

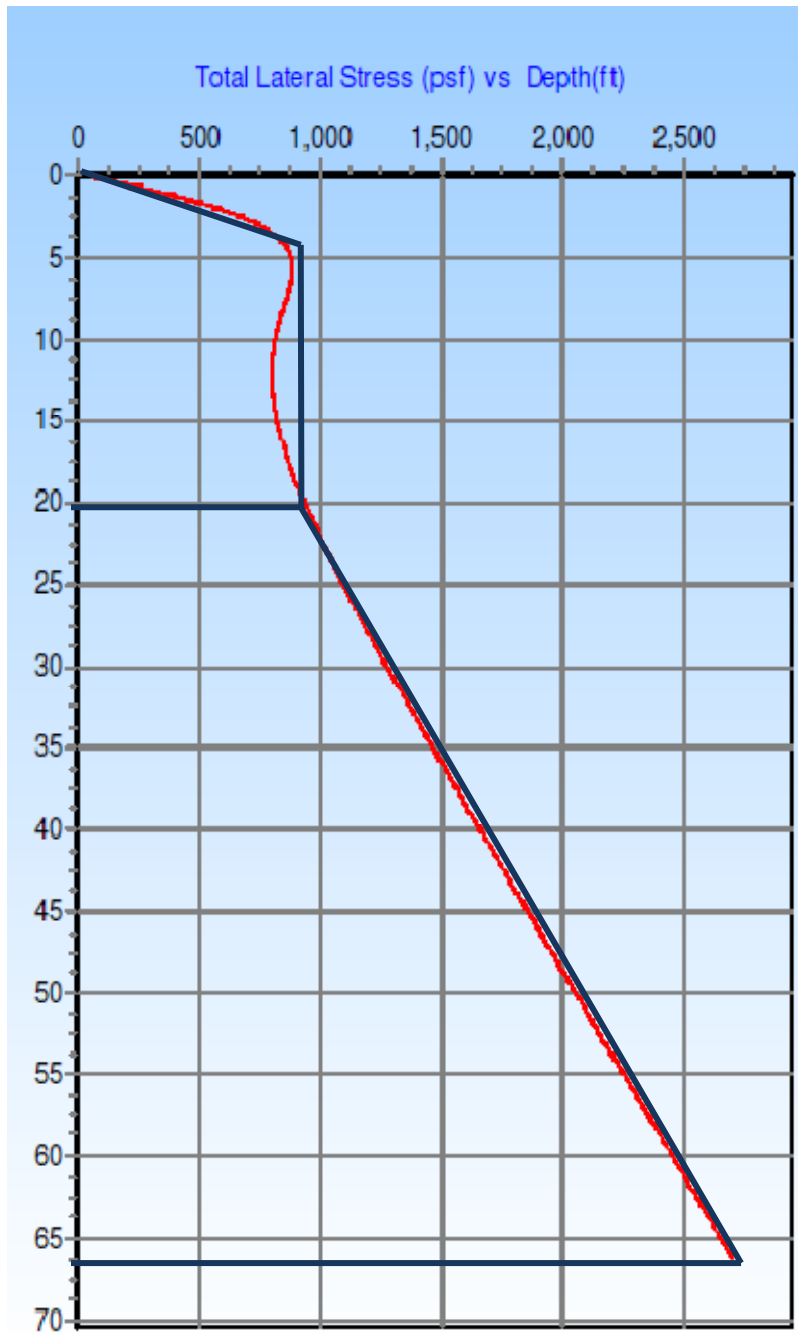
# LATERAL STRESS ANALYSIS

Input Parameters for Job # **ENG-TIPS2**

Date **5/23/2011**

Soil wt. =	<b>115</b>	<b>pcf</b>
Retain. Ht =	<b>26.2</b>	<b>ft</b>
Enebdm. =	<b>40</b>	<b>ft</b>
Water Depth =	<b>27</b>	<b>ft</b>
Earth Press. Coeff =	<b>0.35</b>	<b>Traingular</b>
ht. incr. =	<b>0.05</b>	<b>ft</b>
Kh value =	<b>0</b>	<b>g</b>
Strip Load =	<b>4180</b>	<b>psf</b>
Strip Width =	<b>3</b>	<b>ft</b>
Setback =	<b>6.5</b>	<b>ft</b>
Line Load =	<b>0</b>	<b>lbf/ft</b>
Dist to qL =	<b>0</b>	<b>ft</b>
Point Load =	<b>0</b>	<b>lbf</b>
Dist. to Q,"D" =	<b>0</b>	<b>ft</b>
Uniform Load =	<b>100</b>	<b>psf</b>

Pelelo;



Total lateral stress is from LATERAL STRESS Software. I am getting 103.3 kip per ft length thrust or lateral force, acting approx. 40 feet below top of pile wall. Assumed retained height of 8 m and embedment depth of 12.2 m for a cantilever pile wall. If the pile wall is not continuous (has spacing like a soldier beam wall), then the total lateral force would be 103.3 x spacing. This lateral diagram is from a combination of strip load + earth pressure + misc. 100 psf uniform surcharge due to construction equipment. Table of test results are also attached.

## Lateral Stress Results

Elev (ft)	Strip Sur. (psf)	Uniform Sur. (psf)	Pore water (psf)	Static (psf)	Line Load (psf)	Point load (psf)	Seismic (psf)	Total Lateral (psf)
.5	128.2	35.0	.0	20.1	.0	.0	.0	183.3
1.0	250.0	35.0	.0	40.2	.0	.0	.0	325.3
1.5	359.9	35.0	.0	60.4	.0	.0	.0	455.3
2.0	453.7	35.0	.0	80.5	.0	.0	.0	569.2
2.5	529.0	35.0	.0	100.6	.0	.0	.0	664.6
3.0	585.1	35.0	.0	120.7	.0	.0	.0	740.8
3.5	622.7	35.0	.0	140.9	.0	.0	.0	798.5
4.0	643.5	35.0	.0	161.0	.0	.0	.0	839.5
4.5	650.1	35.0	.0	181.1	.0	.0	.0	866.2
5.0	644.9	35.0	.0	201.2	.0	.0	.0	881.1
5.5	630.6	35.0	.0	221.4	.0	.0	.0	886.9
6.0	609.4	35.0	.0	241.5	.0	.0	.0	885.9
6.5	583.6	35.0	.0	261.6	.0	.0	.0	880.2
7.0	554.7	35.0	.0	281.7	.0	.0	.0	871.5
7.5	524.2	35.0	.0	301.9	.0	.0	.0	861.1
8.0	493.1	35.0	.0	322.0	.0	.0	.0	850.1
8.5	462.1	35.0	.0	342.1	.0	.0	.0	839.2
9.0	431.9	35.0	.0	362.2	.0	.0	.0	829.2
9.5	402.9	35.0	.0	382.4	.0	.0	.0	820.2
10.0	375.2	35.0	.0	402.5	.0	.0	.0	812.7
10.5	349.0	35.0	.0	422.6	.0	.0	.0	806.7
11.0	324.5	35.0	.0	442.7	.0	.0	.0	802.3
11.5	301.6	35.0	.0	462.9	.0	.0	.0	799.5
12.0	280.3	35.0	.0	483.0	.0	.0	.0	798.3
12.5	260.6	35.0	.0	503.1	.0	.0	.0	798.7
13.0	242.3	35.0	.0	523.2	.0	.0	.0	800.6
13.5	225.4	35.0	.0	543.4	.0	.0	.0	803.8
14.0	209.8	35.0	.0	563.5	.0	.0	.0	808.3
14.5	195.5	35.0	.0	583.6	.0	.0	.0	814.1
15.0	182.2	35.0	.0	603.7	.0	.0	.0	820.9
15.5	170.0	35.0	.0	623.9	.0	.0	.0	828.8
16.0	158.7	35.0	.0	644.0	.0	.0	.0	837.7
16.5	148.3	35.0	.0	664.1	.0	.0	.0	847.4

Elev (ft)	Strip Sur. (psf)	Uniform Sur. (psf)	Pore water (psf)	Static (psf)	Line Load (psf)	Point load (psf)	Seismic (psf)	Total Lateral (psf)
17.0	138.7	35.0	.0	684.2	.0	.0	.0	858.0
17.5	129.9	35.0	.0	704.4	.0	.0	.0	869.3
18.0	121.7	35.0	.0	724.5	.0	.0	.0	881.2
18.5	114.2	35.0	.0	744.6	.0	.0	.0	893.8
19.0	107.2	35.0	.0	764.7	.0	.0	.0	907.0
19.5	100.7	35.0	.0	784.9	.0	.0	.0	920.6
20.0	94.8	35.0	.0	805.0	.0	.0	.0	934.8
20.5	89.2	35.0	.0	825.1	.0	.0	.0	949.3
21.0	84.1	35.0	.0	845.2	.0	.0	.0	964.3
21.5	79.3	35.0	.0	865.4	.0	.0	.0	979.7
22.0	74.9	35.0	.0	885.5	.0	.0	.0	995.4
22.5	70.7	35.0	.0	905.6	.0	.0	.0	1011.4
23.0	66.9	35.0	.0	925.7	.0	.0	.0	1027.6
23.5	63.3	35.0	.0	945.9	.0	.0	.0	1044.2
24.0	60.0	35.0	.0	966.0	.0	.0	.0	1061.0
24.5	56.8	35.0	.0	986.1	.0	.0	.0	1078.0
25.0	53.9	35.0	.0	1006.2	.0	.0	.0	1095.2
25.5	51.2	35.0	.0	1026.4	.0	.0	.0	1112.6
26.0	48.6	35.0	.0	1046.5	.0	.0	.0	1130.1
26.5	46.3	35.0	.0	1066.6	.0	.0	.0	1147.9
27.0	44.0	35.0	.0	1086.7	.0	.0	.0	1165.8
27.5	41.9	35.0	.0	1106.9	.0	.0	.0	1183.8
28.0	39.9	35.0	.0	1127.0	.0	.0	.0	1201.9
28.5	38.1	35.0	.0	1147.1	.0	.0	.0	1220.2
29.0	36.3	35.0	.0	1167.2	.0	.0	.0	1238.6
29.5	34.7	35.0	.0	1187.4	.0	.0	.0	1257.1
30.0	33.1	35.0	.0	1207.5	.0	.0	.0	1275.6
30.5	31.7	35.0	.0	1227.6	.0	.0	.0	1294.3
31.0	30.3	35.0	.0	1247.7	.0	.0	.0	1313.1
31.5	29.0	35.0	.0	1267.9	.0	.0	.0	1331.9
32.0	27.8	35.0	.0	1288.0	.0	.0	.0	1350.8
32.5	26.6	35.0	.0	1308.1	.0	.0	.0	1369.7
33.0	25.5	35.0	.0	1328.2	.0	.0	.0	1388.8
33.5	24.5	35.0	.0	1348.4	.0	.0	.0	1407.8
34.0	23.5	35.0	.0	1368.5	.0	.0	.0	1427.0
34.5	22.5	35.0	.0	1388.6	.0	.0	.0	1446.2

Elev (ft)	Strip Sur. (psf)	Uniform Sur. (psf)	Pore water (psf)	Static (psf)	Line Load (psf)	Point load (psf)	Seismic (psf)	Total Lateral (psf)
35.0	21.7	35.0	.0	1408.7	.0	.0	.0	1465.4
35.5	20.8	35.0	.0	1428.9	.0	.0	.0	1484.7
36.0	20.0	35.0	.0	1449.0	.0	.0	.0	1504.0
36.5	19.3	35.0	.0	1469.1	.0	.0	.0	1523.4
37.0	18.5	35.0	.0	1489.2	.0	.0	.0	1542.8
37.5	17.8	35.0	.0	1509.4	.0	.0	.0	1562.2
38.0	17.2	35.0	.0	1529.5	.0	.0	.0	1581.7
38.5	16.6	35.0	.0	1549.6	.0	.0	.0	1601.2
39.0	16.0	35.0	.0	1569.7	.0	.0	.0	1620.7
39.5	15.4	35.0	.0	1589.9	.0	.0	.0	1640.3
40.0	14.9	35.0	.0	1610.0	.0	.0	.0	1659.9
40.5	14.4	35.0	.0	1630.1	.0	.0	.0	1679.5
41.0	13.9	35.0	.0	1650.2	.0	.0	.0	1699.1
41.5	13.4	35.0	.0	1670.4	.0	.0	.0	1718.8
42.0	12.9	35.0	.0	1690.5	.0	.0	.0	1738.4
42.5	12.5	35.0	.0	1710.6	.0	.0	.0	1758.1
43.0	12.1	35.0	.0	1730.7	.0	.0	.0	1777.9
43.5	11.7	35.0	.0	1750.9	.0	.0	.0	1797.6
44.0	11.3	35.0	.0	1771.0	.0	.0	.0	1817.3
44.5	11.0	35.0	.0	1791.1	.0	.0	.0	1837.1
45.0	10.6	35.0	.0	1811.2	.0	.0	.0	1856.9
45.5	10.3	35.0	.0	1831.4	.0	.0	.0	1876.7
46.0	10.0	35.0	.0	1851.5	.0	.0	.0	1896.5
46.5	9.7	35.0	.0	1871.6	.0	.0	.0	1916.3
47.0	9.4	35.0	.0	1891.7	.0	.0	.0	1936.1
47.5	9.1	35.0	.0	1911.9	.0	.0	.0	1956.0
48.0	8.8	35.0	.0	1932.0	.0	.0	.0	1975.8
48.5	8.6	35.0	.0	1952.1	.0	.0	.0	1995.7
49.0	8.3	35.0	.0	1972.2	.0	.0	.0	2015.6
49.5	8.1	35.0	.0	1992.4	.0	.0	.0	2035.4
50.0	7.8	35.0	.0	2012.5	.0	.0	.0	2055.3
50.5	7.6	35.0	.0	2032.6	.0	.0	.0	2075.2
51.0	7.4	35.0	.0	2052.7	.0	.0	.0	2095.2
51.5	7.2	35.0	.0	2072.9	.0	.0	.0	2115.1
52.0	7.0	35.0	.0	2093.0	.0	.0	.0	2135.0
52.5	6.8	35.0	.0	2113.1	.0	.0	.0	2154.9

Elev (ft)	Strip Sur. (psf)	Uniform Sur. (psf)	Pore water (psf)	Static (psf)	Line Load (psf)	Point load (psf)	Seismic (psf)	Total Lateral (psf)
53.0	6.6	35.0	.0	2133.2	.0	.0	.0	2174.9
53.5	6.4	35.0	.0	2153.4	.0	.0	.0	2194.8
54.0	6.3	35.0	.0	2173.5	.0	.0	.0	2214.8
54.5	6.1	35.0	.0	2193.6	.0	.0	.0	2234.7
55.0	5.9	35.0	.0	2213.7	.0	.0	.0	2254.7
55.5	5.8	35.0	.0	2233.9	.0	.0	.0	2274.7
56.0	5.6	35.0	.0	2254.0	.0	.0	.0	2294.6
56.5	5.5	35.0	.0	2274.1	.0	.0	.0	2314.6
57.0	5.4	35.0	.0	2294.2	.0	.0	.0	2334.6
57.5	5.2	35.0	.0	2314.4	.0	.0	.0	2354.6
58.0	5.1	35.0	.0	2334.5	.0	.0	.0	2374.6
58.5	5.0	35.0	.0	2354.6	.0	.0	.0	2394.6
59.0	4.8	35.0	.0	2374.7	.0	.0	.0	2414.6
59.5	4.7	35.0	.0	2394.9	.0	.0	.0	2434.6
60.0	4.6	35.0	.0	2415.0	.0	.0	.0	2454.6
60.5	4.5	35.0	.0	2435.1	.0	.0	.0	2474.6
61.0	4.4	35.0	.0	2455.2	.0	.0	.0	2494.6
61.5	4.3	35.0	.0	2475.4	.0	.0	.0	2514.7
62.0	4.2	35.0	.0	2495.5	.0	.0	.0	2534.7
62.5	4.1	35.0	.0	2515.6	.0	.0	.0	2554.7
63.0	4.0	35.0	.0	2535.7	.0	.0	.0	2574.7
63.5	3.9	35.0	.0	2555.9	.0	.0	.0	2594.8
64.0	3.8	35.0	.0	2576.0	.0	.0	.0	2614.8
64.5	3.7	35.0	.0	2596.1	.0	.0	.0	2634.9
65.0	3.6	35.0	.0	2616.2	.0	.0	.0	2654.9
65.5	3.6	35.0	.0	2636.4	.0	.0	.0	2674.9
66.0	3.5	35.0	.0	2656.5	.0	.0	.0	2695.0