><td>15.402</td><td>5.00</td><td>5.00</td></tr><tr><td>103.210</td><td>103.160</td><td>15.402</td><td>15.614</td><td>5.00</td><td>5.00</td></tr><tr><td>103.160</td><td>103.125</td><td>15.614</td><td>15.914</td><td>5.00</td><td>5.00</td></tr><tr><td>103.125</td><td>102.450</td><td>15.914</td><td>25.122</td><td>5.00</td><td>5.00</td></tr><tr><td>102.450</td><td>102.401</td><td>19.973</td><td>20.568</td><td>5.00</td><td>5.00</td></tr><tr><td>102.401</td><td>102.203</td><td>20.568</td><td>22.950</td><td>5.00</td><td>5.00</td></tr><tr><td>102.203</td><td>101.856</td><td>22.950</td><td>27.119</td><td>5.00</td><td>5.00</td></tr><tr><td>101.856</td><td>101.213</td><td>27.119</td><td>34.861</td><td>5.00</td><td>5.00</td></tr><tr><td>101.213</td><td>100.422</td><td>34.861</td><td>44.389</td><td>5.00</td><td>5.00</td></tr><tr><td>100.422</td><td>100.212</td><td>44.389</td><td>46.166</td><td>5.00</td><td>5.00</td></tr><tr><td>100.212</td><td>99.949</td><td>46.166</td><td>48.388</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>99.070</td><td>48.388</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>96.260</td><td>55.831</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> <div>Hydrodynamische Wasserdruckspannung (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>106.25</td><td>105.75</td></tr></table> <div>Passive Erddruckbeiwerte bestimmt nach: DIN 4085:2017</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{pgh}</math></th><th><math>k_{pch}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th></tr><tr><th>[-]</th><th>[mNHN]</th><th>[-]</th><th>[-]</th><th>[°]</th><th>[°]</th><th>[°]</th></tr><tr><td>1</td><td>105.25</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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	105.750	0.000	3.702	0.00	0.00	105.750	105.500	3.702	5.553	0.00	0.00	105.500	105.250	5.553	6.527	0.00	2.50	105.250	105.000	6.721	7.785	2.50	5.00	105.000	104.204	7.785	11.170	5.00	5.00	104.204	103.210	11.170	15.402	5.00	5.00	103.210	103.160	15.402	15.614	5.00	5.00	103.160	103.125	15.614	15.914	5.00	5.00	103.125	102.450	15.914	25.122	5.00	5.00	102.450	102.401	19.973	20.568	5.00	5.00	102.401	102.203	20.568	22.950	5.00	5.00	102.203	101.856	22.950	27.119	5.00	5.00	101.856	101.213	27.119	34.861	5.00	5.00	101.213	100.422	34.861	44.389	5.00	5.00	100.422	100.212	44.389	46.166	5.00	5.00	100.212	99.949	46.166	48.388	5.00	5.00	99.949	99.070	48.388	55.816	5.00	5.00	99.070	99.040	55.816	55.831	5.00	5.00	99.040	96.260	55.831	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	105.75	Schicht	UK	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	<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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103.160	103.125	15.614	15.914	5.00	5.00																																																																																																																																																																																																																																																																																												
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102.450	102.401	19.973	20.568	5.00	5.00																																																																																																																																																																																																																																																																																												
102.401	102.203	20.568	22.950	5.00	5.00																																																																																																																																																																																																																																																																																												
102.203	101.856	22.950	27.119	5.00	5.00																																																																																																																																																																																																																																																																																												
101.856	101.213	27.119	34.861	5.00	5.00																																																																																																																																																																																																																																																																																												
101.213	100.422	34.861	44.389	5.00	5.00																																																																																																																																																																																																																																																																																												
100.422	100.212	44.389	46.166	5.00	5.00																																																																																																																																																																																																																																																																																												
100.212	99.949	46.166	48.388	5.00	5.00																																																																																																																																																																																																																																																																																												
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Baumaßnahme: Öffnung des Elsternmühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																																																																																																																																																																								
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<div>Passive Erddruckordinaten (Bemessungswerte)</div> <div>Teilsicherheit Erdwiderstand = 1.30</div> <div>Anpassungsfaktor Erdwiderstand = 0.80</div> 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<div>Weggrößen ([g+q],k)</div> <div>berechnet mit EI = 5.887E+5 kN·m²/m</div> 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Auftraggeber: Stadtverwaltung Leipzig		-																																																																																																																																																																	
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																	
<table><tr><td>103.16</td><td>-1.8</td><td>5.00</td><td>9.00</td><td>100.89</td></tr><tr><td>103.13</td><td>-1.8</td><td>5.00</td><td>8.92</td><td>101.79</td></tr><tr><td>103.08</td><td>-1.8</td><td>5.00</td><td>8.82</td><td>103.03</td></tr><tr><td>102.50</td><td>-1.5</td><td>5.00</td><td>7.57</td><td>117.95</td></tr><tr><td>102.45</td><td>-1.5</td><td>5.00</td><td>7.47</td><td>119.20</td></tr><tr><td>102.45</td><td>-1.5</td><td>5.00</td><td>7.47</td><td>212.75</td></tr><tr><td>102.40</td><td>-1.5</td><td>50.00</td><td>73.63</td><td>216.17</td></tr><tr><td>102.35</td><td>-1.5</td><td>50.00</td><td>72.58</td><td>219.59</td></tr><tr><td>102.25</td><td>-1.4</td><td>50.00</td><td>70.48</td><td>226.42</td></tr><tr><td>102.20</td><td>-1.4</td><td>50.00</td><td>69.44</td><td>229.84</td></tr><tr><td>102.20</td><td>-1.4</td><td>50.00</td><td>69.44</td><td>229.84</td></tr><tr><td>102.15</td><td>-1.4</td><td>50.00</td><td>68.40</td><td>233.25</td></tr><tr><td>101.91</td><td>-1.3</td><td>50.00</td><td>63.26</td><td>250.34</td></tr><tr><td>101.86</td><td>-1.2</td><td>50.00</td><td>62.24</td><td>253.75</td></tr><tr><td>101.86</td><td>-1.2</td><td>50.00</td><td>62.24</td><td>253.75</td></tr><tr><td>101.81</td><td>-1.2</td><td>50.00</td><td>61.23</td><td>257.17</td></tr><tr><td>101.26</td><td>-1.0</td><td>50.00</td><td>50.31</td><td>294.75</td></tr><tr><td>101.21</td><td>-1.0</td><td>50.00</td><td>49.34</td><td>298.17</td></tr><tr><td>101.21</td><td>-1.0</td><td>50.00</td><td>49.34</td><td>298.17</td></tr><tr><td>101.16</td><td>-1.0</td><td>50.00</td><td>48.37</td><td>301.59</td></tr><tr><td>100.47</td><td>-0.7</td><td>50.00</td><td>34.98</td><td>349.42</td></tr><tr><td>100.42</td><td>-0.7</td><td>50.00</td><td>34.04</td><td>352.84</td></tr><tr><td>100.42</td><td>-0.7</td><td>50.00</td><td>34.04</td><td>352.84</td></tr><tr><td>100.37</td><td>-0.7</td><td>50.00</td><td>33.03</td><td>356.47</td></tr><tr><td>100.26</td><td>-0.6</td><td>50.00</td><td>31.02</td><td>363.73</td></tr><tr><td>100.21</td><td>-0.6</td><td>50.00</td><td>30.02</td><td>367.36</td></tr><tr><td>100.16</td><td>-0.6</td><td>50.00</td><td>29.02</td><td>370.99</td></tr><tr><td>100.00</td><td>-0.5</td><td>50.00</td><td>26.01</td><td>381.88</td></tr><tr><td>99.95</td><td>-0.5</td><td>50.00</td><td>25.00</td><td>385.51</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02187721 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 5.80 m Profillänge = 6.30 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 119.21 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 23.05 kN/m (Eah,k = 128.55 kN/m) Bv,k = 57.64 Summe V,k = 84.62 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 100.83 bis 97.31 m) ==&gt; 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>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>99.95</td><td>55.00</td><td>s3: Flusskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 137.50 / 1.40 = 98.21 kN/m Rd = Rb,d + Rs1,d = 963.26 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 143.06 - 0.00 + 26.50 + 0.00 = 169.56 kN/m ==&gt; µ = V,d / Rd = 169.56 / 963.26 = 0.18</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			103.16	-1.8	5.00	9.00	100.89	103.13	-1.8	5.00	8.92	101.79	103.08	-1.8	5.00	8.82	103.03	102.50	-1.5	5.00	7.57	117.95	102.45	-1.5	5.00	7.47	119.20	102.45	-1.5	5.00	7.47	212.75	102.40	-1.5	50.00	73.63	216.17	102.35	-1.5	50.00	72.58	219.59	102.25	-1.4	50.00	70.48	226.42	102.20	-1.4	50.00	69.44	229.84	102.20	-1.4	50.00	69.44	229.84	102.15	-1.4	50.00	68.40	233.25	101.91	-1.3	50.00	63.26	250.34	101.86	-1.2	50.00	62.24	253.75	101.86	-1.2	50.00	62.24	253.75	101.81	-1.2	50.00	61.23	257.17	101.26	-1.0	50.00	50.31	294.75	101.21	-1.0	50.00	49.34	298.17	101.21	-1.0	50.00	49.34	298.17	101.16	-1.0	50.00	48.37	301.59	100.47	-0.7	50.00	34.98	349.42	100.42	-0.7	50.00	34.04	352.84	100.42	-0.7	50.00	34.04	352.84	100.37	-0.7	50.00	33.03	356.47	100.26	-0.6	50.00	31.02	363.73	100.21	-0.6	50.00	30.02	367.36	100.16	-0.6	50.00	29.02	370.99	100.00	-0.5	50.00	26.01	381.88	99.95	-0.5	50.00	25.00	385.51	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	99.95	55.00	s3: Flusskies, -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>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: 01_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 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>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 6.30 m</div>		
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/6
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

**Bettungsmodule**

von	bis	ks(oben)	ks(unten)
[mNHN]	[mNHN]	[MN/m³]	[MN/m³]
105.75	105.25	5.000	5.000
105.25	102.45	5.000	5.000
102.45	80.00	50.000	50.000

Ausnutzungsgrad  $\mu_e = 221.015 / 610.359 = 0.362$   
Bettungslager  $B_{h,d} = 221.015 \text{ kN/m}$   
Erdwiderstand  $E_{ph,d} = 610.359 \text{ kN/m}$

**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

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.

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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

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


von	bis	oben	unten	Wasserdruck	
[mNHN]	[mNHN]	[kN/m²]	[kN/m²]	[kN/m²]	
106.250	106.248	0.000	3.915	0.00	0.00
106.248	105.750	3.915	7.599	0.00	0.00
105.750	105.500	7.599	9.450	0.00	0.00
105.500	105.250	9.450	10.424	0.00	2.50
105.250	105.000	11.727	12.791	2.50	5.00
105.000	104.220	12.791	16.859	5.00	5.00
104.220	103.210	16.859	22.311	5.00	5.00
103.210	103.160	22.311	22.584	5.00	5.00
103.160	103.125	22.584	22.924	5.00	5.00
103.125	102.450	22.924	32.904	5.00	5.00
102.450	102.205	25.517	28.663	5.00	5.00
102.205	101.960	28.663	31.809	5.00	5.00
101.960	101.422	31.809	38.731	5.00	5.00
101.422	101.217	38.731	41.061	5.00	5.00
101.217	100.422	41.061	50.056	5.00	5.00
100.422	100.212	50.056	51.525	5.00	5.00
100.212	99.949	51.525	53.362	5.00	5.00
99.949	99.070	53.362	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	96.260	61.144	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

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	106.25	105.75

Schnitt: Anlage R1	Schnitt 9L	Seite Anlage R1/7
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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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>101.96</td><td>-141.33</td><td>-151.73</td></tr><tr><td>101.96</td><td>101.42</td><td>-151.73</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>100.21</td><td>-217.13</td><td>-226.06</td></tr><tr><td>100.21</td><td>99.95</td><td>-226.06</td><td>-237.23</td></tr><tr><td>99.95</td><td>99.07</td><td>-237.23</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>96.26</td><td>-278.06</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>106.25</td><td>-0.1</td><td>0.0</td><td>0.0</td></tr><tr><td>105.75</td><td>-12.1</td><td>-3.3</td><td>-0.7</td></tr><tr><td>105.50</td><td>-16.6</td><td>-3.0</td><td>-1.6</td></tr><tr><td>105.25</td><td>-20.0</td><td>-0.4</td><td>-2.0</td></tr><tr><td>105.00</td><td>-23.9</td><td>0.6</td><td>-2.0</td></tr><tr><td>104.22</td><td>-36.7</td><td>-1.5</td><td>-2.0</td></tr><tr><td>103.21</td><td>-54.2</td><td>-13.7</td><td>-8.8</td></tr><tr><td>103.16</td><td>-55.1</td><td>-14.5</td><td>-9.5</td></tr><tr><td>103.13</td><td>-55.7</td><td>-15.2</td><td>-10.0</td></tr><tr><td>102.45</td><td>-68.1</td><td>-32.3</td><td>-25.5</td></tr><tr><td>102.21</td><td>-63.0</td><td>-14.8</td><td>-31.2</td></tr><tr><td>101.96</td><td>-58.7</td><td>-0.6</td><td>-33.0</td></tr><tr><td>101.42</td><td>-52.6</td><td>19.5</td><td>-27.2</td></tr><tr><td>101.22</td><td>-51.5</td><td>23.1</td><td>-22.8</td></tr><tr><td>100.42</td><td>-52.6</td><td>17.5</td><td>-4.5</td></tr><tr><td>100.21</td><td>-54.4</td><td>11.0</td><td>-1.5</td></tr><tr><td>99.95</td><td>-57.5</td><td>0.0</td><td>0.0</td></tr></table> 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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>106.25</td><td>0.0</td><td>0.0</td><td>0.0</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>-10.5</td><td>-2.9</td><td>-0.6</td></tr><tr><td>105.50</td><td>-14.5</td><td>-2.6</td><td>-1.4</td></tr><tr><td>105.25</td><td>-17.4</td><td>-0.4</td><td>-1.8</td></tr><tr><td>105.00</td><td>-20.8</td><td>0.5</td><td>-1.8</td></tr><tr><td>104.22</td><td>-31.9</td><td>-1.3</td><td>-1.7</td></tr><tr><td>103.21</td><td>-47.2</td><td>-11.8</td><td>-7.6</td></tr><tr><td>103.16</td><td>-48.0</td><td>-12.5</td><td>-8.2</td></tr><tr><td>103.13</td><td>-48.5</td><td>-13.1</td><td>-8.6</td></tr><tr><td>102.45</td><td>-59.3</td><td>-27.9</td><td>-22.0</td></tr><tr><td>102.21</td><td>-54.8</td><td>-12.8</td><td>-26.9</td></tr><tr><td>101.96</td><td>-51.1</td><td>-0.5</td><td>-28.5</td></tr><tr><td>101.42</td><td>-45.8</td><td>16.8</td><td>-23.5</td></tr><tr><td>101.22</td><td>-44.8</td><td>20.0</td><td>-19.7</td></tr><tr><td>100.42</td><td>-45.8</td><td>15.1</td><td>-3.9</td></tr><tr><td>100.21</td><td>-47.3</td><td>9.5</td><td>-1.3</td></tr><tr><td>99.95</td><td>-50.1</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>106.25</td><td>0.0</td><td>0.0</td><td>0.0</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>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>105.25</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>104.22</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>103.16</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>103.13</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>102.21</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.96</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>101.42</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>100.42</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>100.21</td><td>0.0</td><td>0.0</td><td>0.0</td></tr><tr><td>99.95</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>106.25</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-4.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-4.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.80</td><td>-4.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.75</td><td>-4.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.75</td><td>-4.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>105.70</td><td>-4.3</td><td>0.00</td><td>0.00</td><td>4.75</td></tr><tr><td>105.55</td><td>-4.2</td><td>4.56</td><td>19.02</td><td>19.02</td></tr><tr><td>105.50</td><td>-4.1</td><td>4.56</td><td>18.86</td><td>23.77</td></tr><tr><td>105.50</td><td>-4.1</td><td>5.00</td><td>20.67</td><td>23.77</td></tr><tr><td>105.45</td><td>-4.1</td><td>5.00</td><td>20.49</td><td>28.53</td></tr><tr><td>105.30</td><td>-4.0</td><td>5.00</td><td>19.95</td><td>42.79</td></tr></table>						103.13	-48.5	-13.1	-8.6	102.45	-59.3	-27.9	-22.0	102.21	-54.8	-12.8	-26.9	101.96	-51.1	-0.5	-28.5	101.42	-45.8	16.8	-23.5	101.22	-44.8	20.0	-19.7	100.42	-45.8	15.1	-3.9	100.21	-47.3	9.5	-1.3	99.95	-50.1	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	106.25	0.0	0.0	0.0	105.75	-10.5	-2.9	-0.6	105.50	-14.5	-2.6	-1.4	105.25	-17.4	-0.4	-1.8	105.00	-20.8	0.5	-1.8	104.22	-31.9	-1.3	-1.7	103.21	-47.2	-11.8	-7.6	103.16	-48.0	-12.5	-8.2	103.13	-48.5	-13.1	-8.6	102.45	-59.3	-27.9	-22.0	102.21	-54.8	-12.8	-26.9	101.96	-51.1	-0.5	-28.5	101.42	-45.8	16.8	-23.5	101.22	-44.8	20.0	-19.7	100.42	-45.8	15.1	-3.9	100.21	-47.3	9.5	-1.3	99.95	-50.1	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	106.25	0.0	0.0	0.0	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	104.22	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	102.21	0.0	0.0	0.0	101.96	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	100.21	0.0	0.0	0.0	99.95	0.0	0.0	0.0	Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-4.7	-	-	-	106.25	-4.7	-	-	-	106.25	-4.7	-	-	-	106.20	-4.6	-	-	-	105.80	-4.3	-	-	-	105.75	-4.3	0.00	0.00	0.00	105.75	-4.3	0.00	0.00	0.00	105.70	-4.3	0.00	0.00	4.75	105.55	-4.2	4.56	19.02	19.02	105.50	-4.1	4.56	18.86	23.77	105.50	-4.1	5.00	20.67	23.77	105.45	-4.1	5.00	20.49	28.53	105.30	-4.0	5.00	19.95	42.79
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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
105.25	-4.0	5.00	19.77	47.55
105.25	-4.0	5.00	19.77	40.55
105.20	-3.9	5.00	19.59	43.13
105.05	-3.8	5.00	19.05	50.87
105.00	-3.8	5.00	18.87	53.44
105.00	-3.8	5.00	18.87	53.44
104.94	-3.7	5.00	18.65	55.03
104.27	-3.3	5.00	16.25	72.25
104.22	-3.2	5.00	16.07	73.55
104.22	-3.2	5.00	16.07	73.55
104.17	-3.2	5.00	15.89	74.85
103.26	-2.5	5.00	12.65	98.29
103.21	-2.5	5.00	12.47	99.59
103.21	-2.5	5.00	12.47	99.59
103.16	-2.5	5.00	12.29	100.89
103.16	-2.5	5.00	12.29	100.89
103.13	-2.4	5.00	12.17	101.79
103.13	-2.4	5.00	12.17	101.79
103.08	-2.4	5.00	12.00	103.03
102.50	-2.0	5.00	9.97	117.95
102.45	-2.0	5.00	9.80	119.20
102.45	-2.0	50.00	97.99	212.75
102.40	-1.9	50.00	96.30	216.13
102.25	-1.8	50.00	91.25	226.28
102.21	-1.8	50.00	89.58	229.66
102.21	-1.8	50.00	89.58	229.66
102.16	-1.8	50.00	87.92	233.04
102.01	-1.7	50.00	82.96	243.18
101.96	-1.6	50.00	81.31	246.56
101.96	-1.6	50.00	81.31	246.56
101.91	-1.6	50.00	79.68	249.95
101.47	-1.3	50.00	65.20	280.37
101.42	-1.3	50.00	63.62	283.76
101.42	-1.3	50.00	63.62	283.76
101.37	-1.2	50.00	61.97	287.29
101.27	-1.2	50.00	58.68	294.36
101.22	-1.1	50.00	57.05	297.89
101.22	-1.1	50.00	57.05	297.89
101.17	-1.1	50.00	55.42	301.42
100.46	-0.7	50.00	33.29	350.10
100.42	-0.6	50.00	32.05	352.84
100.42	-0.6	50.00	32.05	352.84
100.37	-0.6	50.00	30.42	356.47
100.26	-0.5	50.00	27.15	363.73
100.21	-0.5	50.00	25.52	367.36
100.21	-0.5	50.00	25.52	367.36
100.16	-0.5	50.00	23.88	370.99
100.00	-0.4	50.00	18.99	381.88
99.95	-0.3	50.00	17.35	385.51
<p>Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.03560037  Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe <math>t_g</math> = 5.80 m  Profillänge = 6.30 m</p>				
Schnitt: Anlage R1 Schnitt 9L				Seite Anlage R1/10
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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{s,k} = 119.21 \text{ kN/m}</math> <math>G'_{s,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 0.00 \text{ kN/m}</math> <math>E_{av,k} = 29.01 \text{ kN/m}</math> (<math>E_{ah,k} = 164.53 \text{ kN/m}</math>) <math>B_{v,k} = 70.34</math> Summe <math>V_{s,k} = 77.88 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><tr><td>von</td><td>bis</td><td><math>q_{s,k} [\text{kN/m}^2]</math></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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 137.50 / 1.40 = 98.21 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 963.26 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{s,k} + E_{av,d} + P_{v,d} = 143.06 - 0.00 + 33.36 + 0.00 = 176.42 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{d} / R_{d} = 176.42 / 963.26 = 0.18</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.75	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	99.95	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/11																
Kapitel: 2 LF 1.2 (BS-T, mit Lasten)		Archiv Nr.: 1111																
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><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: 02_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><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>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><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>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 = 6.30 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>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
Nr.	x1	x2	dh	a	x	y	Auflast	Verkehr																																																																									
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Statisch geprüft

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<div>Ausnutzungsgrad <math>\mu_{ue} = 129.714 / 141.230 = 0.918</math> Bettungslager <math>B_{h,d} = 129.714 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 141.230 \text{ kN/m}</math></div> <div>Anker und Steifen <math>N_{d'}</math> = 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><math>N_{d'}</math></th><th><math>N(g+q+w)_k</math></th><th><math>N(g+w)_k</math></th><th><math>N_{w,k}</math></th><th>EA</th><th>EI</th><th><math>N_{d'}</math></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>-49.92</td><td>-42.95</td><td>-42.95</td><td>-10.60</td><td>6.900E+4</td><td>2.100E+7</td><td>-54.76</td></tr></table> <div>Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max <math>M_{d'}</math> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig</div> <table><tr><th>x</th><th>y</th><th><math>w_{x,d}</math></th><th><math>w_{y,d}</math></th><th><math>N_{d'}</math></th><th><math>Q_{d'}</math></th><th><math>M_{d'}</math></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>-3.0</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-3.1</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.90</td><td>105.00</td><td>-3.1</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.80</td><td>105.00</td><td>-3.1</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.70</td><td>105.00</td><td>-3.2</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.60</td><td>105.00</td><td>-3.3</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.50</td><td>105.00</td><td>-3.3</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.40</td><td>105.00</td><td>-3.4</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.30</td><td>105.00</td><td>-3.5</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.20</td><td>105.00</td><td>-3.6</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.10</td><td>105.00</td><td>-3.6</td><td>0.0</td><td>-49.92</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>105.00</td><td>-3.7</td><td>0.0</td><td>-49.92</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\00_BS 9_LF1.1 (ohne Lasten).vrb eingeliesen.</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>105.00</td><td>-0.0026</td></tr></table> <div>Bodenkennwerte</div> <table><tr><th>Schicht</th><th>UK</th><th><math>\gamma_{m,k}</math></th><th><math>\gamma_{m',k}</math></th><th><math>\phi_{i,k}</math></th><th><math>c(pas)_k</math></th><th><math>c(akt)_k</math></th><th><math>d(p)/\phi_i</math></th><th><math>d(a)/\phi_i</math></th><th><math>q_c</math></th><th><math>c_{u,k}</math></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: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math> Faktor [-] = 0.50 Ersatzerddruck-Beiwert mit <math>\phi_i = 40^\circ</math> Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>. Ersatzerddruck-Beiwert <math>k_{ah}</math> wird nur auf ständige Lasten angewendet. bestimmt nach: (Erddruckbeiwerte für horizontales Gelände) Wandreibung angepasst.</div> <table><tr><th>Schicht</th><th>UK</th><th><math>k_{agh}</math></th><th><math>k_{ach}</math></th><th><math>\phi_{i,k}</math></th><th><math>\delta</math></th><th><math>\theta</math></th><th><math>k_{agh}(40^\circ)</math></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 (<math>[g+q]_k</math>) 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>103.250</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	-49.92	-42.95	-42.95	-10.60	6.900E+4	2.100E+7	-54.76	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	-3.0	0.0	-49.92	0.00	0.00	-0.90	105.00	-3.1	0.0	-49.92	0.00	0.00	-0.90	105.00	-3.1	0.0	-49.92	0.00	0.00	-0.80	105.00	-3.1	0.0	-49.92	0.00	0.00	-0.70	105.00	-3.2	0.0	-49.92	0.00	0.00	-0.60	105.00	-3.3	0.0	-49.92	0.00	0.00	-0.50	105.00	-3.3	0.0	-49.92	0.00	0.00	-0.40	105.00	-3.4	0.0	-49.92	0.00	0.00	-0.30	105.00	-3.5	0.0	-49.92	0.00	0.00	-0.20	105.00	-3.6	0.0	-49.92	0.00	0.00	-0.10	105.00	-3.6	0.0	-49.92	0.00	0.00	0.00	105.00	-3.7	0.0	-49.92	0.00	0.00	Anker/Steife	Tiefe	Vorverformung	[-]	[m]	[m]	1	105.00	-0.0026	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	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	103.250	8.409	8.409	5.00	<div>Statisch geprüft für Standssicherheit Dipl.-Ing. A. Forner</div> <div>Schnitt: Anlage R1 Schnitt 9L</div> <div>Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)</div> <div>Vorgang: Genehmigungsstatik</div>		<div>Seite Anlage R1/13</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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<table><tr><td>103.250</td><td>103.205</td><td>8.409</td><td>8.409</td><td>5.00</td><td>5.00</td></tr><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>101.807</td><td>22.950</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>100.422</td><td>34.861</td><td>44.389</td><td>5.00</td><td>5.00</td></tr><tr><td>100.422</td><td>100.212</td><td>44.389</td><td>46.166</td><td>5.00</td><td>5.00</td></tr><tr><td>100.212</td><td>99.949</td><td>46.166</td><td>48.388</td><td>5.00</td><td>5.00</td></tr><tr><td>99.949</td><td>99.070</td><td>48.388</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>96.260</td><td>55.831</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>k<sub>ph</sub></td><td>k<sub>pch</sub></td><td>phi<sub>k</sub></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>101.81</td><td>-13.65</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>100.42</td><td>-55.70</td><td>-89.35</td></tr><tr><td>100.42</td><td>100.21</td><td>-89.35</td><td>-98.28</td></tr><tr><td>100.21</td><td>99.95</td><td>-98.28</td><td>-109.45</td></tr><tr><td>99.95</td><td>99.07</td><td>-109.45</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>96.26</td><td>-148.07</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>-49.9</td></tr><tr><td>105.00</td><td>-33.5</td><td>30.3</td><td>-11.6</td><td></td></tr><tr><td>104.40</td><td>-48.8</td><td>18.0</td><td>2.9</td><td></td></tr><tr><td>104.20</td><td>-53.7</td><td>14.9</td><td>6.2</td><td></td></tr><tr><td>103.25</td><td>-76.9</td><td>0.0</td><td>13.2</td><td></td></tr><tr><td>103.20</td><td>-77.9</td><td>-0.7</td><td>13.2</td><td></td></tr><tr><td>103.16</td><td>-79.0</td><td>-1.4</td><td>13.2</td><td></td></tr><tr><td>103.13</td><td>-79.9</td><td>-2.0</td><td>13.1</td><td></td></tr><tr><td>102.55</td><td>-93.9</td><td>-11.0</td><td>9.4</td><td></td></tr><tr><td>102.45</td><td>-96.0</td><td>-13.9</td><td>8.1</td><td></td></tr><tr><td>102.20</td><td>-100.1</td><td>-18.1</td><td>4.1</td><td></td></tr><tr><td>101.81</td><td>-102.6</td><td>-16.5</td><td>-3.1</td><td></td></tr><tr><td>101.21</td><td>-98.6</td><td>1.2</td><td>-7.9</td><td></td></tr><tr><td>100.42</td><td>-96.9</td><td>8.4</td><td>-2.3</td><td></td></tr></table>								103.250	103.205	8.409	8.409	5.00	5.00	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	101.807	22.950	27.714	5.00	5.00	101.807	101.213	27.714	34.861	5.00	5.00	101.213	100.422	34.861	44.389	5.00	5.00	100.422	100.212	44.389	46.166	5.00	5.00	100.212	99.949	46.166	48.388	5.00	5.00	99.949	99.070	48.388	55.816	5.00	5.00	99.070	99.040	55.816	55.831	5.00	5.00	99.040	96.260	55.831	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	k <sub>ph</sub>	k <sub>pch</sub>	phi <sub>k</sub>	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	101.81	-13.65	-30.47	101.81	101.21	-30.47	-55.70	101.21	100.42	-55.70	-89.35	100.42	100.21	-89.35	-98.28	100.21	99.95	-98.28	-109.45	99.95	99.07	-109.45	-146.80	99.07	99.04	-146.80	-148.07	99.04	96.26	-148.07	-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	-49.9	105.00	-33.5	30.3	-11.6		104.40	-48.8	18.0	2.9		104.20	-53.7	14.9	6.2		103.25	-76.9	0.0	13.2		103.20	-77.9	-0.7	13.2		103.16	-79.0	-1.4	13.2		103.13	-79.9	-2.0	13.1		102.55	-93.9	-11.0	9.4		102.45	-96.0	-13.9	8.1		102.20	-100.1	-18.1	4.1		101.81	-102.6	-16.5	-3.1		101.21	-98.6	1.2	-7.9		100.42	-96.9	8.4	-2.3	
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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>100.21   -97.7   5.7   -0.8 99.95   -99.5   0.0   0.0</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>106.25   0.0   0.0   0.0 105.50   -17.6   -9.5   -3.5 105.25   -23.5   -12.9   -6.3 105.00   -29.1   -17.0   -10.1   -42.9 105.00   -29.1   25.9   -10.1 104.40   -42.5   15.4   2.3 104.20   -46.7   12.7   5.1 103.25   -66.8   -0.1   11.1 103.20   -67.8   -0.7   11.1 103.16   -68.7   -1.3   11.1 103.13   -69.5   -1.7   11.0 102.55   -81.7   -9.4   7.8 102.45   -83.6   -11.9   6.7 102.20   -87.2   -15.5   3.3 101.81   -89.3   -14.1   -2.9 101.21   -85.9   1.2   -7.0 100.42   -84.4   7.3   -2.0 100.21   -85.1   5.0   -0.7 99.95   -86.6   0.0   0.0</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>106.25   0.0   0.0   0.0 105.50   -17.6   -9.5   -3.5 105.25   -23.5   -12.9   -6.3 105.00   -29.1   -17.0   -10.1   -42.9 105.00   -29.1   25.9   -10.1 104.40   -42.5   15.4   2.3 104.20   -46.7   12.7   5.1 103.25   -66.8   -0.1   11.1 103.20   -67.8   -0.7   11.1 103.16   -68.7   -1.3   11.1 103.13   -69.5   -1.7   11.0 102.55   -81.7   -9.4   7.8 102.45   -83.6   -11.9   6.7 102.20   -87.2   -15.5   3.3 101.81   -89.3   -14.1   -2.9 101.21   -85.9   1.2   -7.0 100.42   -84.4   7.3   -2.0 100.21   -85.1   5.0   -0.7 99.95   -86.6   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>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   0.0 103.25   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   0.0 101.81   0.0   0.0   0.0 101.21   0.0   0.0   0.0 100.42   0.0   0.0   0.0 100.21   0.0   0.0   0.0 99.95   0.0   0.0   0.0</div></div></div></div></div></div></div>						
Schnitt:		Anlage R1   Schnitt 9L			Seite Anlage R1/15	
Kapitel:		3   LF 2.1 (BS-T, ohne 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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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>106.25</td><td>-3.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-3.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-3.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.95</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-2.9</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-2.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.30</td><td>-2.4</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-2.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-2.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-2.0</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-2.0</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-1.9</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-1.9</td><td>5.00</td><td>9.70</td><td>13.02</td></tr><tr><td>102.45</td><td>-1.9</td><td>5.00</td><td>9.56</td><td>14.31</td></tr><tr><td>102.45</td><td>-1.9</td><td>2.67</td><td>5.10</td><td>5.10</td></tr><tr><td>102.40</td><td>-1.9</td><td>2.67</td><td>5.03</td><td>8.52</td></tr><tr><td>102.25</td><td>-1.8</td><td>10.38</td><td>18.77</td><td>18.77</td></tr><tr><td>102.20</td><td>-1.8</td><td>10.38</td><td>18.50</td><td>22.19</td></tr><tr><td>102.20</td><td>-1.8</td><td>12.46</td><td>22.19</td><td>22.19</td></tr><tr><td>102.15</td><td>-1.8</td><td>12.46</td><td>21.86</td><td>25.60</td></tr><tr><td>101.86</td><td>-1.6</td><td>28.88</td><td>46.11</td><td>46.10</td></tr><tr><td>101.81</td><td>-1.6</td><td>28.88</td><td>45.34</td><td>49.52</td></tr><tr><td>101.81</td><td>-1.6</td><td>31.54</td><td>49.52</td><td>49.52</td></tr><tr><td>101.76</td><td>-1.5</td><td>31.54</td><td>48.69</td><td>52.94</td></tr><tr><td>101.26</td><td>-1.3</td><td>50.00</td><td>64.07</td><td>87.10</td></tr><tr><td>101.21</td><td>-1.3</td><td>50.00</td><td>62.76</td><td>90.52</td></tr><tr><td>101.21</td><td>-1.3</td><td>50.00</td><td>62.76</td><td>90.52</td></tr><tr><td>101.16</td><td>-1.2</td><td>50.00</td><td>61.46</td><td>93.94</td></tr><tr><td>100.47</td><td>-0.9</td><td>50.00</td><td>43.33</td><td>141.77</td></tr><tr><td>100.42</td><td>-0.8</td><td>50.00</td><td>42.05</td><td>145.19</td></tr><tr><td>100.42</td><td>-0.8</td><td>50.00</td><td>42.05</td><td>145.19</td></tr><tr><td>100.37</td><td>-0.8</td><td>50.00</td><td>40.68</td><td>148.82</td></tr><tr><td>100.26</td><td>-0.8</td><td>50.00</td><td>37.94</td><td>156.08</td></tr><tr><td>100.21</td><td>-0.7</td><td>50.00</td><td>36.57</td><td>159.71</td></tr><tr><td>100.21</td><td>-0.7</td><td>50.00</td><td>36.57</td><td>159.71</td></tr><tr><td>100.16</td><td>-0.7</td><td>50.00</td><td>35.21</td><td>163.34</td></tr><tr><td>100.00</td><td>-0.6</td><td>50.00</td><td>31.11</td><td>174.23</td></tr><tr><td>99.95</td><td>-0.6</td><td>50.00</td><td>29.74</td><td>177.86</td></tr></tbody></table> <div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.02980224 Theoretischer Fußpunkt = 99.949 m</div>			Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-3.9	-	-	-	106.20	-3.8	-	-	-	105.55	-3.5	-	-	-	105.50	-3.5	-	-	-	105.50	-3.5	-	-	-	105.45	-3.4	-	-	-	105.30	-3.4	-	-	-	105.25	-3.3	-	-	-	105.25	-3.3	-	-	-	105.20	-3.3	-	-	-	105.05	-3.2	-	-	-	105.00	-3.2	-	-	-	105.00	-3.2	-	-	-	104.95	-3.2	-	-	-	104.45	-2.9	-	-	-	104.40	-2.9	-	-	-	104.40	-2.9	-	-	-	104.35	-2.9	-	-	-	104.25	-2.8	-	-	-	104.20	-2.8	-	-	-	104.20	-2.8	-	-	-	104.15	-2.8	-	-	-	103.30	-2.4	-	-	-	103.25	-2.3	-	-	-	103.25	-2.3	-	-	-	103.20	-2.3	-	-	-	103.20	-2.3	-	-	-	103.16	-2.3	-	-	-	103.16	-2.3	-	-	-	103.13	-2.3	-	-	-	103.13	-2.3	-	-	-	103.08	-2.2	-	-	-	102.60	-2.0	-	-	-	102.55	-2.0	0.00	0.00	0.00	102.55	-2.0	0.00	0.00	11.73	102.50	-1.9	0.00	0.00	13.02	102.50	-1.9	5.00	9.70	13.02	102.45	-1.9	5.00	9.56	14.31	102.45	-1.9	2.67	5.10	5.10	102.40	-1.9	2.67	5.03	8.52	102.25	-1.8	10.38	18.77	18.77	102.20	-1.8	10.38	18.50	22.19	102.20	-1.8	12.46	22.19	22.19	102.15	-1.8	12.46	21.86	25.60	101.86	-1.6	28.88	46.11	46.10	101.81	-1.6	28.88	45.34	49.52	101.81	-1.6	31.54	49.52	49.52	101.76	-1.5	31.54	48.69	52.94	101.26	-1.3	50.00	64.07	87.10	101.21	-1.3	50.00	62.76	90.52	101.21	-1.3	50.00	62.76	90.52	101.16	-1.2	50.00	61.46	93.94	100.47	-0.9	50.00	43.33	141.77	100.42	-0.8	50.00	42.05	145.19	100.42	-0.8	50.00	42.05	145.19	100.37	-0.8	50.00	40.68	148.82	100.26	-0.8	50.00	37.94	156.08	100.21	-0.7	50.00	36.57	159.71	100.21	-0.7	50.00	36.57	159.71	100.16	-0.7	50.00	35.21	163.34	100.00	-0.6	50.00	31.11	174.23	99.95	-0.6	50.00	29.74	177.86
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102.15	-1.8	12.46	21.86	25.60																																																																																																																																																																																																																																																																																																																														
101.86	-1.6	28.88	46.11	46.10																																																																																																																																																																																																																																																																																																																														
101.81	-1.6	28.88	45.34	49.52																																																																																																																																																																																																																																																																																																																														
101.81	-1.6	31.54	49.52	49.52																																																																																																																																																																																																																																																																																																																														
101.76	-1.5	31.54	48.69	52.94																																																																																																																																																																																																																																																																																																																														
101.26	-1.3	50.00	64.07	87.10																																																																																																																																																																																																																																																																																																																														
101.21	-1.3	50.00	62.76	90.52																																																																																																																																																																																																																																																																																																																														
101.21	-1.3	50.00	62.76	90.52																																																																																																																																																																																																																																																																																																																														
101.16	-1.2	50.00	61.46	93.94																																																																																																																																																																																																																																																																																																																														
100.47	-0.9	50.00	43.33	141.77																																																																																																																																																																																																																																																																																																																														
100.42	-0.8	50.00	42.05	145.19																																																																																																																																																																																																																																																																																																																														
100.42	-0.8	50.00	42.05	145.19																																																																																																																																																																																																																																																																																																																														
100.37	-0.8	50.00	40.68	148.82																																																																																																																																																																																																																																																																																																																														
100.26	-0.8	50.00	37.94	156.08																																																																																																																																																																																																																																																																																																																														
100.21	-0.7	50.00	36.57	159.71																																																																																																																																																																																																																																																																																																																														
100.21	-0.7	50.00	36.57	159.71																																																																																																																																																																																																																																																																																																																														
100.16	-0.7	50.00	35.21	163.34																																																																																																																																																																																																																																																																																																																														
100.00	-0.6	50.00	31.11	174.23																																																																																																																																																																																																																																																																																																																														
99.95	-0.6	50.00	29.74	177.86																																																																																																																																																																																																																																																																																																																														
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/16																																																																																																																																																																																																																																																																																																																																
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr. 116																																																																																																																																																																																																																																																																																																																																
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>Einbindetiefe <math>t_g = 2.60 \text{ m}</math>          Profillänge <math>= 6.30 \text{ m}</math></p> <p>Nachweis Summe V          Nachweis des mobilisierten Erdwiderstands          Bedingung: <math>P_{v,k} + G_{v,k} - G'_{v,k} + E_{av,k} \geq B_{v,k}</math>  <math>G_{v,k} = 119.21 \text{ kN/m}</math>  <math>G'_{v,k} = 0.00 \text{ kN/m}</math>  <math>P_{v,k} = 0.00 \text{ kN/m}</math>  <math>E_{av,k} = 23.05 \text{ kN/m}</math> (<math>E_{ah,k} = 128.55 \text{ kN/m}</math>)  <math>B_{v,k} = 44.50</math>          Summe <math>V_{v,k} = 97.76 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit          (Erfahrungswerte nach EA Pfähle)          Verfahren 2: EAU Bild E 4-3 (rechts)          Bohrpfahlwand <math>D = 0.88 \text{ m}</math>          Verhältniswert (min, max) <math>= 0.00</math>          Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math>          (gemittelt von 100.83 bis 97.31 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math>  <math>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}</math></p> <p>Mantelreibung</p> <table border="1"> <thead> <tr> <th>von</th> <th>bis</th> <th><math>q_{s,k} [\text{kN/m}^2]</math></th> <th>Bezeichnung</th> </tr> </thead> <tbody> <tr> <td>102.55</td> <td>102.45</td> <td>0.00</td> <td>S2: Auelehm</td> </tr> <tr> <td>102.45</td> <td>99.95</td> <td>55.00</td> <td>s3: Flussskies, -sand</td> </tr> </tbody> </table> <p>Mantelfläche bis 99.95 m <math>= 1.000 \text{ m}^2/\text{m/m} \Rightarrow R_{s1,d}</math>  <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 137.50 / 1.40 = 98.21 \text{ kN/m}</math>  <math>R_{d,d} = R_{b,d} + R_{s1,d} = 963.26 \text{ kN/m}</math></p> <p>Einwirkungen  <math>V_{d,d} = G_{d,d} - G'_{d,d} + E_{av,d} + P_{v,d} = 143.06 - 0.00 + 26.50 + 0.00 = 169.56 \text{ kN/m}</math>  <math>\Rightarrow \mu = V_{d,d} / R_{d,d} = 169.56 / 963.26 = 0.18</math></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	99.95	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	99.95	55.00	s3: Flussskies, -sand											
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/17												
Kapitel: 3 LF 2.1 (BS-T, ohne Lasten)		Archiv Nr.: 1117												
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: 03_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 = 6.50 m</div>		
Schnitt:	Anlage R1    Schnitt 9L	Seite Anlage R1/18
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

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  $\mu_e = 161.864 / 163.971 = 0.987$   
Bettungslager  $B_{h,d} = 161.864 \text{ kN/m}$   
Erddwiderstand  $E_{ph,d} = 163.971 \text{ kN/m}$

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	-72.78	-62.82	-62.82	-10.83	6.900E+4	2.100E+7	-80.10 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	-3.0	0.0	-72.78	0.00	0.00
-0.90	105.00	-3.1	0.0	-72.78	0.00	0.00
-0.90	105.00	-3.1	0.0	-72.78	0.00	0.00
-0.80	105.00	-3.2	0.0	-72.78	0.00	0.00
-0.70	105.00	-3.3	0.0	-72.78	0.00	0.00
-0.60	105.00	-3.4	0.0	-72.78	0.00	0.00
-0.50	105.00	-3.5	0.0	-72.78	0.00	0.00
-0.40	105.00	-3.6	0.0	-72.78	0.00	0.00
-0.30	105.00	-3.7	0.0	-72.78	0.00	0.00
-0.20	105.00	-3.8	0.0	-72.78	0.00	0.00
-0.10	105.00	-3.9	0.0	-72.78	0.00	0.00
0.00	105.00	-4.0	0.0	-72.78	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\00\_BS 9\_LF1.1 (ohne Lasten).vrb  
eingeliesen.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	105.00	-0.0026

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

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.

Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$
[-]	[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 R1	Schnitt 9L	Seite Anlage R1/19
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 Erddruckordinaten ([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>100.422</td><td>41.061</td><td>50.056</td><td>5.00</td><td>5.00</td></tr><tr><td>100.422</td><td>100.215</td><td>50.056</td><td>51.503</td><td>5.00</td><td>5.00</td></tr><tr><td>100.215</td><td>99.749</td><td>51.503</td><td>54.760</td><td>5.00</td><td>5.00</td></tr><tr><td>99.749</td><td>99.070</td><td>54.760</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>96.260</td><td>61.144</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 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>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><tr><td>100.42</td><td>100.21</td><td>-89.35</td><td>-98.15</td></tr><tr><td>100.21</td><td>99.75</td><td>-98.15</td><td>-117.95</td></tr><tr><td>99.75</td><td>99.07</td><td>-117.95</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>96.26</td><td>-150.28</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	100.422	41.061	50.056	5.00	5.00	100.422	100.215	50.056	51.503	5.00	5.00	100.215	99.749	51.503	54.760	5.00	5.00	99.749	99.070	54.760	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	96.260	61.144	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	100.42	-55.53	-89.35	100.42	100.21	-89.35	-98.15	100.21	99.75	-98.15	-117.95	99.75	99.07	-117.95	-146.80	99.07	99.04	-146.80	-148.07	99.04	98.99	-148.07	-150.28	98.99	96.26	-150.28	-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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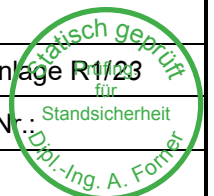




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<table><thead><tr><th>Tiefe</th><th>N</th><th>Q</th><th>M</th><th>A(h)</th></tr><tr><th>[mNHN]</th><th>[kN/m]</th><th>[kN/m]</th><th>[kN·m/m]</th><th>[kN/m]</th></tr></thead><tbody><tr><td>106.25</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><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>100.42</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>100.21</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></tr><tr><td>99.75</td><td>0.0</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>106.25</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.25</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>106.20</td><td>-4.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.55</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.50</td><td>-3.8</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.45</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.30</td><td>-3.7</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.25</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.20</td><td>-3.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.05</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>105.00</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.94</td><td>-3.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.45</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.40</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.35</td><td>-3.2</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.25</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.20</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>104.15</td><td>-3.1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.25</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.20</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.16</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.13</td><td>-2.6</td><td>-</td><td>-</td><td>-</td></tr><tr><td>103.08</td><td>-2.5</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.60</td><td>-2.3</td><td>-</td><td>-</td><td>-</td></tr><tr><td>102.55</td><td>-2.3</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>102.55</td><td>-2.3</td><td>0.00</td><td>0.00</td><td>11.73</td></tr><tr><td>102.50</td><td>-2.2</td><td>0.00</td><td>0.00</td><td>13.02</td></tr><tr><td>102.50</td><td>-2.2</td><td>5.00</td><td>11.19</td><td>13.02</td></tr><tr><td>102.45</td><td>-2.2</td><td>5.00</td><td>11.05</td><td>14.31</td></tr><tr><td>102.45</td><td>-2.2</td><td>2.31</td><td>5.11</td><td>5.10</td></tr><tr><td>102.40</td><td>-2.2</td><td>2.31</td><td>5.04</td><td>8.49</td></tr><tr><td>102.25</td><td>-2.1</td><td>8.85</td><td>18.63</td><td>18.63</td></tr><tr><td>102.21</td><td>-2.1</td><td>8.85</td><td>18.39</td><td>22.01</td></tr><tr><td>102.21</td><td>-2.1</td><td>10.59</td><td>22.01</td><td>22.01</td></tr><tr><td>102.16</td><td>-2.1</td><td>10.59</td><td>21.73</td><td>25.39</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	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		100.42	0.0	0.0	0.0		100.21	0.0	0.0	0.0		99.75	0.0	0.0	0.0		Tiefe	w	ks	sig,Bh,k	eph,k	[m]	[mm]	[kN/m³]	[kN/m²]	[kN/m²]	106.25	-4.1	-	-	-	106.25	-4.1	-	-	-	106.25	-4.1	-	-	-	106.20	-4.1	-	-	-	105.55	-3.8	-	-	-	105.50	-3.8	-	-	-	105.50	-3.8	-	-	-	105.45	-3.7	-	-	-	105.30	-3.7	-	-	-	105.25	-3.6	-	-	-	105.25	-3.6	-	-	-	105.20	-3.6	-	-	-	105.05	-3.5	-	-	-	105.00	-3.5	-	-	-	105.00	-3.5	-	-	-	104.94	-3.5	-	-	-	104.45	-3.2	-	-	-	104.40	-3.2	-	-	-	104.40	-3.2	-	-	-	104.35	-3.2	-	-	-	104.25	-3.1	-	-	-	104.20	-3.1	-	-	-	104.20	-3.1	-	-	-	104.15	-3.1	-	-	-	103.25	-2.6	-	-	-	103.20	-2.6	-	-	-	103.20	-2.6	-	-	-	103.16	-2.6	-	-	-	103.16	-2.6	-	-	-	103.13	-2.6	-	-	-	103.13	-2.6	-	-	-	103.08	-2.5	-	-	-	102.60	-2.3	-	-	-	102.55	-2.3	0.00	0.00	0.00	102.55	-2.3	0.00	0.00	11.73	102.50	-2.2	0.00	0.00	13.02	102.50	-2.2	5.00	11.19	13.02	102.45	-2.2	5.00	11.05	14.31	102.45	-2.2	2.31	5.11	5.10	102.40	-2.2	2.31	5.04	8.49	102.25	-2.1	8.85	18.63	18.63	102.21	-2.1	8.85	18.39	22.01	102.21	-2.1	10.59	22.01	22.01	102.16	-2.1	10.59	21.73	25.39
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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><div><div>101.86</div><div>-1.9</div><div>24.15</div><div>45.68</div><div>45.68</div></div><div><div>101.81</div><div>-1.9</div><div>24.15</div><div>45.03</div><div>49.06</div></div><div><div>101.81</div><div>-1.9</div><div>26.31</div><div>49.06</div><div>49.06</div></div><div><div>101.76</div><div>-1.8</div><div>26.31</div><div>48.36</div><div>52.44</div></div><div><div>101.47</div><div>-1.7</div><div>43.37</div><div>72.73</div><div>72.73</div></div><div><div>101.42</div><div>-1.7</div><div>43.37</div><div>71.57</div><div>76.11</div></div><div><div>101.42</div><div>-1.7</div><div>46.12</div><div>76.11</div><div>76.11</div></div><div><div>101.37</div><div>-1.6</div><div>46.12</div><div>74.82</div><div>79.64</div></div><div><div>101.27</div><div>-1.6</div><div>50.00</div><div>78.32</div><div>86.71</div></div><div><div>101.22</div><div>-1.5</div><div>50.00</div><div>76.92</div><div>90.24</div></div><div><div>101.22</div><div>-1.5</div><div>50.00</div><div>76.92</div><div>90.24</div></div><div><div>101.17</div><div>-1.5</div><div>50.00</div><div>75.53</div><div>93.77</div></div><div><div>100.46</div><div>-1.1</div><div>50.00</div><div>56.48</div><div>142.45</div></div><div><div>100.42</div><div>-1.1</div><div>50.00</div><div>55.41</div><div>145.19</div></div><div><div>100.42</div><div>-1.1</div><div>50.00</div><div>55.41</div><div>145.19</div></div><div><div>100.37</div><div>-1.1</div><div>50.00</div><div>54.02</div><div>148.76</div></div><div><div>100.27</div><div>-1.0</div><div>50.00</div><div>51.24</div><div>155.91</div></div><div><div>100.21</div><div>-1.0</div><div>50.00</div><div>49.85</div><div>159.49</div></div><div><div>100.21</div><div>-1.0</div><div>50.00</div><div>49.85</div><div>159.49</div></div><div><div>100.16</div><div>-1.0</div><div>50.00</div><div>48.47</div><div>163.06</div></div><div><div>99.80</div><div>-0.8</div><div>50.00</div><div>38.75</div><div>188.09</div></div><div><div>99.75</div><div>-0.7</div><div>50.00</div><div>37.36</div><div>191.67</div></div></div></div><div><div>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03070710 Theoretischer Fußpunkt = 99.749 m</div><div>Einbindetiefe tg = 2.80 m Profillänge = 6.50 m</div><div>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 123.00 kN/m G',k = 0.00 kN/m Pv,k = 0.00 kN/m Eav,k = 31.16 kN/m (Eah,k = 175.34 kN/m) Bv,k = 55.59 Summe V,k = 98.57 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 100.63 bis 97.11 m) ==&gt; 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<div><div><div>von</div><div>bis</div><div>qs,k [kN/m²]</div><div>Bezeichnung</div></div><div><div>102.55</div><div>102.45</div><div>0.00</div><div>S2: Auelehm</div></div><div><div>102.45</div><div>99.75</div><div>55.00</div><div>s3: Flusskies, -sand</div></div></div><div>Mantelfläche bis 99.75 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 148.50 / 1.40 = 106.07 kN/m Rd,d = Rb,d + Rs1,d = 971.12 kN/m</div></div><div>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 147.60 - 0.00 + 35.83 + 0.00 = 183.43 kN/m ==&gt; µ = V,d / Rd,d = 183.43 / 971.12 = 0.19</div><div>Horizontaler Wasserdruck herkömmlich bestimmt.</div></div></div>		
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/23
Kapitel: 4 LF 2.2 (BS-T, mit Lasten)		Archiv Nr. 23
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

### 5 LF 3 (BS-T, mit Lasten)

GGU-RETAIN / Version 12.00 / 01.02.2024  
Bohrpfahlwand

Teilsicherheitskonzept (EC 7)  
EMG TBA 3.2 - Schnitt 9  
Datei: 04\_BS 9\_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 = 106.25 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

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)

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

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

Schnitt:	Anlage R1 Schnitt 9L	Seite Anlage R1/24
Kapitel:	5 LF 3 (BS-T, mit Lasten)	Archiv Nr. 11/24
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

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 = 6.30 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  $\mu_e = 116.734 / 141.230 = 0.827$

Bettungslager  $B_{h,d} = 116.734 \text{ kN/m}$

Erdwiderstand  $E_{ph,d} = 141.230 \text{ kN/m}$

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	-124.45	-106.45	-106.45	-45.37	3.900E+7	2.100E+7	-135.73

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	-3.0	0.0	-124.69	0.00	0.00
-7.47	103.72	-3.0	0.0	-124.69	0.00	0.00
-7.47	103.72	-3.0	0.0	-124.69	0.00	0.00
-6.64	103.72	-3.0	0.0	-124.69	0.00	0.00
-5.81	103.72	-3.0	0.0	-124.69	0.00	0.00
-4.98	103.72	-3.0	0.0	-124.69	0.00	0.00
-4.15	103.72	-3.0	0.0	-124.69	0.00	0.00
-3.32	103.72	-3.0	0.0	-124.69	0.00	0.00
-2.49	103.72	-3.0	0.0	-124.69	0.00	0.00
-1.66	103.72	-3.0	0.0	-124.69	0.00	0.00
-0.83	103.72	-3.0	0.0	-124.69	0.00	0.00
0.00	103.72	-3.0	0.0	-124.69	0.00	0.00

Vorverformungen an Ankern / Steifen berücksichtigt

Vorverformungen wurden von "Hand" eingegeben.

Anker/Steife	Tiefe	Vorverformung
[-]	[m]	[m]
1	103.72	-0.0026


  

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 R1	Schnitt 9L	Seite Anlage R1/25
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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Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																																																																																																																																																																																																																																																																																								
<div>Erhöhte aktive Erddruckbeiwerte</div> <div>Beziehung: <math>(1 - \text{Faktor}) \cdot k_{ah} + \text{Faktor} \cdot k_0</math></div> <div>Faktor [-] = 0.50</div> <div>Ersatzerddruck-Beiwert mit <math>\phi = 40^\circ</math></div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> wird angewendet, wenn Kohäsion <math>&lt; 0.0</math>.</div> <div>Ersatzerddruck-Beiwert <math>k_{ah}</math> 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><math>k_{agh}</math></td><td><math>k_{ach}</math></td><td><math>\phi_{i,k}</math></td><td><math>\delta</math></td><td><math>\theta</math></td><td><math>k_{agh}(40^\circ)</math></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 (<math>[g+q],k</math>)</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>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>101.422</td><td>28.663</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>100.212</td><td>50.056</td><td>51.525</td><td>0.00</td><td>0.00</td></tr><tr><td>100.212</td><td>99.949</td><td>51.525</td><td>53.362</td><td>0.00</td><td>0.00</td></tr><tr><td>99.949</td><td>99.070</td><td>53.362</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>96.260</td><td>61.144</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>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><math>k_{pgh}</math></td><td><math>k_{pch}</math></td><td><math>\phi_{i,k}</math></td><td><math>\delta</math></td><td><math>\theta</math></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>-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>101.42</td><td>-13.54</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><tr><td>100.42</td><td>100.21</td><td>-89.35</td><td>-98.28</td></tr><tr><td>100.21</td><td>99.95</td><td>-98.28</td><td>-109.45</td></tr><tr><td>99.95</td><td>99.07</td><td>-109.45</td><td>-146.80</td></tr><tr><td>99.07</td><td>99.04</td><td>-146.80</td><td>-148.07</td></tr></table></div>			Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$	[-]	[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	101.422	28.663	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	100.212	50.056	51.525	0.00	0.00	100.212	99.949	51.525	53.362	0.00	0.00	99.949	99.070	53.362	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	96.260	61.144	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	$k_{pgh}$	$k_{pch}$	$\phi_{i,k}$	$\delta$	$\theta$	[-]	[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	101.42	-13.54	-46.83	101.42	101.22	-46.83	-55.53	101.22	100.42	-55.53	-89.35	100.42	100.21	-89.35	-98.28	100.21	99.95	-98.28	-109.45	99.95	99.07	-109.45	-146.80	99.07	99.04	-146.80	-148.07	<div>Schnitt: Anlage R1 Schnitt 9L</div> <div>Seite Anlage R1/26</div> <div>Kapitel: 5 LF 3 (BS-T, mit Lasten)</div> <div>Archiv Nr.:</div> <div>Vorgang: Genehmigungsstatik</div> <div>Projekt-Nr.: 2004-0025</div>	
Schicht	UK	$k_{agh}$	$k_{ach}$	$\phi_{i,k}$	$\delta$	$\theta$	$k_{agh}(40^\circ)$																																																																																																																																																																																																																																																																																			
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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>99.0498.99-148.07-150.28</div><div>98.9996.26-150.28-266.23</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 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>103.72-90.7-54.9-63.2-124.7</div><div>103.72-90.769.8-63.2</div><div>103.25-103.947.2-35.6</div><div>103.16-106.542.4-31.5</div><div>103.13-107.540.5-30.1</div><div>102.55-124.94.2-16.8</div><div>102.45-127.11.0-16.5</div><div>102.21-131.1-3.3-16.9</div><div>101.42-131.67.9-17.4</div><div>101.22-130.512.5-15.3</div><div>100.42-131.112.7-3.4</div><div>100.21-132.68.1-1.1</div><div>99.95-135.20.00.0</div></div></div></div><div><div>Schnittgrößen ([g+q+w],k)</div><div><div><div>TiefeNQM 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>103.72-78.0-47.0-54.0-106.5</div><div>103.72-78.059.4-54.0</div><div>103.25-89.540.2-30.4</div><div>103.16-91.736.1-27.0</div><div>103.13-92.634.5-25.8</div><div>102.55-107.73.5-14.4</div><div>102.45-109.70.8-14.2</div><div>102.21-113.2-3.0-14.6</div><div>101.42-113.76.8-15.1</div><div>101.22-112.710.8-13.2</div><div>100.42-113.311.0-2.9</div><div>100.21-114.67.1-1.0</div><div>99.95-116.90.00.0</div></div></div></div><div><div>Schnittgrößen (g+w,k)</div><div><div><div>TiefeNQM 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>103.72-78.0-47.0-54.0-106.5</div><div>103.72-78.059.4-54.0</div><div>103.25-89.540.2-30.4</div><div>103.16-91.736.1-27.0</div><div>103.13-92.634.5-25.8</div><div>102.55-107.73.5-14.4</div><div>102.45-109.70.8-14.2</div><div>102.21-113.2-3.0-14.6</div><div>101.42-113.76.8-15.1</div><div>101.22-112.710.8-13.2</div></div></div></div></div>						Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/27	
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><div>100.42-113.311.0-2.9</div><div>100.21-114.67.1-1.0</div><div>99.95-116.90.00.0</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><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>105.50</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>-4.8</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>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>100.21</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.95</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>106.25</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-3.8</div><div>-</div><div>-</div><div>-</div></div><div><div>105.30</div><div>-3.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.25</div><div>-3.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.25</div><div>-3.7</div><div>-</div><div>-</div><div>-</div></div><div><div>105.20</div><div>-3.7</div><div>-</div><div>-</div><div>-</div></div><div><div>104.30</div><div>-3.0</div><div>-</div><div>-</div><div>-</div></div><div><div>104.25</div><div>-3.0</div><div>-</div><div>-</div><div>-</div></div><div><div>104.25</div><div>-3.0</div><div>-</div><div>-</div><div>-</div></div><div><div>104.20</div><div>-2.9</div><div>-</div><div>-</div><div>-</div></div><div><div>103.75</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.67</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.30</div><div>-2.4</div><div>-</div><div>-</div><div>-</div></div><div><div>103.25</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.25</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.20</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.20</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.16</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.16</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.13</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.13</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.08</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-1.9</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-1.9</div><div>0.00</div><div>0.00</div><div>0.00</div></div><div><div>102.55</div><div>-1.9</div><div>0.00</div><div>0.00</div><div>11.73</div></div><div><div>102.50</div><div>-1.9</div><div>0.00</div><div>0.00</div><div>13.02</div></div><div><div>102.50</div><div>-1.9</div><div>5.00</div><div>9.37</div><div>13.02</div></div><div><div>102.45</div><div>-1.8</div><div>5.00</div><div>9.22</div><div>14.31</div></div><div><div>102.45</div><div>-1.8</div><div>2.77</div><div>5.10</div><div>5.10</div></div><div><div>102.40</div><div>-1.8</div><div>2.77</div><div>5.03</div><div>8.49</div></div><div><div>102.25</div><div>-1.7</div><div>10.77</div><div>18.63</div><div>18.63</div></div><div><div>102.21</div><div>-1.7</div><div>10.77</div><div>18.32</div><div>22.01</div></div><div><div>102.21</div><div>-1.7</div><div>12.94</div><div>22.01</div><div>22.01</div></div><div><div>102.16</div><div>-1.7</div><div>12.94</div><div>21.64</div><div>25.39</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage R1 Schnitt 9L</td><td colspan="2">Seite Anlage R1/28</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">5 LF 3 (BS-T, mit Lasten)</td><td colspan="2">Archiv Nr.: 28</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage R1 Schnitt 9L		Seite Anlage R1/28		Kapitel:		5 LF 3 (BS-T, mit Lasten)		Archiv Nr.: 28		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
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Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																																																																																																							
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<table><tr><td>101.47</td><td>-1.3</td><td>50.00</td><td>63.96</td><td>72.73</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>62.58</td><td>76.11</td></tr><tr><td>101.42</td><td>-1.3</td><td>50.00</td><td>62.58</td><td>76.11</td></tr><tr><td>101.37</td><td>-1.2</td><td>50.00</td><td>61.14</td><td>79.64</td></tr><tr><td>101.27</td><td>-1.2</td><td>50.00</td><td>58.27</td><td>86.71</td></tr><tr><td>101.22</td><td>-1.1</td><td>50.00</td><td>56.84</td><td>90.24</td></tr><tr><td>101.22</td><td>-1.1</td><td>50.00</td><td>56.84</td><td>90.24</td></tr><tr><td>101.17</td><td>-1.1</td><td>50.00</td><td>55.41</td><td>93.77</td></tr><tr><td>100.46</td><td>-0.7</td><td>50.00</td><td>35.97</td><td>142.45</td></tr><tr><td>100.42</td><td>-0.7</td><td>50.00</td><td>34.89</td><td>145.19</td></tr><tr><td>100.42</td><td>-0.7</td><td>50.00</td><td>34.89</td><td>145.19</td></tr><tr><td>100.37</td><td>-0.7</td><td>50.00</td><td>33.45</td><td>148.82</td></tr><tr><td>100.26</td><td>-0.6</td><td>50.00</td><td>30.57</td><td>156.08</td></tr><tr><td>100.21</td><td>-0.6</td><td>50.00</td><td>29.14</td><td>159.71</td></tr><tr><td>100.21</td><td>-0.6</td><td>50.00</td><td>29.14</td><td>159.71</td></tr><tr><td>100.16</td><td>-0.6</td><td>50.00</td><td>27.70</td><td>163.34</td></tr><tr><td>100.00</td><td>-0.5</td><td>50.00</td><td>23.39</td><td>174.23</td></tr><tr><td>99.95</td><td>-0.4</td><td>50.00</td><td>21.95</td><td>177.86</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03132624 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 2.60 m Profillänge = 6.30 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 119.21 kN/m G',k = 0.00 kN/m Pv,k = 21.00 kN/m Eav,k = 29.01 kN/m (Eah,k = 164.53 kN/m) Bv,k = 40.32 Summe V,k = 128.90 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 100.83 bis 97.31 m) ==&gt; 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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = 1.000 m²/m/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 137.50 / 1.40 = 98.21 kN/m R,d = Rb,d + Rs1,d = 963.26 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 143.06 - 0.00 + 33.36 + 25.20 = 201.62 kN/m ==&gt; µ = V,d / R,d = 201.62 / 963.26 = 0.21</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>						101.47	-1.3	50.00	63.96	72.73	101.42	-1.3	50.00	62.58	76.11	101.42	-1.3	50.00	62.58	76.11	101.37	-1.2	50.00	61.14	79.64	101.27	-1.2	50.00	58.27	86.71	101.22	-1.1	50.00	56.84	90.24	101.22	-1.1	50.00	56.84	90.24	101.17	-1.1	50.00	55.41	93.77	100.46	-0.7	50.00	35.97	142.45	100.42	-0.7	50.00	34.89	145.19	100.42	-0.7	50.00	34.89	145.19	100.37	-0.7	50.00	33.45	148.82	100.26	-0.6	50.00	30.57	156.08	100.21	-0.6	50.00	29.14	159.71	100.21	-0.6	50.00	29.14	159.71	100.16	-0.6	50.00	27.70	163.34	100.00	-0.5	50.00	23.39	174.23	99.95	-0.4	50.00	21.95	177.86	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	99.95	55.00	s3: Flussskies, -sand
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Statisch geprüft  
für  
Standicherheit  
Dipl.-Ing. A. Forster





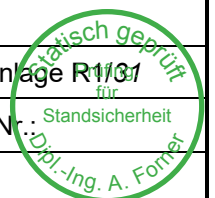
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		-
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div>6 LF 4 (BS-P, mit Lasten)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 05_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 R1 Schnitt 9L		Seite Anlage R1/30
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):																																																																																																																																																																																																																																								
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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<sub>g,k</sub></td><td>M<sub>q,k</sub></td><td>H<sub>g,k</sub></td><td>H<sub>q,k</sub></td><td>V<sub>g,k</sub></td><td>V<sub>q,k</sub></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>-13.40</td><td>0.00</td><td>0.00</td><td>0.00</td><td>21.00</td><td>0.00</td></tr></table>  Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 6.30 m  Bettungsmodule <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>  Ausnutzungsgrad <math>\mu_e = 132.705 / 159.756 = 0.831</math> Bettungslager <math>B_{h,d} = 132.705 \text{ kN/m}</math> Erdwiderstand <math>E_{ph,d} = 159.756 \text{ kN/m}</math>  Anker und Steifen <math>N_{d'}</math> = Bemessungswert (Steifen) mit BS-P (1.275/1.50) <math>N_{w,k}</math> kann Anteil aus Einzelkräften beinhalten. <table><tr><td>Nr.</td><td>y</td><td>Neigung</td><td>Länge</td><td>N<sub>d</sub></td><td>N(g+q+w)<sub>k</sub></td><td>N(g+w)<sub>k</sub></td><td>N<sub>w,k</sub></td><td>EA</td><td>EI</td><td>N<sub>d'</sub></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>-192.27</td><td>-148.42</td><td>-148.42</td><td>-45.43</td><td>3.900E+7</td><td>2.100E+7</td><td>-189.23</td></tr></table> Zusätzlich für Steifen Steife I Vertikallast [kN/m²/m]: 0.00 max M<sub>d</sub> [kN·m/m]: 0.00 gelenkig an Verbauwand angeschlossen gegenüberliegende Seite gelenkig <table><tr><td>x</td><td>y</td><td>w<sub>x,d</sub></td><td>w<sub>y,d</sub></td><td>N<sub>d</sub></td><td>Q<sub>d</sub></td><td>M<sub>d</sub></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>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-7.47</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-6.64</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-5.81</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.98</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-4.15</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-3.32</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-2.49</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-1.66</td><td>103.72</td><td>-3.3</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>-0.83</td><td>103.72</td><td>-3.4</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr><tr><td>0.00</td><td>103.72</td><td>-3.4</td><td>0.0</td><td>-192.64</td><td>0.00</td><td>0.00</td></tr></table>  Vorverformungen an Ankern / Steifen berücksichtigt Vorverformungen wurden von "Hand" eingegeben. Anker/Steife Tiefe Vorverformung <table><tr><td>[-]</td><td>[m]</td><td>[m]</td></tr><tr><td>1</td><td>103.72</td><td>-0.0026</td></tr></table>  Bodenkennwerte <table><tr><td>Schicht</td><td>UK</td><td>gam<sub>k</sub></td><td>gam'<sub>k</sub></td><td>phi<sub>k</sub></td><td>c(pas)<sub>k</sub></td><td>c(akt)<sub>k</sub></td><td>d(p)/phi</td><td>d(a)/phi</td><td>qc</td><td>cu<sub>k</sub></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>			Nr.	Tiefe	M <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>	[-]	[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	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	Nr.	y	Neigung	Länge	N <sub>d</sub>	N(g+q+w) <sub>k</sub>	N(g+w) <sub>k</sub>	N <sub>w,k</sub>	EA	EI	N <sub>d'</sub>	[-]	[mNHN]	[°]	[m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN·m²/m]	[kN/m]	1	103.72	0.00	8.30	-192.27	-148.42	-148.42	-45.43	3.900E+7	2.100E+7	-189.23	x	y	w <sub>x,d</sub>	w <sub>y,d</sub>	N <sub>d</sub>	Q <sub>d</sub>	M <sub>d</sub>	[m]	[m]	[mm]	[mm]	[kN/m]	[kN/m]	[kN·m/m]	-8.30	103.72	-3.3	0.0	-192.64	0.00	0.00	-7.47	103.72	-3.3	0.0	-192.64	0.00	0.00	-7.47	103.72	-3.3	0.0	-192.64	0.00	0.00	-6.64	103.72	-3.3	0.0	-192.64	0.00	0.00	-5.81	103.72	-3.3	0.0	-192.64	0.00	0.00	-4.98	103.72	-3.3	0.0	-192.64	0.00	0.00	-4.15	103.72	-3.3	0.0	-192.64	0.00	0.00	-3.32	103.72	-3.3	0.0	-192.64	0.00	0.00	-2.49	103.72	-3.3	0.0	-192.64	0.00	0.00	-1.66	103.72	-3.3	0.0	-192.64	0.00	0.00	-0.83	103.72	-3.4	0.0	-192.64	0.00	0.00	0.00	103.72	-3.4	0.0	-192.64	0.00	0.00	[-]	[m]	[m]	1	103.72	-0.0026	Schicht	UK	gam <sub>k</sub>	gam' <sub>k</sub>	phi <sub>k</sub>	c(pas) <sub>k</sub>	c(akt) <sub>k</sub>	d(p)/phi	d(a)/phi	qc	cu <sub>k</sub>	[-]	[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
Nr.	Tiefe	M <sub>g,k</sub>	M <sub>q,k</sub>	H <sub>g,k</sub>	H <sub>q,k</sub>	V <sub>g,k</sub>	V <sub>q,k</sub>																																																																																																																																																																																																																																			
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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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<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 &lt;&gt; 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 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>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>101.422</td><td>33.374</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>100.212</td><td>54.704</td><td>55.920</td><td>0.00</td><td>0.00</td></tr><tr><td>100.212</td><td>99.949</td><td>55.920</td><td>57.441</td><td>0.00</td><td>0.00</td></tr><tr><td>99.949</td><td>99.070</td><td>57.441</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>96.260</td><td>64.068</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 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>103.13</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>101.42</td><td>-23.90</td><td>-54.81</td></tr><tr><td>101.42</td><td>101.22</td><td>-54.81</td><td>-62.89</td></tr><tr><td>101.22</td><td>100.42</td><td>-62.89</td><td>-94.29</td></tr><tr><td>100.42</td><td>100.21</td><td>-94.29</td><td>-102.59</td></tr><tr><td>100.21</td><td>99.95</td><td>-102.59</td><td>-112.96</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	101.422	33.374	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	100.212	54.704	55.920	0.00	0.00	100.212	99.949	55.920	57.441	0.00	0.00	99.949	99.070	57.441	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	96.260	64.068	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	101.42	-23.90	-54.81	101.42	101.22	-54.81	-62.89	101.22	100.42	-62.89	-94.29	100.42	100.21	-94.29	-102.59	100.21	99.95	-102.59	-112.96	<div>Statisch geprüft</div> <div>für</div> <div>Standicherheit</div> <div>Dipl.-Ing. A. Forner</div>	Seite Anlage R1/32
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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>99.9599.07-112.96-147.64</div><div>99.0799.04-147.64-148.82</div><div>99.0498.99-148.82-150.87</div><div>98.9996.26-150.87-258.54</div><div>96.2694.13-258.54-342.60</div><div>94.1391.32-342.60-453.50</div><div>91.3280.00-453.50-900.26</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>105.91-15.1-19.2-3.2</div><div>105.76-20.8-24.8-6.6</div><div>105.50-28.5-28.6-13.6</div><div>105.50-56.9-28.6-31.7</div><div>105.25-64.4-33.2-39.4</div><div>104.25-94.8-66.8-87.7</div><div>103.72-111.8-93.2-129.8-192.6</div><div>103.72-111.899.4-129.8</div><div>103.25-127.470.9-89.6</div><div>103.16-130.464.9-83.5</div><div>103.13-131.662.5-81.3</div><div>102.55-152.017.5-57.7</div><div>102.45-154.413.2-56.2</div><div>102.21-156.413.1-53.1</div><div>101.42-152.631.5-35.9</div><div>101.22-152.033.5-29.2</div><div>100.42-155.721.2-5.4</div><div>100.21-158.113.0-1.8</div><div>99.95-162.00.00.0</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>105.91-11.9-15.1-2.5</div><div>105.76-16.3-19.4-5.2</div><div>105.50-22.4-22.5-10.7</div><div>105.50-43.4-22.5-24.1</div><div>105.25-49.3-26.1-30.1</div><div>104.25-73.1-51.9-67.8</div><div>103.72-86.5-72.2-100.5-148.4</div><div>103.72-86.576.2-100.5</div><div>103.25-98.754.4-69.6</div><div>103.16-101.049.8-64.9</div><div>103.13-102.048.0-63.2</div><div>102.55-118.013.6-45.1</div><div>102.45-120.110.2-43.9</div><div>102.21-121.610.1-41.5</div><div>101.42-118.724.6-28.1</div><div>101.22-118.326.2-22.9</div><div>100.42-121.116.6-4.2</div><div>100.21-123.110.2-1.4</div><div>99.95-126.20.00.0</div></div></div><div><div>Schnittgrößen (g+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>105.91-11.9-15.1-2.5</div><div>105.76-16.3-19.4-5.2</div><div>105.50-22.4-22.5-10.7</div><div>105.50-43.4-22.5-24.1</div><div>105.25-49.3-26.1-30.1</div><div>104.25-73.1-51.9-67.8</div><div>103.72-86.5-72.2-100.5-148.4</div><div>103.72-86.576.2-100.5</div></div></div></div>					
Schnitt: Anlage R1 Schnitt 9L				Seite Anlage R1/33	
Kapitel: 6 LF 4 (BS-P, mit Lasten)				Archiv Nr.:	
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025			

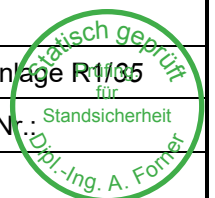


Baumaßnahme:		Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																			
Auftraggeber:		Stadtverwaltung Leipzig																					
Verfasser:		INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																			
<div><div><div>103.25</div><div>-98.7</div><div>54.4</div><div>-69.6</div></div><div><div>103.16</div><div>-101.0</div><div>49.8</div><div>-64.9</div></div><div><div>103.13</div><div>-102.0</div><div>48.0</div><div>-63.2</div></div><div><div>102.55</div><div>-118.0</div><div>13.6</div><div>-45.1</div></div><div><div>102.45</div><div>-120.1</div><div>10.2</div><div>-43.9</div></div><div><div>102.21</div><div>-121.6</div><div>10.1</div><div>-41.5</div></div><div><div>101.42</div><div>-118.7</div><div>24.6</div><div>-28.1</div></div><div><div>101.22</div><div>-118.3</div><div>26.2</div><div>-22.9</div></div><div><div>100.42</div><div>-121.1</div><div>16.6</div><div>-4.2</div></div><div><div>100.21</div><div>-123.1</div><div>10.2</div><div>-1.4</div></div><div><div>99.95</div><div>-126.2</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>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>-5.0</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>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>100.21</div><div>0.0</div><div>0.0</div><div>0.0</div><div></div></div><div><div>99.95</div><div>0.0</div><div>0.0</div><div>0.0</div><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>106.25</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.25</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>106.20</div><div>-4.9</div><div>-</div><div>-</div><div>-</div></div><div><div>105.91</div><div>-4.6</div><div>-</div><div>-</div><div>-</div></div><div><div>105.86</div><div>-4.6</div><div>-</div><div>-</div><div>-</div></div><div><div>105.81</div><div>-4.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.76</div><div>-4.5</div><div>-</div><div>-</div><div>-</div></div><div><div>105.75</div><div>-4.4</div><div>-</div><div>-</div><div>-</div></div><div><div>105.55</div><div>-4.3</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.50</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.45</div><div>-4.2</div><div>-</div><div>-</div><div>-</div></div><div><div>105.30</div><div>-4.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.25</div><div>-4.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.25</div><div>-4.0</div><div>-</div><div>-</div><div>-</div></div><div><div>105.20</div><div>-3.9</div><div>-</div><div>-</div><div>-</div></div><div><div>104.30</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>104.25</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>104.25</div><div>-3.1</div><div>-</div><div>-</div><div>-</div></div><div><div>104.20</div><div>-3.0</div><div>-</div><div>-</div><div>-</div></div><div><div>103.75</div><div>-2.7</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.72</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.67</div><div>-2.6</div><div>-</div><div>-</div><div>-</div></div><div><div>103.30</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.25</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.25</div><div>-2.3</div><div>-</div><div>-</div><div>-</div></div><div><div>103.20</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>103.20</div><div>-2.2</div><div>-</div><div>-</div><div>-</div></div><div><div>102.60</div><div>-1.8</div><div>-</div><div>-</div><div>-</div></div><div><div>102.55</div><div>-1.8</div><div>0.00</div><div>0.00</div><div>0.00</div></div></div></div> <tr><td colspan="2">Schnitt:</td><td colspan="2">Anlage R1 Schnitt 9L</td><td colspan="2">Seite Anlage R1/34</td></tr> <tr><td colspan="2">Kapitel:</td><td colspan="2">6 LF 4 (BS-P, mit Lasten)</td><td colspan="2">Archiv Nr.: 2004-0025</td></tr> <tr><td colspan="2">Vorgang:</td><td colspan="2">Genehmigungsstatik</td><td colspan="2">Projekt-Nr.: 2004-0025</td></tr>						Schnitt:		Anlage R1 Schnitt 9L		Seite Anlage R1/34		Kapitel:		6 LF 4 (BS-P, mit Lasten)		Archiv Nr.: 2004-0025		Vorgang:		Genehmigungsstatik		Projekt-Nr.: 2004-0025	
Schnitt:		Anlage R1 Schnitt 9L		Seite Anlage R1/34																			
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																																																																																																																																																								
<table><tr><td>102.55</td><td>-1.8</td><td>0.00</td><td>0.00</td><td>21.74</td></tr><tr><td>102.50</td><td>-1.8</td><td>0.00</td><td>0.00</td><td>23.03</td></tr><tr><td>102.50</td><td>-1.8</td><td>5.00</td><td>8.85</td><td>23.03</td></tr><tr><td>102.45</td><td>-1.7</td><td>5.00</td><td>8.69</td><td>24.32</td></tr><tr><td>102.45</td><td>-1.7</td><td>14.35</td><td>24.92</td><td>24.92</td></tr><tr><td>102.40</td><td>-1.7</td><td>14.35</td><td>24.47</td><td>28.30</td></tr><tr><td>102.25</td><td>-1.6</td><td>23.84</td><td>38.45</td><td>38.45</td></tr><tr><td>102.21</td><td>-1.6</td><td>23.84</td><td>37.72</td><td>41.83</td></tr><tr><td>102.21</td><td>-1.6</td><td>26.44</td><td>41.83</td><td>41.83</td></tr><tr><td>102.16</td><td>-1.6</td><td>26.44</td><td>41.02</td><td>45.21</td></tr><tr><td>101.47</td><td>-1.1</td><td>50.00</td><td>56.96</td><td>92.54</td></tr><tr><td>101.42</td><td>-1.1</td><td>50.00</td><td>55.54</td><td>95.93</td></tr><tr><td>101.42</td><td>-1.1</td><td>50.00</td><td>55.54</td><td>95.93</td></tr><tr><td>101.37</td><td>-1.1</td><td>50.00</td><td>54.07</td><td>99.46</td></tr><tr><td>101.27</td><td>-1.0</td><td>50.00</td><td>51.13</td><td>106.53</td></tr><tr><td>101.22</td><td>-1.0</td><td>50.00</td><td>49.67</td><td>110.06</td></tr><tr><td>101.22</td><td>-1.0</td><td>50.00</td><td>49.67</td><td>110.06</td></tr><tr><td>101.17</td><td>-1.0</td><td>50.00</td><td>48.21</td><td>113.59</td></tr><tr><td>100.46</td><td>-0.6</td><td>50.00</td><td>28.52</td><td>162.27</td></tr><tr><td>100.42</td><td>-0.5</td><td>50.00</td><td>27.43</td><td>165.01</td></tr><tr><td>100.42</td><td>-0.5</td><td>50.00</td><td>27.43</td><td>165.01</td></tr><tr><td>100.37</td><td>-0.5</td><td>50.00</td><td>25.98</td><td>168.64</td></tr><tr><td>100.26</td><td>-0.5</td><td>50.00</td><td>23.08</td><td>175.90</td></tr><tr><td>100.21</td><td>-0.4</td><td>50.00</td><td>21.63</td><td>179.53</td></tr><tr><td>100.21</td><td>-0.4</td><td>50.00</td><td>21.63</td><td>179.53</td></tr><tr><td>100.16</td><td>-0.4</td><td>50.00</td><td>20.18</td><td>183.16</td></tr><tr><td>100.00</td><td>-0.3</td><td>50.00</td><td>15.83</td><td>194.05</td></tr><tr><td>99.95</td><td>-0.3</td><td>50.00</td><td>14.38</td><td>197.68</td></tr></table> <p>Verdrehung (Theoretischer Fußpunkt) [°] phi,[g+q],k: -0.03159089 Theoretischer Fußpunkt = 99.949 m</p> <p>Einbindetiefe tg = 2.60 m Profillänge = 6.30 m</p> <p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: Pv,k + G,k - G',k + Eav,k &gt;= Bv,k G,k = 119.21 kN/m G',k = 0.00 kN/m Pv,k = 21.00 kN/m Eav,k = 36.64 kN/m (Eah,k = 209.10 kN/m) Bv,k = 41.36 Summe V,k = 135.49 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 100.83 bis 97.31 m) ==&gt; 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>99.95</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></table> <p>Mantelfläche bis 99.95 m = 1.000 m²/m ==&gt; Rs1,d Rs1,d = eta(s) · Rs1,k / gamma(qs,k) = 1.000 · 137.50 / 1.40 = 98.21 kN/m Rd = Rb,d + Rs1,d = 963.26 kN/m</p> <p>Einwirkungen V,d = G,d - G',k + Eav,d + Pv,d = 160.94 - 0.00 + 46.72 + 28.35 = 236.01 kN/m ==&gt; µ = V,d / Rd = 236.01 / 963.26 = 0.25</p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			102.55	-1.8	0.00	0.00	21.74	102.50	-1.8	0.00	0.00	23.03	102.50	-1.8	5.00	8.85	23.03	102.45	-1.7	5.00	8.69	24.32	102.45	-1.7	14.35	24.92	24.92	102.40	-1.7	14.35	24.47	28.30	102.25	-1.6	23.84	38.45	38.45	102.21	-1.6	23.84	37.72	41.83	102.21	-1.6	26.44	41.83	41.83	102.16	-1.6	26.44	41.02	45.21	101.47	-1.1	50.00	56.96	92.54	101.42	-1.1	50.00	55.54	95.93	101.42	-1.1	50.00	55.54	95.93	101.37	-1.1	50.00	54.07	99.46	101.27	-1.0	50.00	51.13	106.53	101.22	-1.0	50.00	49.67	110.06	101.22	-1.0	50.00	49.67	110.06	101.17	-1.0	50.00	48.21	113.59	100.46	-0.6	50.00	28.52	162.27	100.42	-0.5	50.00	27.43	165.01	100.42	-0.5	50.00	27.43	165.01	100.37	-0.5	50.00	25.98	168.64	100.26	-0.5	50.00	23.08	175.90	100.21	-0.4	50.00	21.63	179.53	100.21	-0.4	50.00	21.63	179.53	100.16	-0.4	50.00	20.18	183.16	100.00	-0.3	50.00	15.83	194.05	99.95	-0.3	50.00	14.38	197.68	von	bis	qs,k [kN/m²]	Bezeichnung	102.55	102.45	0.00	S2: Auelehm	102.45	99.95	55.00	s3: Flussskies, -sand
102.55	-1.8	0.00	0.00	21.74																																																																																																																																																						
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102.45	-1.7	5.00	8.69	24.32																																																																																																																																																						
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102.21	-1.6	23.84	37.72	41.83																																																																																																																																																						
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101.42	-1.1	50.00	55.54	95.93																																																																																																																																																						
101.37	-1.1	50.00	54.07	99.46																																																																																																																																																						
101.27	-1.0	50.00	51.13	106.53																																																																																																																																																						
101.22	-1.0	50.00	49.67	110.06																																																																																																																																																						
101.22	-1.0	50.00	49.67	110.06																																																																																																																																																						
101.17	-1.0	50.00	48.21	113.59																																																																																																																																																						
100.46	-0.6	50.00	28.52	162.27																																																																																																																																																						
100.42	-0.5	50.00	27.43	165.01																																																																																																																																																						
100.42	-0.5	50.00	27.43	165.01																																																																																																																																																						
100.37	-0.5	50.00	25.98	168.64																																																																																																																																																						
100.26	-0.5	50.00	23.08	175.90																																																																																																																																																						
100.21	-0.4	50.00	21.63	179.53																																																																																																																																																						
100.21	-0.4	50.00	21.63	179.53																																																																																																																																																						
100.16	-0.4	50.00	20.18	183.16																																																																																																																																																						
100.00	-0.3	50.00	15.83	194.05																																																																																																																																																						
99.95	-0.3	50.00	14.38	197.68																																																																																																																																																						
von	bis	qs,k [kN/m²]	Bezeichnung																																																																																																																																																							
102.55	102.45	0.00	S2: Auelehm																																																																																																																																																							
102.45	99.95	55.00	s3: Flussskies, -sand																																																																																																																																																							
Schnitt: Anlage R1 Schnitt 9L		Seite Anlage R1/35																																																																																																																																																								
Kapitel: 6 LF 4 (BS-P, mit Lasten)		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																																												
<div>Anlage S1 Schnitt 10</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 9</div> <div>Datei: 00_BS 10_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 = 108.74 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m</div> <div>Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.36 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) = 105.50 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>Flächenlast p = 10.00 kN/m² als ständige Last</div> <div>Kraftränder</div> <div>Momente (entgegen dem Uhrzeigersinn positiv)</div> <div>Horizontalkräfte (nach Erdseite positiv)</div> <div>Vertikalkräfte (nach unten positiv)</div> <table><thead><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></thead><tbody><tr><td>1</td><td>107.67</td><td>-23.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>36.00</td><td>0.00</td></tr></tbody></table> <div>Art des Fußlagers:</div> <div>Profillänge automatisch und Fuß gebettet</div> <div>Profillänge = 10.20 m</div> <div>Bettungsmodule</div> <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>105.36</td><td>105.25</td><td>5.000</td><td>5.000</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></tbody></table> <div>Ausnutzungsgrad mue = 472.671 / 493.312 = 0.958</div> <div>Bettungslager Bh,d = 472.671 kN/m</div> <div>Erdwiderstand Eph,d = 493.312 kN/m</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	107.67	-23.00	0.00	0.00	0.00	36.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	105.36	105.25	5.000	5.000	105.25	102.45	5.000	5.000	102.45	80.00	50.000	50.000
Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k																																							
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Schnitt: Anlage S1 Schnitt 10		Seite Anlage S1/11																																												
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 119.																																												
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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<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 &gt; 0.0.</div> <div>Ersatzerddruck-Beiwert kah 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>105.25</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>108.740</td><td>107.740</td><td>3.897</td><td>11.301</td><td>0.00</td><td>0.00</td></tr><tr><td>107.740</td><td>107.670</td><td>11.301</td><td>11.819</td><td>0.00</td><td>0.00</td></tr><tr><td>107.670</td><td>106.690</td><td>11.819</td><td>19.075</td><td>0.00</td><td>0.00</td></tr><tr><td>106.690</td><td>105.692</td><td>19.075</td><td>26.464</td><td>0.00</td><td>0.00</td></tr><tr><td>105.692</td><td>105.500</td><td>26.464</td><td>27.886</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.360</td><td>27.886</td><td>28.431</td><td>0.00</td><td>0.00</td></tr><tr><td>105.360</td><td>105.250</td><td>28.431</td><td>28.860</td><td>0.00</td><td>0.00</td></tr><tr><td>105.250</td><td>104.700</td><td>35.410</td><td>37.750</td><td>0.00</td><td>0.00</td></tr><tr><td>104.700</td><td>103.700</td><td>37.750</td><td>42.005</td><td>0.00</td><td>0.00</td></tr><tr><td>103.700</td><td>102.700</td><td>42.005</td><td>46.260</td><td>0.00</td><td>0.00</td></tr><tr><td>102.700</td><td>102.450</td><td>46.260</td><td>47.324</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.400</td><td>34.903</td><td>35.108</td><td>0.00</td><td>0.00</td></tr><tr><td>102.400</td><td>101.848</td><td>35.108</td><td>37.371</td><td>0.00</td><td>0.00</td></tr><tr><td>101.848</td><td>101.698</td><td>37.371</td><td>37.988</td><td>0.00</td><td>0.00</td></tr><tr><td>101.698</td><td>100.695</td><td>37.988</td><td>42.101</td><td>0.00</td><td>0.00</td></tr><tr><td>100.695</td><td>100.244</td><td>42.101</td><td>43.952</td><td>0.00</td><td>0.00</td></tr><tr><td>100.244</td><td>99.692</td><td>43.952</td><td>46.215</td><td>0.00</td><td>0.00</td></tr><tr><td>99.692</td><td>98.739</td><td>46.215</td><td>50.122</td><td>0.00</td><td>0.00</td></tr><tr><td>98.739</td><td>98.539</td><td>50.122</td><td>50.945</td><td>0.00</td><td>0.00</td></tr><tr><td>98.539</td><td>80.000</td><td>50.945</td><td>126.983</td><td>0.00</td><td>0.00</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>108.74</td><td>105.36</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>105.50</td><td>105.36</td><td>0.00</td><td>0.00</td></tr><tr><td>105.36</td><td>105.25</td><td>0.00</td><td>-3.39</td></tr><tr><td>105.25</td><td>104.70</td><td>-9.27</td><td>-18.00</td></tr><tr><td>104.70</td><td>103.70</td><td>-18.00</td><td>-33.87</td></tr><tr><td>103.70</td><td>102.70</td><td>-33.87</td><td>-49.74</td></tr><tr><td>102.70</td><td>102.45</td><td>-49.74</td><td>-53.70</td></tr><tr><td>102.45</td><td>102.40</td><td>-92.03</td><td>-94.16</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]	108.740	107.740	3.897	11.301	0.00	0.00	107.740	107.670	11.301	11.819	0.00	0.00	107.670	106.690	11.819	19.075	0.00	0.00	106.690	105.692	19.075	26.464	0.00	0.00	105.692	105.500	26.464	27.886	0.00	0.00	105.500	105.360	27.886	28.431	0.00	0.00	105.360	105.250	28.431	28.860	0.00	0.00	105.250	104.700	35.410	37.750	0.00	0.00	104.700	103.700	37.750	42.005	0.00	0.00	103.700	102.700	42.005	46.260	0.00	0.00	102.700	102.450	46.260	47.324	0.00	0.00	102.450	102.400	34.903	35.108	0.00	0.00	102.400	101.848	35.108	37.371	0.00	0.00	101.848	101.698	37.371	37.988	0.00	0.00	101.698	100.695	37.988	42.101	0.00	0.00	100.695	100.244	42.101	43.952	0.00	0.00	100.244	99.692	43.952	46.215	0.00	0.00	99.692	98.739	46.215	50.122	0.00	0.00	98.739	98.539	50.122	50.945	0.00	0.00	98.539	80.000	50.945	126.983	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.74	105.36	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]	105.50	105.36	0.00	0.00	105.36	105.25	0.00	-3.39	105.25	104.70	-9.27	-18.00	104.70	103.70	-18.00	-33.87	103.70	102.70	-33.87	-49.74	102.70	102.45	-49.74	-53.70	102.45	102.40	-92.03	-94.16	<div><div>statisch geprüft</div><div>für</div><div>Standssicherheit</div><div>Dipl.-Ing. A. Forner</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																																																																																																																																																																																																																																																																																																																
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108.740	107.740	3.897	11.301	0.00	0.00																																																																																																																																																																																																																																																																																																																					
107.740	107.670	11.301	11.819	0.00	0.00																																																																																																																																																																																																																																																																																																																					
107.670	106.690	11.819	19.075	0.00	0.00																																																																																																																																																																																																																																																																																																																					
106.690	105.692	19.075	26.464	0.00	0.00																																																																																																																																																																																																																																																																																																																					
105.692	105.500	26.464	27.886	0.00	0.00																																																																																																																																																																																																																																																																																																																					
105.500	105.360	27.886	28.431	0.00	0.00																																																																																																																																																																																																																																																																																																																					
105.360	105.250	28.431	28.860	0.00	0.00																																																																																																																																																																																																																																																																																																																					
105.250	104.700	35.410	37.750	0.00	0.00																																																																																																																																																																																																																																																																																																																					
104.700	103.700	37.750	42.005	0.00	0.00																																																																																																																																																																																																																																																																																																																					
103.700	102.700	42.005	46.260	0.00	0.00																																																																																																																																																																																																																																																																																																																					
102.700	102.450	46.260	47.324	0.00	0.00																																																																																																																																																																																																																																																																																																																					
102.450	102.400	34.903	35.108	0.00	0.00																																																																																																																																																																																																																																																																																																																					
102.400	101.848	35.108	37.371	0.00	0.00																																																																																																																																																																																																																																																																																																																					
101.848	101.698	37.371	37.988	0.00	0.00																																																																																																																																																																																																																																																																																																																					
101.698	100.695	37.988	42.101	0.00	0.00																																																																																																																																																																																																																																																																																																																					
100.695	100.244	42.101	43.952	0.00	0.00																																																																																																																																																																																																																																																																																																																					
100.244	99.692	43.952	46.215	0.00	0.00																																																																																																																																																																																																																																																																																																																					
99.692	98.739	46.215	50.122	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.739	98.539	50.122	50.945	0.00	0.00																																																																																																																																																																																																																																																																																																																					
98.539	80.000	50.945	126.983	0.00	0.00																																																																																																																																																																																																																																																																																																																					
w(oben)	w(unten)	z(oben)	z(unten)																																																																																																																																																																																																																																																																																																																							
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0.00	0.00	108.74	105.36																																																																																																																																																																																																																																																																																																																							
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																																																																																																																																																																																																																																																																																																																				
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105.50	105.36	0.00	0.00																																																																																																																																																																																																																																																																																																																							
105.36	105.25	0.00	-3.39																																																																																																																																																																																																																																																																																																																							
105.25	104.70	-9.27	-18.00																																																																																																																																																																																																																																																																																																																							
104.70	103.70	-18.00	-33.87																																																																																																																																																																																																																																																																																																																							
103.70	102.70	-33.87	-49.74																																																																																																																																																																																																																																																																																																																							
102.70	102.45	-49.74	-53.70																																																																																																																																																																																																																																																																																																																							
102.45	102.40	-92.03	-94.16																																																																																																																																																																																																																																																																																																																							
Schnitt: Anlage S1	Schnitt 10	Seite Anlage S1/2																																																																																																																																																																																																																																																																																																																								
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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>102.40</td><td>101.85</td><td>-94.16</td><td>-117.60</td></tr> <tr><td>101.85</td><td>101.70</td><td>-117.60</td><td>-124.00</td></tr> <tr><td>101.70</td><td>100.69</td><td>-124.00</td><td>-166.62</td></tr> <tr><td>100.69</td><td>100.24</td><td>-166.62</td><td>-185.80</td></tr> <tr><td>100.24</td><td>99.69</td><td>-185.80</td><td>-209.24</td></tr> <tr><td>99.69</td><td>98.74</td><td>-209.24</td><td>-249.74</td></tr> <tr><td>98.74</td><td>98.54</td><td>-249.74</td><td>-258.26</td></tr> <tr><td>98.54</td><td>80.00</td><td>-258.26</td><td>-1046.20</td></tr> </table> <p>Schnittgrößen (Bemessungswerte)</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>108.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>107.74</td><td>-24.9</td><td>-8.7</td><td>-3.7</td></tr> <tr><td>107.67</td><td>-26.8</td><td>-9.7</td><td>-4.3</td></tr> <tr><td>107.67</td><td>-70.0</td><td>-9.7</td><td>-31.9</td></tr> <tr><td>106.69</td><td>-97.7</td><td>-27.1</td><td>-49.2</td></tr> <tr><td>105.69</td><td>-128.9</td><td>-53.2</td><td>-88.6</td></tr> <tr><td>105.50</td><td>-135.3</td><td>-59.2</td><td>-99.4</td></tr> <tr><td>105.36</td><td>-140.0</td><td>-63.7</td><td>-108.0</td></tr> <tr><td>105.25</td><td>-142.9</td><td>-67.2</td><td>-115.2</td></tr> <tr><td>104.70</td><td>-151.3</td><td>-76.8</td><td>-155.1</td></tr> <tr><td>103.70</td><td>-160.3</td><td>-75.4</td><td>-233.2</td></tr> <tr><td>102.70</td><td>-169.0</td><td>-77.4</td><td>-307.6</td></tr> <tr><td>102.45</td><td>-172.0</td><td>-81.6</td><td>-327.5</td></tr> <tr><td>102.40</td><td>-172.4</td><td>-81.8</td><td>-331.6</td></tr> <tr><td>101.85</td><td>-142.0</td><td>1.9</td><td>-354.6</td></tr> <tr><td>101.70</td><td>-132.0</td><td>28.6</td><td>-352.3</td></tr> <tr><td>100.69</td><td>-87.8</td><td>148.6</td><td>-252.1</td></tr> <tr><td>100.24</td><td>-84.0</td><td>160.5</td><td>-181.4</td></tr> <tr><td>99.69</td><td>-91.2</td><td>143.1</td><td>-96.1</td></tr> <tr><td>98.74</td><td>-90.0</td><td>35.0</td><td>-3.6</td></tr> <tr><td>98.54</td><td>-85.0</td><td>0.0</td><td>0.0</td></tr> </table> <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>108.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>107.74</td><td>-21.7</td><td>-7.6</td><td>-3.2</td></tr> <tr><td>107.67</td><td>-23.3</td><td>-8.4</td><td>-3.7</td></tr> <tr><td>107.67</td><td>-59.3</td><td>-8.4</td><td>-26.7</td></tr> <tr><td>106.69</td><td>-83.4</td><td>-23.5</td><td>-41.8</td></tr> <tr><td>105.69</td><td>-110.5</td><td>-46.3</td><td>-76.0</td></tr> <tr><td>105.50</td><td>-116.1</td><td>-51.5</td><td>-85.4</td></tr> <tr><td>105.36</td><td>-120.1</td><td>-55.4</td><td>-92.9</td></tr> <tr><td>105.25</td><td>-122.7</td><td>-58.4</td><td>-99.2</td></tr> <tr><td>104.70</td><td>-130.0</td><td>-66.8</td><td>-133.9</td></tr> <tr><td>103.70</td><td>-137.9</td><td>-65.6</td><td>-201.8</td></tr> <tr><td>102.70</td><td>-145.5</td><td>-67.5</td><td>-266.6</td></tr> <tr><td>102.45</td><td>-148.0</td><td>-71.1</td><td>-283.9</td></tr> <tr><td>102.40</td><td>-148.4</td><td>-71.3</td><td>-287.5</td></tr> <tr><td>101.85</td><td>-122.0</td><td>1.4</td><td>-307.6</td></tr> <tr><td>101.70</td><td>-113.4</td><td>24.6</td><td>-305.7</td></tr> <tr><td>100.69</td><td>-74.9</td><td>128.9</td><td>-218.8</td></tr> <tr><td>100.24</td><td>-71.6</td><td>139.3</td><td>-157.5</td></tr> <tr><td>99.69</td><td>-77.9</td><td>124.2</td><td>-83.4</td></tr> <tr><td>98.74</td><td>-76.9</td><td>30.4</td><td>-3.1</td></tr> <tr><td>98.54</td><td>-72.6</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>108.74</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>107.74</td><td>-21.7</td><td>-7.6</td><td>-3.2</td></tr> <tr><td>107.67</td><td>-23.3</td><td>-8.4</td><td>-3.7</td></tr> <tr><td>107.67</td><td>-59.3</td><td>-8.4</td><td>-26.7</td></tr> <tr><td>106.69</td><td>-83.4</td><td>-23.5</td><td>-41.8</td></tr> <tr><td>105.69</td><td>-110.5</td><td>-46.3</td><td>-76.0</td></tr> <tr><td>105.50</td><td>-116.1</td><td>-51.5</td><td>-85.4</td></tr> <tr><td>105.36</td><td>-120.1</td><td>-55.4</td><td>-92.9</td></tr> <tr><td>105.25</td><td>-122.7</td><td>-58.4</td><td>-99.2</td></tr> </table>				102.40	101.85	-94.16	-117.60	101.85	101.70	-117.60	-124.00	101.70	100.69	-124.00	-166.62	100.69	100.24	-166.62	-185.80	100.24	99.69	-185.80	-209.24	99.69	98.74	-209.24	-249.74	98.74	98.54	-249.74	-258.26	98.54	80.00	-258.26	-1046.20	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	108.74	0.0	0.0	0.0	107.74	-24.9	-8.7	-3.7	107.67	-26.8	-9.7	-4.3	107.67	-70.0	-9.7	-31.9	106.69	-97.7	-27.1	-49.2	105.69	-128.9	-53.2	-88.6	105.50	-135.3	-59.2	-99.4	105.36	-140.0	-63.7	-108.0	105.25	-142.9	-67.2	-115.2	104.70	-151.3	-76.8	-155.1	103.70	-160.3	-75.4	-233.2	102.70	-169.0	-77.4	-307.6	102.45	-172.0	-81.6	-327.5	102.40	-172.4	-81.8	-331.6	101.85	-142.0	1.9	-354.6	101.70	-132.0	28.6	-352.3	100.69	-87.8	148.6	-252.1	100.24	-84.0	160.5	-181.4	99.69	-91.2	143.1	-96.1	98.74	-90.0	35.0	-3.6	98.54	-85.0	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	108.74	0.0	0.0	0.0	107.74	-21.7	-7.6	-3.2	107.67	-23.3	-8.4	-3.7	107.67	-59.3	-8.4	-26.7	106.69	-83.4	-23.5	-41.8	105.69	-110.5	-46.3	-76.0	105.50	-116.1	-51.5	-85.4	105.36	-120.1	-55.4	-92.9	105.25	-122.7	-58.4	-99.2	104.70	-130.0	-66.8	-133.9	103.70	-137.9	-65.6	-201.8	102.70	-145.5	-67.5	-266.6	102.45	-148.0	-71.1	-283.9	102.40	-148.4	-71.3	-287.5	101.85	-122.0	1.4	-307.6	101.70	-113.4	24.6	-305.7	100.69	-74.9	128.9	-218.8	100.24	-71.6	139.3	-157.5	99.69	-77.9	124.2	-83.4	98.74	-76.9	30.4	-3.1	98.54	-72.6	0.0	0.0	Tiefe	N	Q	M	[mNHN]	[kN/m]	[kN/m]	[kN·m/m]	108.74	0.0	0.0	0.0	107.74	-21.7	-7.6	-3.2	107.67	-23.3	-8.4	-3.7	107.67	-59.3	-8.4	-26.7	106.69	-83.4	-23.5	-41.8	105.69	-110.5	-46.3	-76.0	105.50	-116.1	-51.5	-85.4	105.36	-120.1	-55.4	-92.9	105.25	-122.7	-58.4	-99.2
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105.36	-140.0	-63.7	-108.0																																																																																																																																																																																																																																																																				
105.25	-142.9	-67.2	-115.2																																																																																																																																																																																																																																																																				
104.70	-151.3	-76.8	-155.1																																																																																																																																																																																																																																																																				
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102.70	-169.0	-77.4	-307.6																																																																																																																																																																																																																																																																				
102.45	-172.0	-81.6	-327.5																																																																																																																																																																																																																																																																				
102.40	-172.4	-81.8	-331.6																																																																																																																																																																																																																																																																				
101.85	-142.0	1.9	-354.6																																																																																																																																																																																																																																																																				
101.70	-132.0	28.6	-352.3																																																																																																																																																																																																																																																																				
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99.69	-91.2	143.1	-96.1																																																																																																																																																																																																																																																																				
98.74	-90.0	35.0	-3.6																																																																																																																																																																																																																																																																				
98.54	-85.0	0.0	0.0																																																																																																																																																																																																																																																																				
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108.74	0.0	0.0	0.0																																																																																																																																																																																																																																																																				
107.74	-21.7	-7.6	-3.2																																																																																																																																																																																																																																																																				
107.67	-23.3	-8.4	-3.7																																																																																																																																																																																																																																																																				
107.67	-59.3	-8.4	-26.7																																																																																																																																																																																																																																																																				
106.69	-83.4	-23.5	-41.8																																																																																																																																																																																																																																																																				
105.69	-110.5	-46.3	-76.0																																																																																																																																																																																																																																																																				
105.50	-116.1	-51.5	-85.4																																																																																																																																																																																																																																																																				
105.36	-120.1	-55.4	-92.9																																																																																																																																																																																																																																																																				
105.25	-122.7	-58.4	-99.2																																																																																																																																																																																																																																																																				
104.70	-130.0	-66.8	-133.9																																																																																																																																																																																																																																																																				
103.70	-137.9	-65.6	-201.8																																																																																																																																																																																																																																																																				
102.70	-145.5	-67.5	-266.6																																																																																																																																																																																																																																																																				
102.45	-148.0	-71.1	-283.9																																																																																																																																																																																																																																																																				
102.40	-148.4	-71.3	-287.5																																																																																																																																																																																																																																																																				
101.85	-122.0	1.4	-307.6																																																																																																																																																																																																																																																																				
101.70	-113.4	24.6	-305.7																																																																																																																																																																																																																																																																				
100.69	-74.9	128.9	-218.8																																																																																																																																																																																																																																																																				
100.24	-71.6	139.3	-157.5																																																																																																																																																																																																																																																																				
99.69	-77.9	124.2	-83.4																																																																																																																																																																																																																																																																				
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Schnitt:	Anlage S1	Schnitt 10	Seite Anlage S1/3																																																																																																																																																																																																																																																																				
Kapitel:	1	LF 1 (BS-T)	Archiv Nr.: 119																																																																																																																																																																																																																																																																				
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>104.70 -130.0 -66.8 -133.9</div><div>103.70 -137.9 -65.6 -201.8</div><div>102.70 -145.5 -67.5 -266.6</div><div>102.45 -148.0 -71.1 -283.9</div><div>102.40 -148.4 -71.3 -287.5</div><div>101.85 -122.0 1.4 -307.6</div><div>101.70 -113.4 24.6 -305.7</div><div>100.69 -74.9 128.9 -218.8</div><div>100.24 -71.6 139.3 -157.5</div><div>99.69 -77.9 124.2 -83.4</div><div>98.74 -76.9 30.4 -3.1</div><div>98.54 -72.6 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>108.74 0.0 0.0 0.0</div><div>107.74 0.0 0.0 0.0</div><div>107.67 0.0 0.0 0.0</div><div>106.69 0.0 0.0 0.0</div><div>105.69 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.36 0.0 0.0 0.0</div><div>105.25 0.0 0.0 0.0</div><div>104.70 0.0 0.0 0.0</div><div>103.70 0.0 0.0 0.0</div><div>102.70 0.0 0.0 0.0</div><div>102.45 0.0 0.0 0.0</div><div>102.40 0.0 0.0 0.0</div><div>101.85 0.0 0.0 0.0</div><div>101.70 0.0 0.0 0.0</div><div>100.69 0.0 0.0 0.0</div><div>100.24 0.0 0.0 0.0</div><div>99.69 0.0 0.0 0.0</div><div>98.74 0.0 0.0 0.0</div><div>98.54 0.0 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 w ks sig,Bh,k eph,k</div><div>[m] [mm] [kN/m³] [kN/m²] [kN/m²]</div><div>108.74 -29.7 - - -</div><div>108.69 -29.5 - - -</div><div>107.79 -25.8 - - -</div><div>107.74 -25.6 - - -</div><div>107.74 -25.6 - - -</div><div>107.67 -25.3 - - -</div><div>107.67 -25.3 - - -</div><div>107.62 -25.2 - - -</div><div>106.74 -21.6 - - -</div><div>106.69 -21.4 - - -</div><div>106.69 -21.4 - - -</div><div>106.64 -21.2 - - -</div><div>105.74 -17.7 - - -</div><div>105.69 -17.5 - - -</div><div>105.69 -17.5 - - -</div><div>105.64 -17.3 - - -</div><div>105.55 -16.9 - - -</div><div>105.50 -16.7 - - -</div><div>105.50 -16.7 - - -</div><div>105.45 -16.6 - - -</div><div>105.41 -16.4 - - -</div><div>105.36 -16.2 0.00 0.00 0.00</div><div>105.36 -16.2 0.00 0.00 0.00</div><div>105.31 -16.0 0.00 0.00 2.75</div><div>105.31 -16.0 0.17 2.75 2.75</div><div>105.25 -15.8 0.17 2.72 5.51</div><div>105.25 -15.8 0.96 15.07 15.07</div><div>105.20 -15.6 0.96 14.89 16.36</div><div>104.75 -13.9 2.01 27.96 27.96</div><div>104.70 -13.7 2.01 27.59 29.25</div></div></div></div></div>		
Schnitt: Anlage S1 Schnitt 10		Seite Anlage S1/4
Kapitel: 1 LF 1 (BS-T)		Archiv Nr.: 114
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025



Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																		
Auftraggeber: Stadtverwaltung Leipzig				-																																																																																																																																																																																																																		
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<table border="1"> <tbody> <tr><td>104.70</td><td>-13.7</td><td>2.14</td><td>29.25</td><td>29.25</td></tr> <tr><td>104.65</td><td>-13.5</td><td>2.14</td><td>28.86</td><td>30.54</td></tr> <tr><td>103.75</td><td>-10.3</td><td>5.00</td><td>51.41</td><td>53.75</td></tr> <tr><td>103.70</td><td>-10.1</td><td>5.00</td><td>50.55</td><td>55.04</td></tr> <tr><td>103.70</td><td>-10.1</td><td>5.00</td><td>50.55</td><td>55.04</td></tr> <tr><td>103.65</td><td>-9.9</td><td>5.00</td><td>49.69</td><td>56.33</td></tr> <tr><td>102.75</td><td>-7.0</td><td>5.00</td><td>35.09</td><td>79.53</td></tr> <tr><td>102.70</td><td>-6.9</td><td>5.00</td><td>34.33</td><td>80.82</td></tr> <tr><td>102.70</td><td>-6.9</td><td>5.00</td><td>34.33</td><td>80.82</td></tr> <tr><td>102.65</td><td>-6.7</td><td>5.00</td><td>33.58</td><td>82.11</td></tr> <tr><td>102.50</td><td>-6.3</td><td>5.00</td><td>31.34</td><td>85.98</td></tr> <tr><td>102.45</td><td>-6.1</td><td>5.00</td><td>30.61</td><td>87.27</td></tr> <tr><td>102.45</td><td>-6.1</td><td>5.00</td><td>30.61</td><td>149.54</td></tr> <tr><td>102.40</td><td>-6.0</td><td>5.00</td><td>29.88</td><td>153.01</td></tr> <tr><td>102.40</td><td>-6.0</td><td>25.60</td><td>153.02</td><td>153.01</td></tr> <tr><td>102.35</td><td>-5.8</td><td>25.60</td><td>149.32</td><td>156.47</td></tr> <tr><td>101.90</td><td>-4.6</td><td>40.89</td><td>187.66</td><td>187.64</td></tr> <tr><td>101.85</td><td>-4.5</td><td>40.89</td><td>182.28</td><td>191.10</td></tr> <tr><td>101.85</td><td>-4.5</td><td>42.88</td><td>191.12</td><td>191.10</td></tr> <tr><td>101.80</td><td>-4.3</td><td>42.88</td><td>185.53</td><td>194.57</td></tr> <tr><td>101.75</td><td>-4.2</td><td>47.17</td><td>198.05</td><td>198.03</td></tr> <tr><td>101.70</td><td>-4.1</td><td>47.17</td><td>192.03</td><td>201.49</td></tr> <tr><td>101.70</td><td>-4.1</td><td>49.50</td><td>201.51</td><td>201.49</td></tr> <tr><td>101.65</td><td>-3.9</td><td>49.50</td><td>195.26</td><td>204.96</td></tr> <tr><td>100.75</td><td>-1.9</td><td>50.00</td><td>93.93</td><td>267.29</td></tr> <tr><td>100.69</td><td>-1.8</td><td>50.00</td><td>88.71</td><td>270.76</td></tr> <tr><td>100.69</td><td>-1.8</td><td>50.00</td><td>88.71</td><td>270.76</td></tr> <tr><td>100.64</td><td>-1.7</td><td>50.00</td><td>83.54</td><td>274.22</td></tr> <tr><td>100.29</td><td>-1.0</td><td>50.00</td><td>48.54</td><td>298.46</td></tr> <tr><td>100.24</td><td>-0.9</td><td>50.00</td><td>43.69</td><td>301.93</td></tr> <tr><td>100.24</td><td>-0.9</td><td>50.00</td><td>43.69</td><td>301.93</td></tr> <tr><td>100.19</td><td>-0.8</td><td>50.00</td><td>38.87</td><td>305.39</td></tr> <tr><td>99.74</td><td>0.1</td><td>50.00</td><td>-3.19</td><td>336.56</td></tr> <tr><td>99.69</td><td>0.2</td><td>50.00</td><td>-7.75</td><td>340.02</td></tr> <tr><td>99.69</td><td>0.2</td><td>50.00</td><td>-7.75</td><td>340.02</td></tr> <tr><td>99.64</td><td>0.2</td><td>50.00</td><td>-12.29</td><td>343.49</td></tr> <tr><td>98.79</td><td>1.8</td><td>50.00</td><td>-87.89</td><td>402.36</td></tr> <tr><td>98.74</td><td>1.8</td><td>50.00</td><td>-92.30</td><td>405.83</td></tr> <tr><td>98.74</td><td>1.8</td><td>50.00</td><td>-92.30</td><td>405.83</td></tr> <tr><td>98.69</td><td>1.9</td><td>50.00</td><td>-96.70</td><td>409.29</td></tr> <tr><td>98.59</td><td>2.1</td><td>50.00</td><td>-105.51</td><td>416.21</td></tr> <tr><td>98.54</td><td>2.2</td><td>50.00</td><td>-109.92</td><td>419.68</td></tr> </tbody> </table> <p> Verdrehung (Theoretischer Fußpunkt) [°]  <math>\phi_{i,[g+q],k}</math>: -0.10064172  Theoretischer Fußpunkt = 98.539 m    Einbindetiefe <math>t_g</math> = 6.82 m  Profillänge = 10.20 m </p>					104.70	-13.7	2.14	29.25	29.25	104.65	-13.5	2.14	28.86	30.54	103.75	-10.3	5.00	51.41	53.75	103.70	-10.1	5.00	50.55	55.04	103.70	-10.1	5.00	50.55	55.04	103.65	-9.9	5.00	49.69	56.33	102.75	-7.0	5.00	35.09	79.53	102.70	-6.9	5.00	34.33	80.82	102.70	-6.9	5.00	34.33	80.82	102.65	-6.7	5.00	33.58	82.11	102.50	-6.3	5.00	31.34	85.98	102.45	-6.1	5.00	30.61	87.27	102.45	-6.1	5.00	30.61	149.54	102.40	-6.0	5.00	29.88	153.01	102.40	-6.0	25.60	153.02	153.01	102.35	-5.8	25.60	149.32	156.47	101.90	-4.6	40.89	187.66	187.64	101.85	-4.5	40.89	182.28	191.10	101.85	-4.5	42.88	191.12	191.10	101.80	-4.3	42.88	185.53	194.57	101.75	-4.2	47.17	198.05	198.03	101.70	-4.1	47.17	192.03	201.49	101.70	-4.1	49.50	201.51	201.49	101.65	-3.9	49.50	195.26	204.96	100.75	-1.9	50.00	93.93	267.29	100.69	-1.8	50.00	88.71	270.76	100.69	-1.8	50.00	88.71	270.76	100.64	-1.7	50.00	83.54	274.22	100.29	-1.0	50.00	48.54	298.46	100.24	-0.9	50.00	43.69	301.93	100.24	-0.9	50.00	43.69	301.93	100.19	-0.8	50.00	38.87	305.39	99.74	0.1	50.00	-3.19	336.56	99.69	0.2	50.00	-7.75	340.02	99.69	0.2	50.00	-7.75	340.02	99.64	0.2	50.00	-12.29	343.49	98.79	1.8	50.00	-87.89	402.36	98.74	1.8	50.00	-92.30	405.83	98.74	1.8	50.00	-92.30	405.83	98.69	1.9	50.00	-96.70	409.29	98.59	2.1	50.00	-105.51	416.21	98.54	2.2	50.00	-109.92	419.68
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102.40	-6.0	25.60	153.02	153.01																																																																																																																																																																																																																		
102.35	-5.8	25.60	149.32	156.47																																																																																																																																																																																																																		
101.90	-4.6	40.89	187.66	187.64																																																																																																																																																																																																																		
101.85	-4.5	40.89	182.28	191.10																																																																																																																																																																																																																		
101.85	-4.5	42.88	191.12	191.10																																																																																																																																																																																																																		
101.80	-4.3	42.88	185.53	194.57																																																																																																																																																																																																																		
101.75	-4.2	47.17	198.05	198.03																																																																																																																																																																																																																		
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101.70	-4.1	49.50	201.51	201.49																																																																																																																																																																																																																		
101.65	-3.9	49.50	195.26	204.96																																																																																																																																																																																																																		
100.75	-1.9	50.00	93.93	267.29																																																																																																																																																																																																																		
100.69	-1.8	50.00	88.71	270.76																																																																																																																																																																																																																		
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100.64	-1.7	50.00	83.54	274.22																																																																																																																																																																																																																		
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100.24	-0.9	50.00	43.69	301.93																																																																																																																																																																																																																		
100.24	-0.9	50.00	43.69	301.93																																																																																																																																																																																																																		
100.19	-0.8	50.00	38.87	305.39																																																																																																																																																																																																																		
99.74	0.1	50.00	-3.19	336.56																																																																																																																																																																																																																		
99.69	0.2	50.00	-7.75	340.02																																																																																																																																																																																																																		
99.69	0.2	50.00	-7.75	340.02																																																																																																																																																																																																																		
99.64	0.2	50.00	-12.29	343.49																																																																																																																																																																																																																		
98.79	1.8	50.00	-87.89	402.36																																																																																																																																																																																																																		
98.74	1.8	50.00	-92.30	405.83																																																																																																																																																																																																																		
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98.69	1.9	50.00	-96.70	409.29																																																																																																																																																																																																																		
98.59	2.1	50.00	-105.51	416.21																																																																																																																																																																																																																		
98.54	2.2	50.00	-109.92	419.68																																																																																																																																																																																																																		
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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 Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_k - G'_{k} + E_{av,k} \geq B_{v,k}</math> <math>G_k = 193.01 \text{ kN/m}</math> <math>G'_{k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 36.00 \text{ kN/m}</math> <math>E_{av,k} = 59.56 \text{ kN/m}</math> (<math>E_{ah,k} = 342.29 \text{ kN/m}</math>) <math>B_{v,k} = 149.92</math> Summe <math>V_{k} = 138.65 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 99.42 bis 95.90 m) <math>\Rightarrow q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>105.36</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>98.54</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 98.54 m = 1.000 m<sup>2</sup>/m/m <math>\Rightarrow R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 215.05 / 1.40 = 153.61 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 1018.66 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{k} + E_{av,d} + P_{v,d} = 231.62 - 0.00 + 68.49 + 43.20 = 343.31 \text{ kN/m}</math> <math>\Rightarrow \mu = V_{d} / R_{d} = 343.31 / 1018.66 = 0.34</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.36	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	98.54	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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Schnitt:	Anlage S1    Schnitt 10	Seite Anlage S1/6																
Kapitel:	1                    LF 1 (BS-T)	Archiv Nr.: 116																
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>2    LF 2 (BS-P)</div> <div>GGU-RETAIN / Version 12.00 / 01.02.2024 Bohrpfahlwand =====</div> <div>Teilsicherheitskonzept (EC 7) EMG TBA 3.2 - Schnitt 9 Datei: 01_BS 10_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 = 108.74 mNHN</div> <div>Maximale Teilung bis Baugrubensohle: 0.050 m Maximale Teilung unter Baugrubensohle: 0.050 m</div> <div>Baugrubensohle = 105.36 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>Flächenlast p = 5.00 kN/m² als ständige Last</div> <div>Kraftränder Momente (entgegen dem Uhrzeigersinn positiv) Horizontalkräfte (nach Erdseite positiv) Vertikalkräfte (nach unten positiv)</div> <div><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>107.67</td><td>-23.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>36.00</td><td>0.00</td></tr></table></div> <div>Art des Fußlagers: Profillänge automatisch und Fuß gebettet Profillänge = 10.30 m</div> <div>Bettungsmodule <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>105.36</td><td>105.25</td><td>5.000</td><td>5.000</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></div> <div>Ausnutzungsgrad mue = 478.713 / 487.413 = 0.982 Bettungslager Bh,d = 478.713 kN/m Erdwiderstand Eph,d = 487.413 kN/m</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	107.67	-23.00	0.00	0.00	0.00	36.00	0.00	von	bis	ks(oben)	ks(unten)	[mNHN]	[mNHN]	[MN/m³]	[MN/m³]	105.36	105.25	5.000	5.000	105.25	102.45	5.000	5.000	102.45	80.00	50.000	50.000
Nr.	Tiefe	M,g,k	M,q,k	H,g,k	H,q,k	V,g,k	V,q,k																																							
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Schnitt:	Anlage S1    Schnitt 10	Seite Anlage S117																																												
Kapitel:	2                    LF 2 (BS-P)	Archiv Nr.: 117																																												
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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>105.25</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 &lt;&gt; 0.0.</div> <div>Ersatzerddruck-Beiwert kah 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>105.25</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>108.740</td><td>107.740</td><td>1.948</td><td>9.352</td><td>0.00</td><td>0.00</td></tr><tr><td>107.740</td><td>107.670</td><td>9.352</td><td>9.871</td><td>0.00</td><td>0.00</td></tr><tr><td>107.670</td><td>106.690</td><td>9.871</td><td>17.126</td><td>0.00</td><td>0.00</td></tr><tr><td>106.690</td><td>105.692</td><td>17.126</td><td>24.516</td><td>0.00</td><td>0.00</td></tr><tr><td>105.692</td><td>105.500</td><td>24.516</td><td>25.937</td><td>0.00</td><td>0.00</td></tr><tr><td>105.500</td><td>105.360</td><td>25.937</td><td>26.483</td><td>0.00</td><td>0.00</td></tr><tr><td>105.360</td><td>105.250</td><td>26.483</td><td>26.911</td><td>0.00</td><td>0.00</td></tr><tr><td>105.250</td><td>104.700</td><td>32.907</td><td>35.247</td><td>0.00</td><td>0.00</td></tr><tr><td>104.700</td><td>103.700</td><td>35.247</td><td>39.502</td><td>0.00</td><td>0.00</td></tr><tr><td>103.700</td><td>102.700</td><td>39.502</td><td>43.757</td><td>0.00</td><td>0.00</td></tr><tr><td>102.700</td><td>102.450</td><td>43.757</td><td>44.821</td><td>0.00</td><td>0.00</td></tr><tr><td>102.450</td><td>102.400</td><td>33.119</td><td>33.325</td><td>0.00</td><td>0.00</td></tr><tr><td>102.400</td><td>101.898</td><td>33.325</td><td>35.382</td><td>0.00</td><td>0.00</td></tr><tr><td>101.898</td><td>101.698</td><td>35.382</td><td>36.204</td><td>0.00</td><td>0.00</td></tr><tr><td>101.698</td><td>100.695</td><td>36.204</td><td>40.317</td><td>0.00</td><td>0.00</td></tr><tr><td>100.695</td><td>100.244</td><td>40.317</td><td>42.168</td><td>0.00</td><td>0.00</td></tr><tr><td>100.244</td><td>99.692</td><td>42.168</td><td>44.430</td><td>0.00</td><td>0.00</td></tr><tr><td>99.692</td><td>98.740</td><td>44.430</td><td>48.338</td><td>0.00</td><td>0.00</td></tr><tr><td>98.740</td><td>98.439</td><td>48.338</td><td>49.572</td><td>0.00</td><td>0.00</td></tr><tr><td>98.439</td><td>80.000</td><td>49.572</td><td>125.200</td><td>0.00</td><td>0.00</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>108.74</td><td>105.36</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 = 1.40</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>105.50</td><td>105.36</td><td>0.00</td><td>0.00</td></tr><tr><td>105.36</td><td>105.25</td><td>0.00</td><td>-3.15</td></tr><tr><td>105.25</td><td>104.70</td><td>-8.61</td><td>-16.72</td></tr><tr><td>104.70</td><td>103.70</td><td>-16.72</td><td>-31.45</td></tr><tr><td>103.70</td><td>102.70</td><td>-31.45</td><td>-46.18</td></tr><tr><td>102.70</td><td>102.45</td><td>-46.18</td><td>-49.87</td></tr><tr><td>102.45</td><td>102.40</td><td>-85.45</td><td>-87.43</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]		108.740	107.740	1.948	9.352	0.00	0.00	107.740	107.670	9.352	9.871	0.00	0.00	107.670	106.690	9.871	17.126	0.00	0.00	106.690	105.692	17.126	24.516	0.00	0.00	105.692	105.500	24.516	25.937	0.00	0.00	105.500	105.360	25.937	26.483	0.00	0.00	105.360	105.250	26.483	26.911	0.00	0.00	105.250	104.700	32.907	35.247	0.00	0.00	104.700	103.700	35.247	39.502	0.00	0.00	103.700	102.700	39.502	43.757	0.00	0.00	102.700	102.450	43.757	44.821	0.00	0.00	102.450	102.400	33.119	33.325	0.00	0.00	102.400	101.898	33.325	35.382	0.00	0.00	101.898	101.698	35.382	36.204	0.00	0.00	101.698	100.695	36.204	40.317	0.00	0.00	100.695	100.244	40.317	42.168	0.00	0.00	100.244	99.692	42.168	44.430	0.00	0.00	99.692	98.740	44.430	48.338	0.00	0.00	98.740	98.439	48.338	49.572	0.00	0.00	98.439	80.000	49.572	125.200	0.00	0.00	w(oben)	w(unten)	z(oben)	z(unten)	[kN/m²]	[kN/m²]	[mNHN]	[mNHN]	0.00	0.00	108.74	105.36	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]	105.50	105.36	0.00	0.00	105.36	105.25	0.00	-3.15	105.25	104.70	-8.61	-16.72	104.70	103.70	-16.72	-31.45	103.70	102.70	-31.45	-46.18	102.70	102.45	-46.18	-49.87	102.45	102.40	-85.45	-87.43	<div>Seite Anlage S1/8</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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Schnitt: Anlage S1 Schnitt 10		<div>statistisch geprüft</div> <div>für</div> <div>Standsicherheit</div> <div>Dipl.-Ing. A. Forner</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>102.40101.90-87.43-107.22</div><div>101.90101.70-107.22-115.14</div><div>101.70100.70-115.14-154.71</div><div>100.70100.24-154.71-172.52</div><div>100.2499.69-172.52-194.29</div><div>99.6998.74-194.29-231.89</div><div>98.7498.44-231.89-243.76</div><div>98.4480.00-243.76-971.47</div></div><div><div>Schnittgrößen (Bemessungswerte)</div><div><div>TiefeNQM</div><div>[mNHN][kN/m][kN/m][kN·m/m]</div><div>108.740.00.00.0</div><div>107.74-26.8-7.2-2.8</div><div>107.67-28.8-8.1-3.3</div><div>107.67-77.4-8.1-34.4</div><div>106.69-107.1-24.9-49.8</div><div>105.69-140.9-51.4-87.1</div><div>105.50-147.7-57.6-97.6</div><div>105.36-152.8-62.3-106.0</div><div>105.25-156.0-65.8-113.0</div><div>104.70-165.3-74.7-152.1</div><div>103.70-176.0-72.2-226.8</div><div>102.70-188.2-81.0-301.5</div><div>102.45-192.0-86.6-322.5</div><div>102.40-192.6-87.1-326.8</div><div>101.90-162.3-2.6-350.1</div><div>101.70-149.034.0-346.9</div><div>100.70-111.2140.9-249.0</div><div>100.24-108.3151.8-182.2</div><div>99.69-115.1137.5-101.1</div><div>98.74-124.046.0-7.1</div><div>98.44-120.50.00.0</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>108.740.00.00.0</div><div>107.74-21.0-5.7-2.2</div><div>107.67-22.6-6.3-2.6</div><div>107.67-58.6-6.3-25.6</div><div>106.69-81.9-19.6-37.7</div><div>105.69-108.4-40.3-67.0</div><div>105.50-113.8-45.2-75.2</div><div>105.36-117.7-48.8-81.8</div><div>105.25-120.3-51.6-87.3</div><div>104.70-127.5-58.6-117.9</div><div>103.70-135.9-56.8-176.6</div><div>102.70-145.6-63.7-235.4</div><div>102.45-148.5-68.1-251.8</div><div>102.40-149.0-68.5-255.2</div><div>101.90-125.3-2.3-273.6</div><div>101.70-114.826.4-271.2</div><div>100.70-85.3110.1-194.8</div><div>100.24-83.0118.7-142.5</div><div>99.69-88.4107.5-79.1</div><div>98.74-95.436.0-5.6</div><div>98.44-92.70.00.0</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>108.740.00.00.0</div><div>107.74-21.0-5.7-2.2</div><div>107.67-22.6-6.3-2.6</div><div>107.67-58.6-6.3-25.6</div><div>106.69-81.9-19.6-37.7</div><div>105.69-108.4-40.3-67.0</div><div>105.50-113.8-45.2-75.2</div><div>105.36-117.7-48.8-81.8</div><div>105.25-120.3-51.6-87.3</div></div></div></div>						Schnitt: Anlage S1 Schnitt 10		Seite Anlage S1/9	
Kapitel: 2		LF 2 (BS-P)		Archiv Nr.: 119					
Vorgang: Genehmigungstatik		Projekt-Nr.: 2004-0025							

Statisch geprüft

für

Standssicherheit

Dipl.-Ing. A. Forner

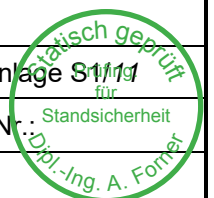


Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):
Auftraggeber: Stadtverwaltung Leipzig		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024
<div><div><div>104.70 -127.5 -58.6 -117.9</div><div>103.70 -135.9 -56.8 -176.6</div><div>102.70 -145.6 -63.7 -235.4</div><div>102.45 -148.5 -68.1 -251.8</div><div>102.40 -149.0 -68.5 -255.2</div><div>101.90 -125.3 -2.3 -273.6</div><div>101.70 -114.8 26.4 -271.2</div><div>100.70 -85.3 110.1 -194.8</div><div>100.24 -83.0 118.7 -142.5</div><div>99.69 -88.4 107.5 -79.1</div><div>98.74 -95.4 36.0 -5.6</div><div>98.44 -92.7 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>108.74 0.0 0.0 0.0</div><div>107.74 0.0 0.0 0.0</div><div>107.67 0.0 0.0 0.0</div><div>106.69 0.0 0.0 0.0</div><div>105.69 0.0 0.0 0.0</div><div>105.50 0.0 0.0 0.0</div><div>105.36 0.0 0.0 0.0</div><div>105.25 0.0 0.0 0.0</div><div>104.70 0.0 0.0 0.0</div><div>103.70 0.0 0.0 0.0</div><div>102.70 0.0 0.0 0.0</div><div>102.45 0.0 0.0 0.0</div><div>102.40 0.0 0.0 0.0</div><div>101.90 0.0 0.0 0.0</div><div>101.70 0.0 0.0 0.0</div><div>100.70 0.0 0.0 0.0</div><div>100.24 0.0 0.0 0.0</div><div>99.69 0.0 0.0 0.0</div><div>98.74 0.0 0.0 0.0</div><div>98.44 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>108.74 -24.5 - - -</div><div>108.69 -24.4 - - -</div><div>107.79 -21.3 - - -</div><div>107.74 -21.2 - - -</div><div>107.74 -21.2 - - -</div><div>107.67 -20.9 - - -</div><div>107.67 -20.9 - - -</div><div>107.62 -20.8 - - -</div><div>106.74 -17.8 - - -</div><div>106.69 -17.6 - - -</div><div>106.69 -17.6 - - -</div><div>106.64 -17.5 - - -</div><div>105.74 -14.5 - - -</div><div>105.69 -14.4 - - -</div><div>105.69 -14.4 - - -</div><div>105.64 -14.2 - - -</div><div>105.55 -13.9 - - -</div><div>105.50 -13.8 - - -</div><div>105.50 -13.8 - - -</div><div>105.45 -13.6 - - -</div><div>105.41 -13.5 - - -</div><div>105.36 -13.3 0.00 0.00 0.00</div><div>105.36 -13.3 0.00 0.00 0.00</div><div>105.31 -13.1 0.00 0.00 2.75</div><div>105.31 -13.1 0.21 2.75 2.75</div><div>105.25 -13.0 0.21 2.72 5.51</div><div>105.25 -13.0 1.16 15.07 15.07</div><div>105.20 -12.8 1.16 14.89 16.36</div><div>104.75 -11.4 2.45 27.96 27.96</div><div>104.70 -11.3 2.45 27.59 29.25</div></div></div></div>		
Schnitt: Anlage S1 Schnitt 10		Seite Anlage S1/10
Kapitel: 2 LF 2 (BS-P)		Archiv Nr.: 1110
Vorgang: Genehmigungsstatik		Projekt-Nr.: 2004-0025





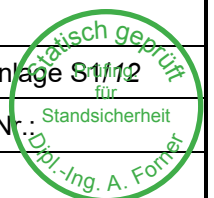
Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2				Bauwerksnummer (ASB):																																																																																																																																																																																																																		
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Baumaßnahme: Öffnung des Elstermühlgrabens - TBA 3.2		Bauwerksnummer (ASB):																
Auftraggeber: Stadtverwaltung Leipzig																		
Verfasser: INROS LACKNER SE, Niederlassung Cottbus		Datum: 21.06.2024																
<p>Nachweis Summe V Nachweis des mobilisierten Erdwiderstands Bedingung: <math>P_{v,k} + G_{s,k} - G'_{s,k} + E_{av,k} \geq B_{v,k}</math> <math>G_{s,k} = 194.91 \text{ kN/m}</math> <math>G'_{s,k} = 0.00 \text{ kN/m}</math> <math>P_{v,k} = 36.00 \text{ kN/m}</math> <math>E_{av,k} = 56.98 \text{ kN/m}</math> (<math>E_{ah,k} = 326.45 \text{ kN/m}</math>) <math>B_{v,k} = 137.18</math> Summe <math>V_{s,k} = 150.71 \text{ kN/m}</math> (Druck)</p> <p>Nachweis der vertikalen Tragfähigkeit (Erfahrungswerte nach EA Pfähle) Verfahren 2: EAU Bild E 4-3 (rechts) Bohrpfahlwand <math>D = 0.88 \text{ m}</math> Verhältniswert (min, max) = 0.00 Spitzendruck <math>q_{c,m} = 7.50 \text{ MN/m}^2</math> (gemittelt von 99.32 bis 95.80 m) <math>\implies q_{b,k} = 1.60 \text{ MN/m}^2</math> <math>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}</math></p> <p>Mantelreibung</p> <table><thead><tr><th>von</th><th>bis</th><th><math>q_{s,k} [\text{kN/m}^2]</math></th><th>Bezeichnung</th></tr></thead><tbody><tr><td>105.36</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>98.44</td><td>55.00</td><td>s3: Flussskies, -sand</td></tr></tbody></table> <p>Mantelfläche bis 98.44 m = <math>1.000 \text{ m}^2/\text{m}</math> <math>\implies R_{s1,d}</math> <math>R_{s1,d} = \eta(s) \cdot R_{s1,k} / \gamma(q_{s,k}) = 1.000 \cdot 220.55 / 1.40 = 157.54 \text{ kN/m}</math> <math>R_{d} = R_{b,d} + R_{s1,d} = 1022.58 \text{ kN/m}</math></p> <p>Einwirkungen <math>V_{d} = G_{d} - G'_{s,k} + E_{av,d} + P_{v,d} = 263.12 - 0.00 + 72.65 + 48.60 = 384.37 \text{ kN/m}</math> <math>\implies \mu = V_{d} / R_{d} = 384.37 / 1022.58 = 0.38</math></p> <p>Horizontaler Wasserdruck herkömmlich bestimmt.</p>			von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung	105.36	105.25	0.00	S1: Auffüllungen	105.25	102.45	0.00	S2: Auelehm	102.45	98.44	55.00	s3: Flussskies, -sand
von	bis	$q_{s,k} [\text{kN/m}^2]$	Bezeichnung															
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102.45	98.44	55.00	s3: Flussskies, -sand															
Schnitt: Anlage S1 Schnitt 10		Seite Anlage S1/12																
Kapitel: 2 LF 2 (BS-P)		Archiv Nr.: 1112																
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>Schlussblatt</div>		
Schnitt:	Anlage S1 Schnitt 10	Seite Anlage S1/13
Kapitel:	2 LF 2 (BS-P)	Archiv Nr.: 1113
Vorgang:	Genehmigungsstatik	Projekt-Nr.: 2004-0025

