J.M.PILING

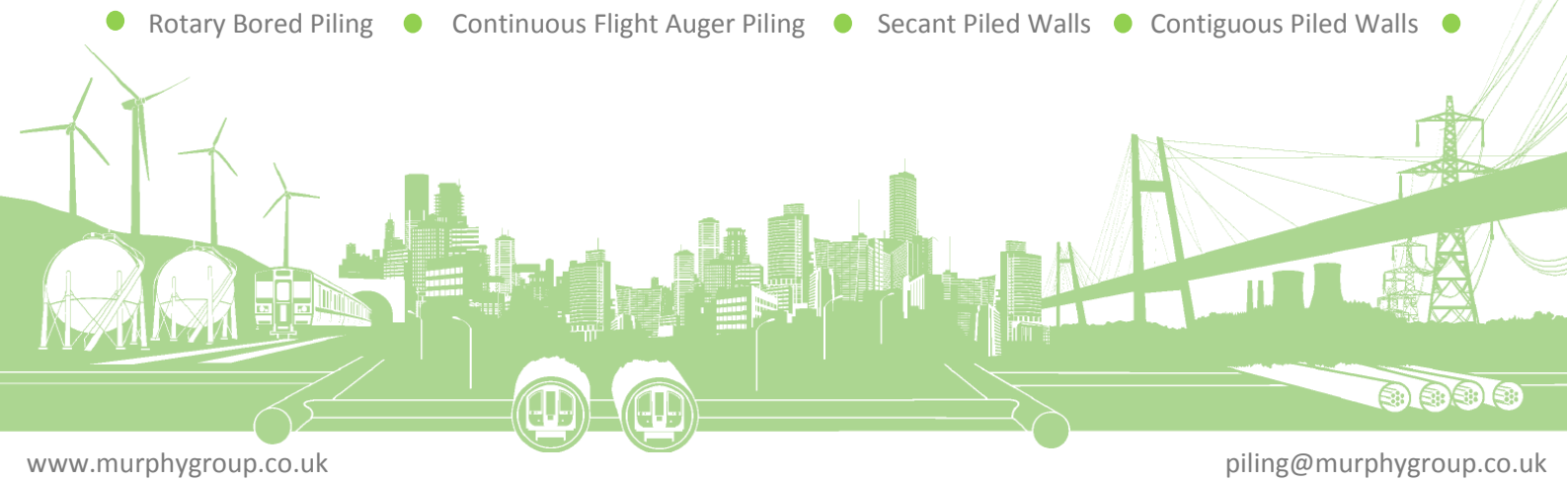
Celebrating 50 years

102 Camley Street, Camden, London

Bearing Pile Design Pack rev01

Ground Construction LTD

Rotary Bored Piling • Continuous Flight Auger Piling • Secant Piled Walls • Contiguous Piled Walls



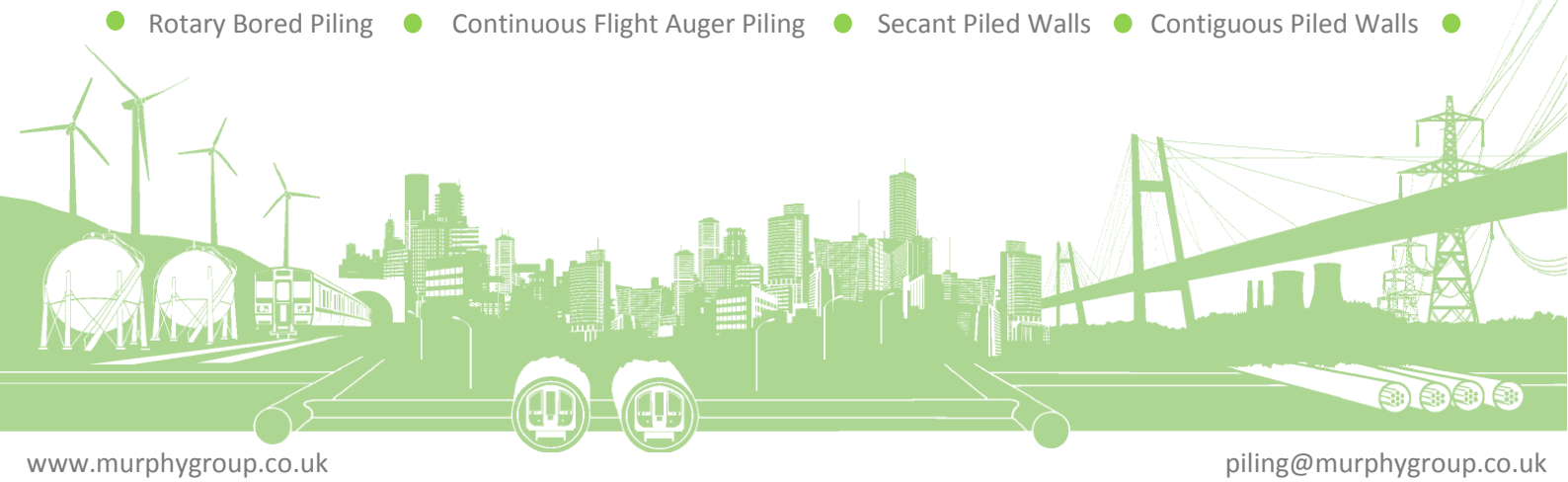
J.M.PILING

Celebrating 50 years

Depth V's Cohesion Calc Sheets

(400mm/600m/750mm)

Rotary Bored Piling • Continuous Flight Auger Piling • Secant Piled Walls • Contiguous Piled Walls •



MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**1.26**	**2.5**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6							=6m			=6m
6~7							=7m			=7m
7~8							=8m			=8m
8~9	123				37.2	37.2	=9m	55.9	93.1	=9m
9~10	140				42.3	79.5	=10m	63.7	143.2	=10m
10~11	140				42.3	121.9	=11m	63.7	185.5	=11m
11~12	140				42.3	164.2	=12m	63.7	227.9	=12m
12~13	140				42.3	206.5	=13m	63.7	270.2	=13m
13~14	140				42.3	248.9	=14m	63.7	312.5	=14m
14~15	140				42.3	291.2	=15m	63.7	354.9	=15m
15~16	140				42.3	333.5	=16m	63.7	397.2	=16m
16~17	140				42.3	375.9	=17m	63.7	439.5	=17m
17~18	140				42.3	418.2	=18m	63.7	481.9	=18m
18~19	140				42.3	460.6	=19m	63.7	524.2	=19m
19~20	150				45.4	505.9	=20m	68.2	574.1	=20m
20~21	160				48.4	554.3	=21m	72.8	627.1	=21m
21~22	170				51.4	605.7	=22m	77.3	683.0	=22m
22~23	180				54.4	660.1	=23m	81.9	742.0	=23m
23~24	190				57.5	717.6	=24m	86.4	804.0	=24m
24~25	200				60.5	778.1	=25m	91.0	869.0	=25m
25~26	210				63.5	841.6	=26m	95.5	937.1	=26m
26~27	220				66.5	908.1	=27m	100.0	1008.2	=27m
27~28	220				66.5	974.6	=28m	100.0	1074.7	=28m
28~29	220				66.5	1041.2	=29m	100.0	1141.2	=29m
29~30	220				66.5	1107.7	=30m	100.0	1207.7	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**1.89**	**2.5**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6							=6m			=6m
6~7							=7m			=7m
7~8							=8m			=8m
8~9	123				55.8	55.8	=9m	125.9	181.6	=9m
9~10	140				63.5	119.3	=10m	143.2	262.5	=10m
10~11	140				63.5	182.8	=11m	143.2	326.0	=11m
11~12	140				63.5	246.3	=12m	143.2	389.6	=12m
12~13	140				63.5	309.8	=13m	143.2	453.1	=13m
13~14	140				63.5	373.3	=14m	143.2	516.6	=14m
14~15	140				63.5	436.8	=15m	143.2	580.1	=15m
15~16	140				63.5	500.3	=16m	143.2	643.6	=16m
16~17	140				63.5	563.8	=17m	143.2	707.1	=17m
17~18	140				63.5	627.3	=18m	143.2	770.6	=18m
18~19	140				63.5	690.8	=19m	143.2	834.1	=19m
19~20	150				68.0	758.9	=20m	153.5	912.4	=20m
20~21	160				72.6	831.4	=21m	163.7	995.2	=21m
21~22	170				77.1	908.6	=22m	173.9	1082.5	=22m
22~23	180				81.6	990.2	=23m	184.2	1174.4	=23m
23~24	190				86.2	1076.4	=24m	194.4	1270.8	=24m
24~25	200				90.7	1167.1	=25m	204.6	1371.8	=25m
25~26	210				95.3	1262.4	=26m	214.9	1477.2	=26m
26~27	220				99.8	1362.2	=27m	225.1	1587.3	=27m
27~28	220				99.8	1462.0	=28m	225.1	1687.1	=28m
28~29	220				99.8	1561.7	=29m	225.1	1786.8	=29m
29~30	220				99.8	1661.5	=30m	225.1	1886.6	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**2.36**	**2.5**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6							=6m			=6m
6~7							=7m			=7m
7~8							=8m			=8m
8~9	123				69.7	69.7	=9m	196.2	265.9	=9m
9~10	140				79.3	149.0	=10m	223.4	372.3	=10m
10~11	140				79.3	228.3	=11m	223.4	451.6	=11m
11~12	140				79.3	307.6	=12m	223.4	530.9	=12m
12~13	140				79.3	386.9	=13m	223.4	610.2	=13m
13~14	140				79.3	466.1	=14m	223.4	689.5	=14m
14~15	140				79.3	545.4	=15m	223.4	768.8	=15m
15~16	140				79.3	624.7	=16m	223.4	848.1	=16m
16~17	140				79.3	704.0	=17m	223.4	927.4	=17m
17~18	140				79.3	783.3	=18m	223.4	1006.7	=18m
18~19	140				79.3	862.6	=19m	223.4	1086.0	=19m
19~20	150				85.0	947.6	=20m	239.3	1186.9	=20m
20~21	160				90.6	1038.2	=21m	255.3	1293.5	=21m
21~22	170				96.3	1134.5	=22m	271.2	1405.7	=22m
22~23	180				102.0	1236.5	=23m	287.2	1523.6	=23m
23~24	190				107.6	1344.1	=24m	303.1	1647.2	=24m
24~25	200				113.3	1457.3	=25m	319.1	1776.4	=25m
25~26	210				118.9	1576.3	=26m	335.0	1911.3	=26m
26~27	220				124.6	1700.9	=27m	351.0	2051.9	=27m
27~28	220				124.6	1825.5	=28m	351.0	2176.5	=28m
28~29	220				124.6	1950.1	=29m	351.0	2301.1	=29m
29~30	220				124.6	2074.7	=30m	351.0	2425.7	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**1.26**	**3**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6							=6m			=6m
6~7							=7m			=7m
7~8							=8m			=8m
8~9	123				31.0	31.0	=9m	46.6	77.6	=9m
9~10	140				35.3	66.3	=10m	53.1	119.3	=10m
10~11	140				35.3	101.6	=11m	53.1	154.6	=11m
11~12	140				35.3	136.8	=12m	53.1	189.9	=12m
12~13	140				35.3	172.1	=13m	53.1	225.2	=13m
13~14	140				35.3	207.4	=14m	53.1	260.5	=14m
14~15	140				35.3	242.7	=15m	53.1	295.7	=15m
15~16	140				35.3	278.0	=16m	53.1	331.0	=16m
16~17	140				35.3	313.2	=17m	53.1	366.3	=17m
17~18	140				35.3	348.5	=18m	53.1	401.6	=18m
18~19	140				35.3	383.8	=19m	53.1	436.9	=19m
19~20	150				37.8	421.6	=20m	56.8	478.4	=20m
20~21	160				40.3	461.9	=21m	60.6	522.5	=21m
21~22	170				42.8	504.8	=22m	64.4	569.2	=22m
22~23	180				45.4	550.1	=23m	68.2	618.3	=23m
23~24	190				47.9	598.0	=24m	72.0	670.0	=24m
24~25	200				50.4	648.4	=25m	75.8	724.2	=25m
25~26	210				52.9	701.3	=26m	79.6	780.9	=26m
26~27	220				55.4	756.8	=27m	83.4	840.1	=27m
27~28	220				55.4	812.2	=28m	83.4	895.6	=28m
28~29	220				55.4	867.6	=29m	83.4	951.0	=29m
29~30	220				55.4	923.1	=30m	83.4	1006.4	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**1.89**	**2.5**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6	75				34.0	34.0	=6m	76.7	110.8	=6m
6~7	91				41.3	75.3	=7m	93.1	168.4	=7m
7~8	107				48.5	123.8	=8m	109.5	233.3	=8m
8~9	123				55.8	179.6	=9m	125.9	305.5	=9m
9~10	140				63.5	243.1	=10m	143.2	386.4	=10m
10~11	140				63.5	306.6	=11m	143.2	449.9	=11m
11~12	140				63.5	370.1	=12m	143.2	513.4	=12m
12~13	140				63.5	433.6	=13m	143.2	576.9	=13m
13~14	140				63.5	497.1	=14m	143.2	640.4	=14m
14~15	140				63.5	560.6	=15m	143.2	703.9	=15m
15~16	140				63.5	624.2	=16m	143.2	767.4	=16m
16~17	140				63.5	687.7	=17m	143.2	830.9	=17m
17~18	140				63.5	751.2	=18m	143.2	894.4	=18m
18~19	140				63.5	814.7	=19m	143.2	957.9	=19m
19~20	150				68.0	882.7	=20m	153.5	1036.2	=20m
20~21	160				72.6	955.3	=21m	163.7	1119.0	=21m
21~22	170				77.1	1032.4	=22m	173.9	1206.3	=22m
22~23	180				81.6	1114.0	=23m	184.2	1298.2	=23m
23~24	190				86.2	1200.2	=24m	194.4	1394.6	=24m
24~25	200				90.7	1290.9	=25m	204.6	1495.6	=25m
25~26	210				95.3	1386.2	=26m	214.9	1601.1	=26m
26~27	220				99.8	1486.0	=27m	225.1	1711.1	=27m
27~28	220				99.8	1585.8	=28m	225.1	1810.9	=28m
28~29	220				99.8	1685.6	=29m	225.1	1910.7	=29m
29~30	220				99.8	1785.4	=30m	225.1	2010.5	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

MURPHY

J.M. PILING CO. LTD.

Calculations Sheet

Tender/Contract: **Camley ST, SISK** Sheet No: **2**

COL's 19.61 - 20.31

Compiled by: **Jo McNulty** Date:

Depth (m)	Cohesion (kN/m²) (Cu)	Alpha	Pile Circ (m)	F O S	Load/m (shaft)	Accumulative Load V. Depth (shaft)		End Bearing	Total Accum. Load V. Depth	
0~1		**0.6**	**2.36**	**2.5**						
1~2							=2m			=2m
2~3							=3m			=3m
3~4							=4m			=4m
4~5							=5m			=5m
5~6	75				42.5	42.5	=6m	119.7	162.1	=6m
6~7	91				51.5	94.0	=7m	145.2	239.2	=7m
7~8	107				60.6	154.6	=8m	170.7	325.3	=8m
8~9	123				69.7	224.3	=9m	196.2	420.5	=9m
9~10	140				79.3	303.6	=10m	223.4	526.9	=10m
10~11	140				79.3	382.9	=11m	223.4	606.2	=11m
11~12	140				79.3	462.2	=12m	223.4	685.5	=12m
12~13	140				79.3	541.5	=13m	223.4	764.8	=13m
13~14	140				79.3	620.8	=14m	223.4	844.1	=14m
14~15	140				79.3	700.1	=15m	223.4	923.4	=15m
15~16	140				79.3	779.4	=16m	223.4	1002.7	=16m
16~17	140				79.3	858.7	=17m	223.4	1082.0	=17m
17~18	140				79.3	938.0	=18m	223.4	1161.3	=18m
18~19	140				79.3	1017.3	=19m	223.4	1240.6	=19m
19~20	150				85.0	1102.2	=20m	239.3	1341.5	=20m
20~21	160				90.6	1192.8	=21m	255.3	1448.1	=21m
21~22	170				96.3	1289.1	=22m	271.2	1560.3	=22m
22~23	180				102.0	1391.1	=23m	287.2	1678.2	=23m
23~24	190				107.6	1498.7	=24m	303.1	1801.8	=24m
24~25	200				113.3	1612.0	=25m	319.1	1931.0	=25m
25~26	210				118.9	1730.9	=26m	335.0	2065.9	=26m
26~27	220				124.6	1855.5	=27m	351.0	2206.5	=27m
27~28	220				124.6	1980.1	=28m	351.0	2331.1	=28m
28~29	220				124.6	2104.7	=29m	351.0	2455.7	=29m
29~30	220				124.6	2229.4	=30m	351.0	2580.3	=30m
(Should we not hear from yourselves within 10 working days, we shall consider all the above to be acceptable)										

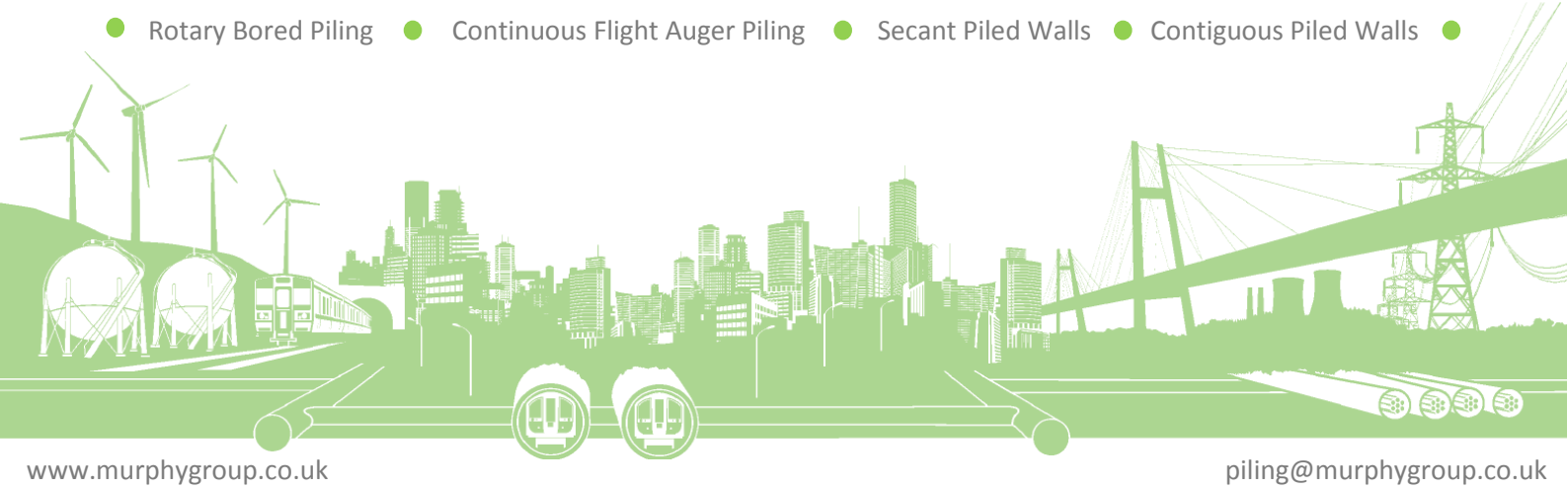
Jo McNulty		
Completed by	Checked by	3rd Party (if applicable)

J.M.PILING

Celebrating 50 years

RSCE Hz and Tension Cage Calculations and WALLAP Analysis

Rotary Bored Piling • Continuous Flight Auger Piling • Secant Piled Walls • Contiguous Piled Walls •



ROGER R STAGG - C.Eng M.I.Struct.E
Consultant Structural Engineer
Morphews Farm. Teston Road, Offham, Kent ME19 5NE
Tel: 07831 477209
Email: rrs@rogerstagg.co.uk

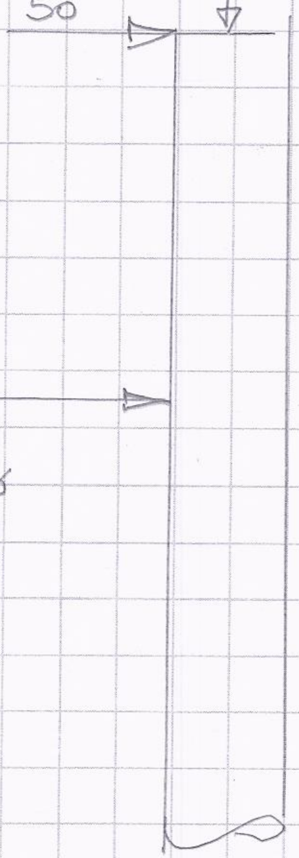
Job No 21315	**Sheet No** GP1	**Computer ref**	
PROJECT CAMLEY ST.	**D'snd** RS		
ITEM GENERAL PILING	**Ch'kd** DD	**Date** 6/10/15	**Rev**

PPL 27.4 ▽ *

700 – 1050 – 400ø (–600)
1150 – 2050 – 600ø (–38 – 150 – 380)
1700 – 2450 – 750ø

MG 24.9 ▽

50



▽ COL
400ø 22.66 — 21.16
600ø 22.66 – 19.61
750ø 21.86.

LONDON CLAY
C = 50 @ 24.9
+10/m
16.9 ▽
Cu = 140 ± 0.

= 400ø
= 600ø
= 750ø

* PPL IS ASSUMED AS BOREHOLE LEVEL, – 1m.

▽ TOE HIGHEST

CASES	ø	H₂	COL	TOE
– A	400	50	22.66	19.4
– B	400	50	21.16	6.2
– C	600	50	22.66.	5.5
– D	600	50	19.61	1.3
– E	750	50	21.86.	–1.5

ROGER R STAGG - C.Eng M.I.Struct.E
Consultant Structural Engineer
Morphews Farm. Teston Road, Offham, Kent ME19 5NE
Tel: 07831 477209
Email: rrs@rogerstagg.co.uk

Job No	21315
Sheet No	GP2
Computer ref	
PROJECT	D'snd
ITEM	Ch'kd
Date	Rev

RESULTS Δ M_{SLS} @ zero.

	Δ	M_{SLS}	@	zero.
-A	2	22.5	21.6	19.4
-B	1	21.2	20.2	18.0
-C	1	34.5	21.2	18.0
-D	1	30.1	18.2	15.2.
-E	0	19.3	20.00	16.0.

400 ⌀ piles M_{SLS} = 22.5

M_{US} = 33.75 N = 0 to 1575.

h_s/h = .5 f_y = 500 f_{cu} = 35

$M/h^3 f_{cu}$ = .015 $N/h^2 f_{cu}$ = 0 to .28

w = .05 for tension N = 0. A_s = 439 mm²

or 0 for N = 100 >

.4% = 503 mm²

NON TENSION ∴ PROVIDE 5H12 to level 15.00. R8@200.

Length 5000 Top of cage 4400 BELOW PPL

600 ⌀ piles M_{SLS} = 34.5

M_{US} = 52.

h_s/h = .6 $M/h^3 f_{cu}$ = .006 N/h^2 = 0 to .24

w = .01 for tension 0 & N = 1150

A_s = 198 mm². .4% = 1131.

NON TENSION: PROVIDE 6H16 to level 15.00 R8@250

Length 8000 Top of cage = 4.4 BELOW PPL

ROGER R STAGG - C.Eng M.I.Struct.E
Consultant Structural Engineer
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Tel: 07831 477209
Email: rrs@rogerstagg.co.uk

Job No	21315
Sheet No	GP3
Computer ref	
Date	
Rev	

PROJECT

D'snd

ITEM

Ch'kd

750ϕ pile

M_{sls} = 19.3 N = 1750 - 2450

w = 0.

·4% = 1767

Provide. 6H20 to level 1600. R8@250.

length = 7000. Top 4.4 BPPL

Summary all piles. Top of cage @ 4.4 BPPL

400ϕ.	5H12 x 5000	R8@200	
600ϕ	6H16 x 8000	R8@200	
750ϕ	6H20 x 7000	R8@200	

		Asc	Depth datum	ϕ
Tension	38	131	20.0	600
21.16.	150	518	17.9	600
21.86.	380	1311.	13.4.	600
col 21.86.	600	2070	4.4	450

38 kN 600ϕ No additional reinf.

150kN. - 600 kN see over

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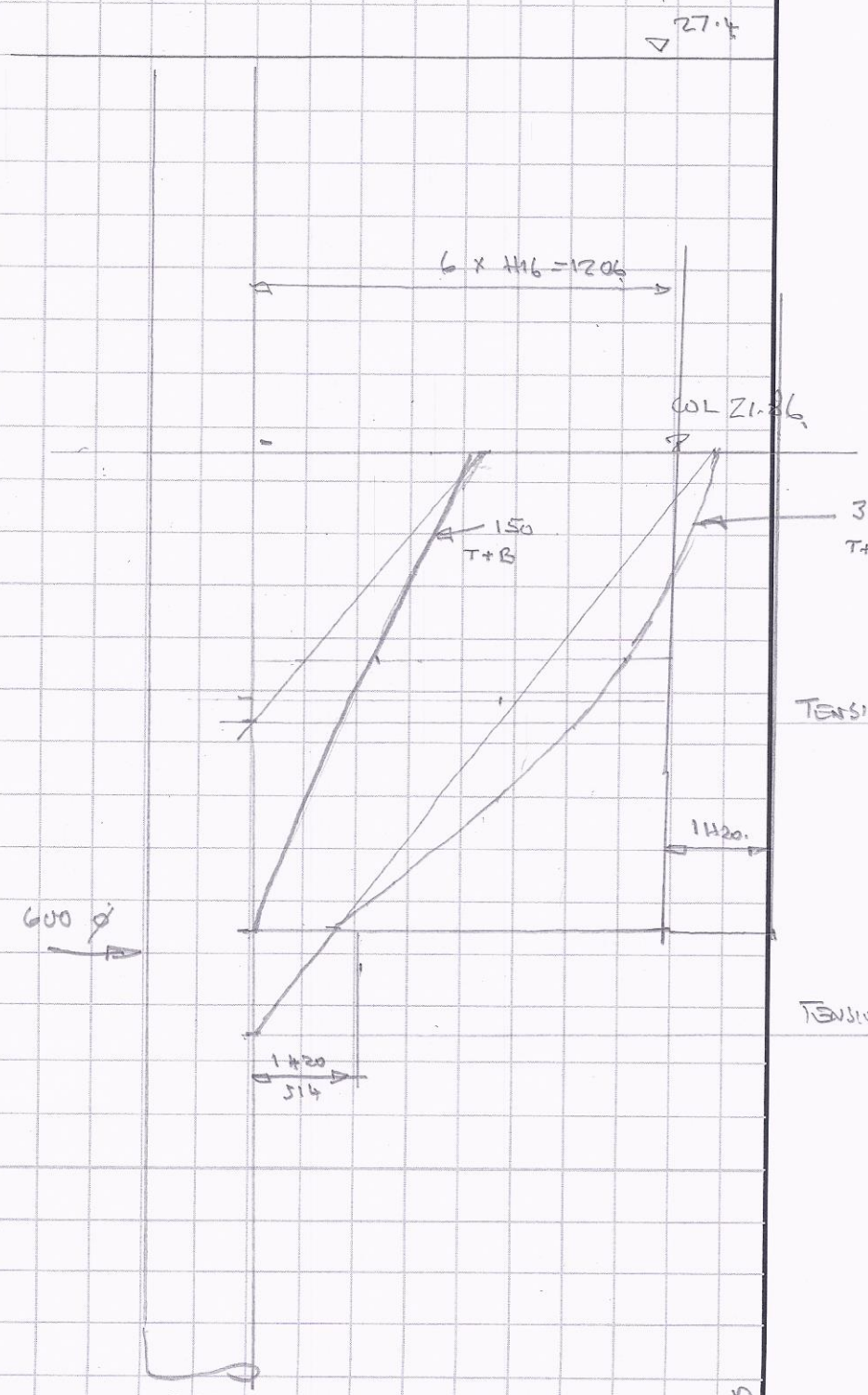
Job No	21315
Sheet No	GP4
Computer ref	

PROJECT	D'snd		
ITEM	Ch'kd	Date	Rev



TENSION DEPTH 150 KN

TENSION DEPTH 380 KN

∴ FOR TENSION = 150 NO ADDITIONAL REINF

FOR TENSION = 380 ADD 1 H20 x 900 Top @ 5.4 BPPL

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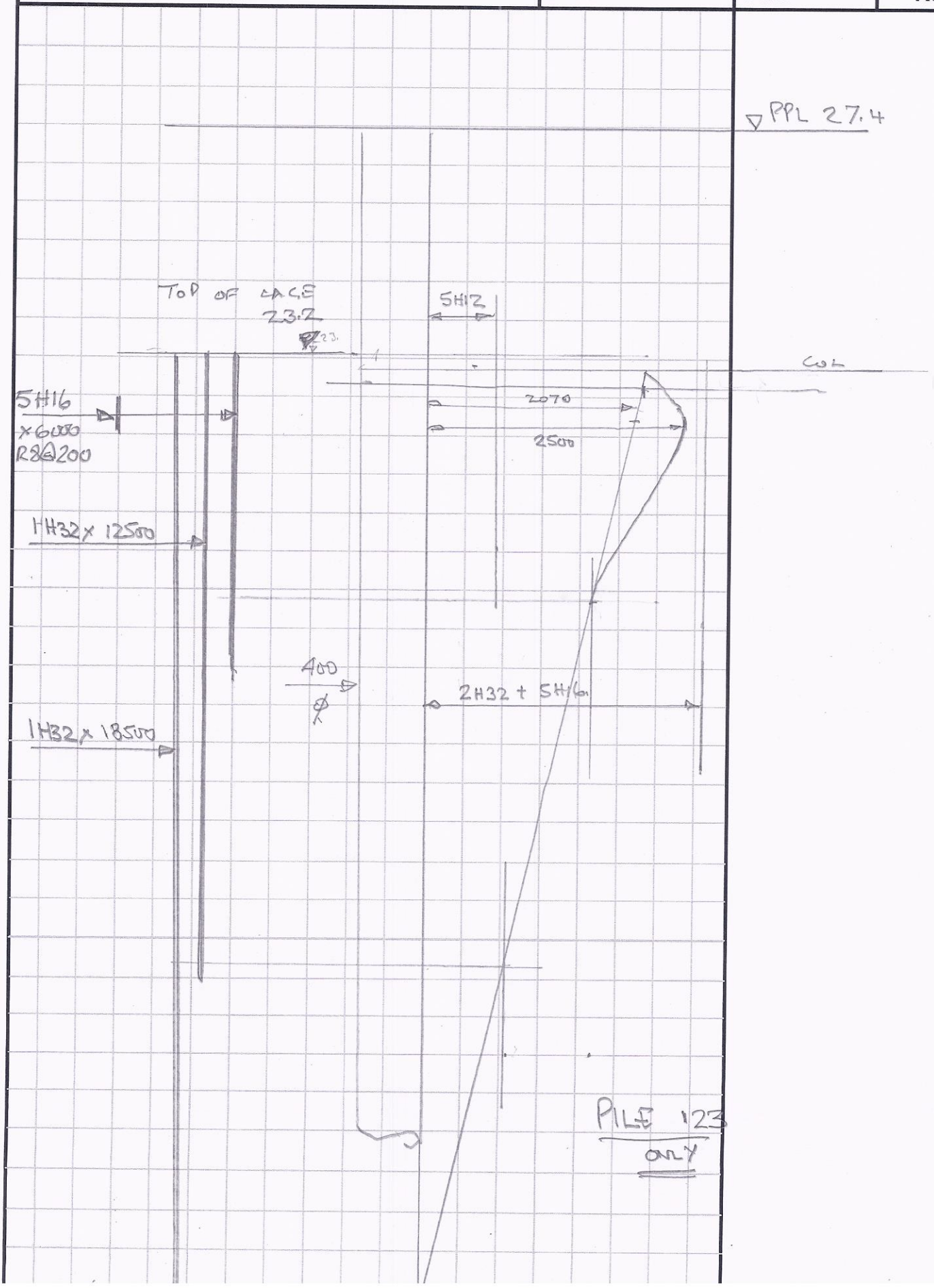
Job No	21315
Sheet No	gP5
Computer ref	
PROJECT	D'snd
ITEM	Ch'kd
Date	Rev



Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Active side	Passive side
1	22.66	1 London Clay	1 London Clay
2	16.90	2 London Clay	2 London Clay

SOIL PROPERTIES

No.	Soil type Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	London Clay	20.00	38500	1.000	OC	0.000	1.000	70.00d
	(22.66)		(7700)		(0.490)	(0.000)	(2.000)	(16.00)
2	London Clay	20.00	77000	1.100	OC	0.000	1.000	140.0d
					(0.490)	(0.000)	(2.000)	

Additional soil parameters associated with Ka and Kp

No.	Soil type Description	--- parameters for Ka --- Soil friction angle	Wall adhesion coeff.	Back-fill angle	--- parameters for Kp --- Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	London Clay	0.00	0.000	0.00	0.00	0.000	0.00
2	London Clay	0.00	0.000	0.00	0.00	0.000	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Active side	Passive side
Initial water table elevation	10.00	10.00

Automatic water pressure balancing at toe of pile : No

PILE PROPERTIES

Type of structure = Single Pile
Pile diameter = 0.40 m
Elevation of toe of pile = 19.40
Maximum finite element length = 0.20 m
Pile diameter = 0.40 m
Youngs modulus of pile E = 2.3000E+07 kN/m2
Moment of inertia of pile I = 1.2568E-03 m4
E.I = 28907 kN.m2
Yield Moment of pile = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN	Moment load kN.m	Moment restraint kN.m/rad	Partial factor/ Category
1	22.66	50.00	0	0	N/A

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Apply load no.1 at elevation 22.66

FACTORS OF SAFETY and ANALYSIS OPTIONS

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Apply load no.1 at elev. 22.66	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No. 1 Apply load no.1 at elevation 22.66

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.40m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
1	22.66	-164.51	0.002	1.46E-03	50.0	0.0	-50.0
2	22.53	-153.87	0.002	1.44E-03	41.7	5.9	
3	22.40	-142.67	0.001	1.40E-03	34.0	10.8	
4	22.20	-125.00	0.001	1.31E-03	23.3	16.5	
5	22.00	-107.65	0.001	1.18E-03	14.0	20.1	
6	21.80	-91.40	0.001	1.04E-03	6.0	22.1	
7	21.60	-76.83	0.001	8.87E-04	-0.7	22.5	
8	21.40	-64.36	0.000	7.34E-04	-6.3	21.8	
9	21.20	-50.02	0.000	5.89E-04	-10.9	20.1	
10	21.00	-26.43	0.000	4.59E-04	-14.0	17.5	
11	20.80	-7.29	0.000	3.49E-04	-15.3	14.5	
12	20.60	7.11	-0.000	2.59E-04	-15.3	11.3	
13	20.40	17.86	-0.000	1.91E-04	-14.3	8.3	
14	20.20	26.38	-0.000	1.43E-04	-12.6	5.6	
15	20.00	33.39	-0.000	1.12E-04	-10.2	3.3	
16	19.80	39.52	-0.000	9.59E-05	-7.3	1.5	
17	19.60	45.33	-0.000	8.91E-05	-3.9	0.4	
18	19.40	51.17	-0.000	8.77E-05	-0.0	0.0	

Node no.	Y coord	ACTIVE side: Water press. kN/m2	Effective stresses: Vertic-al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	22.66	0.00	0.00	0.00	420.00	0.00	0.00a	90194
2	22.53	0.00	2.60	0.00	440.28	0.00	0.00a	92539
3	22.40	0.00	5.20	0.00	460.56	0.00	0.00a	94884
4	22.20	0.00	9.20	0.00	491.77	0.00	0.00a	98491
5	22.00	0.00	13.20	0.00	522.97	0.00	0.00a	102099
6	21.80	0.00	17.20	0.00	554.17	0.00	0.00a	105707
7	21.60	0.00	21.20	0.00	585.37	0.00	0.00a	109315
8	21.40	0.00	25.20	0.00	616.58	0.00	0.00a	112922
9	21.20	0.00	29.20	0.00	647.78	4.19	4.19	116530
10	21.00	0.00	33.20	0.00	678.98	19.98	19.98	120138
11	20.80	0.00	37.20	0.00	710.18	33.55	33.55	123746
12	20.60	0.00	41.20	0.00	741.38	44.76	44.76	114394
13	20.40	0.00	45.20	0.00	772.59	54.13	54.13	117634
14	20.20	0.00	49.20	0.00	803.79	62.39	62.39	120875
15	20.00	0.00	53.20	0.00	834.99	69.89	69.89	124116
16	19.80	0.00	57.20	0.00	866.19	76.96	76.96	127356
17	19.60	0.00	61.20	0.00	897.40	83.86	83.86	130597
18	19.40	0.00	65.20	0.00	928.60	90.79	90.79	133838

(continued)

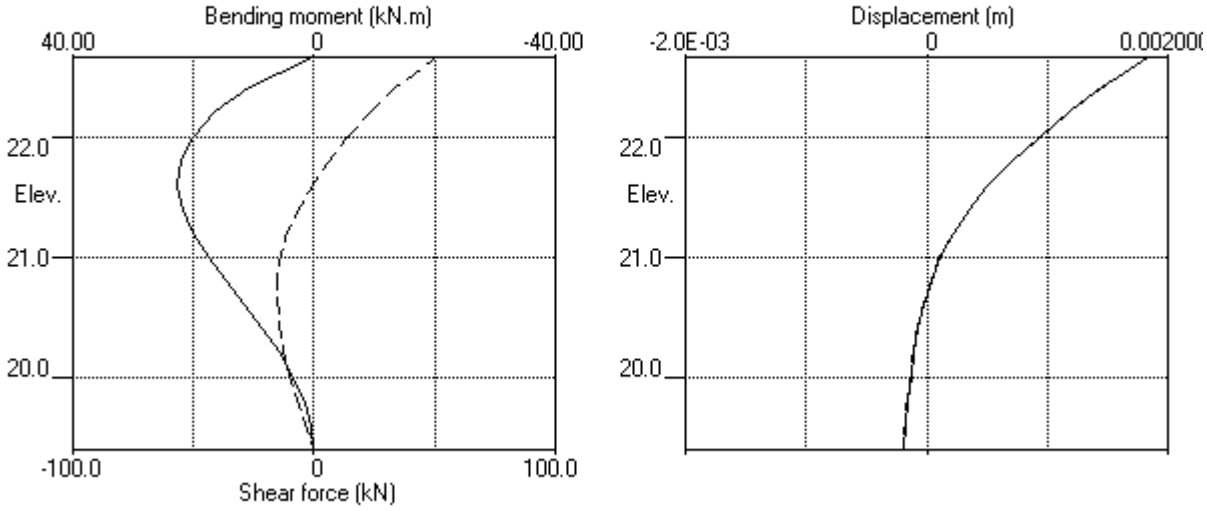
Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	PASSIVE side						
		Effective stresses					Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2		
1	22.66	0.00	0.00	0.00	420.00	164.51	164.51	90194
2	22.53	0.00	2.60	0.00	440.28	153.87	153.87	92539
3	22.40	0.00	5.20	0.00	460.56	142.67	142.67	94884
4	22.20	0.00	9.20	0.00	491.77	125.00	125.00	98491
5	22.00	0.00	13.20	0.00	522.97	107.65	107.65	102099
6	21.80	0.00	17.20	0.00	554.17	91.40	91.40	105707
7	21.60	0.00	21.20	0.00	585.37	76.83	76.83	109315
8	21.40	0.00	25.20	0.00	616.58	64.36	64.36	112922
9	21.20	0.00	29.20	0.00	647.78	54.21	54.21	116530
10	21.00	0.00	33.20	0.00	678.98	46.42	46.42	120138
11	20.80	0.00	37.20	0.00	710.18	40.85	40.85	123746
12	20.60	0.00	41.20	0.00	741.38	37.64	37.64	114394
13	20.40	0.00	45.20	0.00	772.59	36.27	36.27	117634
14	20.20	0.00	49.20	0.00	803.79	36.01	36.01	120875
15	20.00	0.00	53.20	0.00	834.99	36.51	36.51	124116
16	19.80	0.00	57.20	0.00	866.19	37.44	37.44	127356
17	19.60	0.00	61.20	0.00	897.40	38.54	38.54	130597
18	19.40	0.00	65.20	0.00	928.60	39.61	39.61	133838

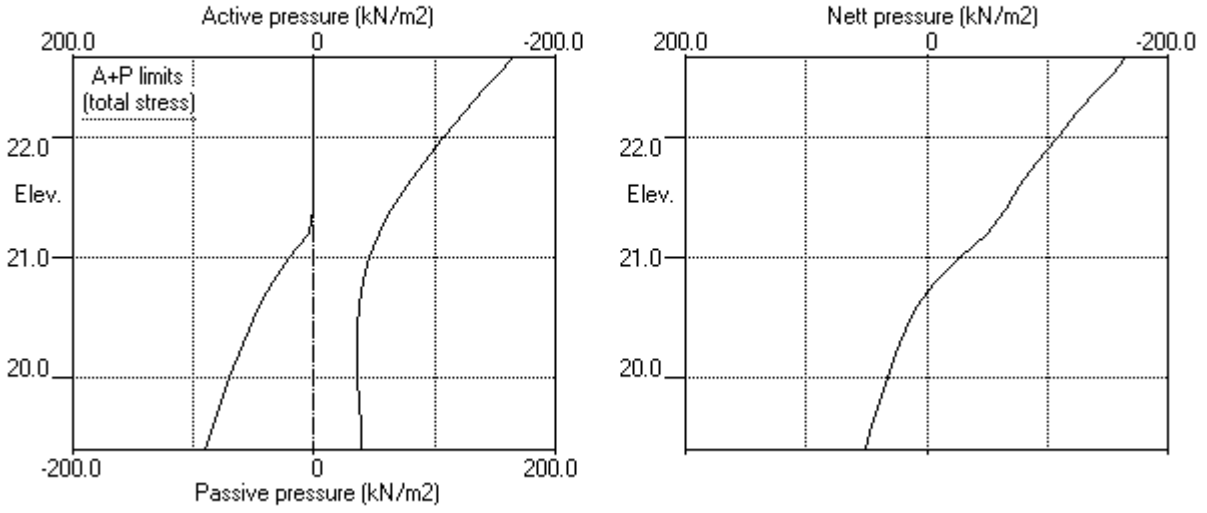
Note: 0.00a Soil pressure at active limit
123.45p Soil pressure at passive limit

Units: kN,m

Stage No.1 Apply load no.1 at elev. 22.66



Stage No.1 Apply load no.1 at elev. 22.66



Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.40m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
1	22.66	0.002	0.000	0.0	0.0	50.0	0.0
2	22.53	0.002	0.000	5.9	0.0	41.7	0.0
3	22.40	0.001	0.000	10.8	0.0	34.0	0.0
4	22.20	0.001	0.000	16.5	0.0	23.3	0.0
5	22.00	0.001	0.000	20.1	0.0	14.0	0.0
6	21.80	0.001	0.000	22.1	0.0	6.0	0.0
7	21.60	0.001	0.000	22.5	0.0	0.0	-0.7
8	21.40	0.000	0.000	21.8	0.0	0.0	-6.3
9	21.20	0.000	0.000	20.1	0.0	0.0	-10.9
10	21.00	0.000	0.000	17.5	0.0	0.0	-14.0
11	20.80	0.000	0.000	14.5	0.0	0.0	-15.3
12	20.60	0.000	-0.000	11.3	0.0	0.0	-15.3
13	20.40	0.000	-0.000	8.3	0.0	0.0	-14.3
14	20.20	0.000	-0.000	5.6	0.0	0.0	-12.6
15	20.00	0.000	-0.000	3.3	0.0	0.0	-10.2
16	19.80	0.000	-0.000	1.5	0.0	0.0	-7.3
17	19.60	0.000	-0.000	0.4	0.0	0.0	-3.9
18	19.40	0.000	-0.000	0.0	0.0	0.0	-0.0

Maximum and minimum bending moment and shear force at each stage

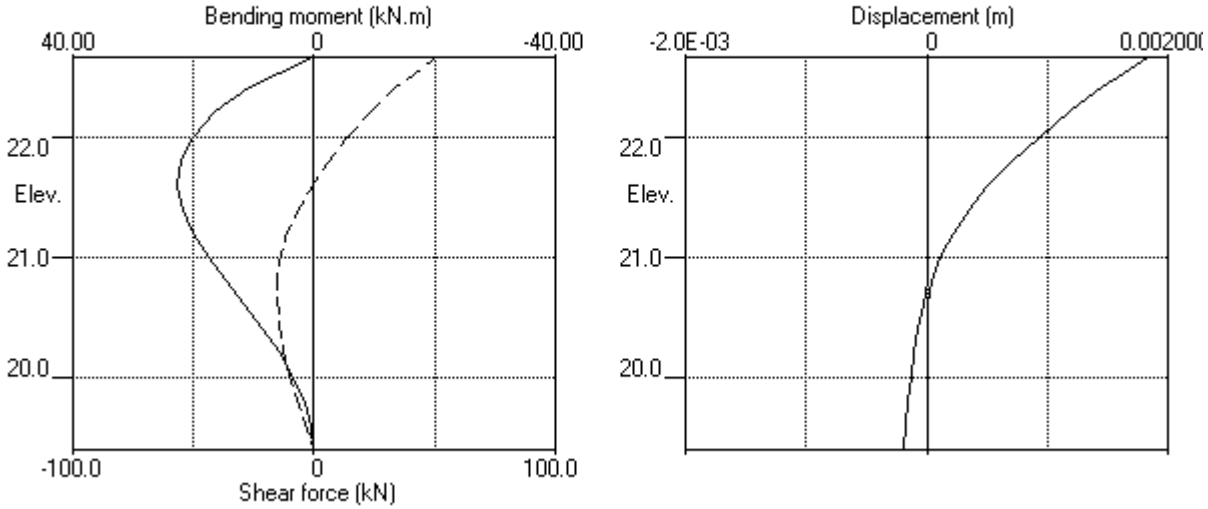
Stage no.	Bending moment maximum kN.m	Bending moment elev.	Bending moment minimum kN.m	Bending moment elev.	Shear force maximum kN	Shear force elev.	Shear force minimum kN	Shear force elev.
1	22.5	21.60	0.0	22.66	50.0	22.66	-15.3	20.60

Maximum and minimum displacement at each stage

Stage no.	Displacement maximum m	Displacement elev.	Displacement minimum m	Displacement elev.	Stage description
1	0.002	22.66	-0.000	19.40	Apply load no.1 at elev. 22.66

Units: kN,m

Bending moment, shear force, displacement envelopes



Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Active side	Passive side
1	21.16	1 London Clay	1 London Clay
2	16.90	2 London Clay	2 London Clay

SOIL PROPERTIES

-- Soil type -- No.	Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	London Clay	20.00	50000	1.000	OC	0.000	1.000	94.00d
	(21.16)		(7700)		(0.490)	(0.000)	(2.000)	(16.00)
2	London Clay	20.00	77000	1.100	OC	0.000	1.000	140.0d
					(0.490)	(0.000)	(2.000)	

Additional soil parameters associated with Ka and Kp

		--- parameters for Ka ---			--- parameters for Kp ---		
------- Soil type ------- No.	Description	Soil friction angle	Wall adhesion coeff.	Back-fill angle	Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	London Clay	0.00	0.000	0.00	0.00	0.000	0.00
2	London Clay	0.00	0.000	0.00	0.00	0.000	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Active side	Passive side
Initial water table elevation	10.00	10.00

Automatic water pressure balancing at toe of pile : No

PILE PROPERTIES

Type of structure = Single Pile
Pile diameter = 0.40 m
Elevation of toe of pile = 6.20
Maximum finite element length = 0.20 m
Pile diameter = 0.40 m
Youngs modulus of pile E = 2.3000E+07 kN/m2
Moment of inertia of pile I = 1.2568E-03 m4
E.I = 28907 kN.m2
Yield Moment of pile = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN	Moment load kN.m	Moment restraint kN.m/rad	Partial factor/ Category
1	21.16	50.00	0	0	N/A

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Apply load no.1 at elevation 21.16

FACTORS OF SAFETY and ANALYSIS OPTIONS

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Apply load no.1 at elev. 21.16	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No. 1 Apply load no.1 at elevation 21.16

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.40m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
1	21.16	-178.90	0.001	1.27E-03	50.0	0.0	-50.0
2	20.98	-159.17	0.001	1.25E-03	37.8	7.8	
3	20.80	-138.99	0.001	1.18E-03	27.1	13.6	
4	20.60	-117.16	0.001	1.07E-03	16.8	17.9	
5	20.40	-96.93	0.001	9.43E-04	8.3	20.3	
6	20.20	-79.04	0.000	7.99E-04	1.2	21.2	
7	20.00	-63.98	0.000	6.54E-04	-4.5	20.8	
8	19.80	-49.61	0.000	5.15E-04	-9.0	19.5	
9	19.60	-23.93	0.000	3.88E-04	-12.0	17.3	
10	19.40	-4.20	0.000	2.77E-04	-13.1	14.7	
11	19.20	7.18	-0.000	1.85E-04	-13.0	12.0	
12	19.00	14.02	-0.000	1.10E-04	-12.1	9.5	
13	18.80	18.11	-0.000	5.32E-05	-10.8	7.2	
14	18.60	19.98	-0.000	1.06E-05	-9.3	5.2	
15	18.40	20.17	-0.000	-1.91E-05	-7.7	3.5	
16	18.20	19.14	-0.000	-3.82E-05	-6.1	2.1	
17	18.00	17.31	-0.000	-4.88E-05	-4.7	1.0	
18	17.80	15.00	-0.000	-5.30E-05	-3.4	0.2	
19	17.60	12.50	-0.000	-5.24E-05	-2.3	-0.4	
20	17.40	10.01	-0.000	-4.88E-05	-1.4	-0.7	
21	17.20	7.67	-0.000	-4.32E-05	-0.7	-0.9	
22	17.05	6.07	-0.000	-3.83E-05	-0.3	-1.0	
23	16.90	4.63	-0.000	-3.33E-05	0.1	-1.0	
		4.31	-0.000	-3.33E-05	0.1	-1.0	
24	16.75	3.09	-0.000	-2.83E-05	0.3	-1.0	
25	16.60	2.07	-0.000	-2.35E-05	0.4	-0.9	
26	16.40	0.99	-0.000	-1.76E-05	0.6	-0.8	
27	16.20	0.20	-0.000	-1.26E-05	0.6	-0.7	
28	16.00	-0.35	0.000	-8.40E-06	0.6	-0.5	
29	15.80	-0.70	0.000	-5.02E-06	0.6	-0.4	
30	15.60	-0.89	0.000	-2.42E-06	0.5	-0.3	
31	15.40	-0.97	0.000	-5.12E-07	0.4	-0.2	
32	15.20	-0.96	0.000	8.13E-07	0.3	-0.2	
33	15.00	-0.89	0.000	1.66E-06	0.3	-0.1	
34	14.80	-0.79	0.000	2.12E-06	0.2	-0.0	
35	14.60	-0.67	0.000	2.31E-06	0.1	-0.0	
36	14.40	-0.55	0.000	2.29E-06	0.1	0.0	
37	14.20	-0.43	0.000	2.13E-06	0.1	0.0	
38	14.00	-0.33	0.000	1.89E-06	0.0	0.0	
39	13.80	-0.23	0.000	1.61E-06	0.0	0.0	
40	13.60	-0.16	0.000	1.31E-06	-0.0	0.0	
41	13.40	-0.09	0.000	1.03E-06	-0.0	0.0	
42	13.20	-0.05	0.000	7.83E-07	-0.0	0.0	
43	13.00	-0.01	0.000	5.62E-07	-0.0	0.0	
44	12.80	0.01	-0.000	3.76E-07	-0.0	0.0	
45	12.60	0.03	-0.000	2.28E-07	-0.0	0.0	

(continued)

Stage No.1 Apply load no.1 at elevation 21.16

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
46	12.40	0.04	-0.000	1.12E-07	-0.0	0.0	
47	12.20	0.04	-0.000	2.79E-08	-0.0	0.0	
48	12.00	0.04	-0.000	-3.12E-08	-0.0	0.0	
49	11.80	0.04	-0.000	-6.94E-08	-0.0	0.0	
50	11.60	0.03	-0.000	-9.08E-08	-0.0	0.0	
51	11.40	0.03	-0.000	-9.96E-08	-0.0	0.0	
52	11.20	0.02	-0.000	-9.93E-08	-0.0	-0.0	
53	11.00	0.02	-0.000	-9.29E-08	-0.0	-0.0	
54	10.80	0.01	-0.000	-8.27E-08	-0.0	-0.0	
55	10.60	0.01	-0.000	-7.06E-08	-0.0	-0.0	
56	10.40	0.01	-0.000	-5.80E-08	0.0	-0.0	
57	10.20	0.00	-0.000	-4.58E-08	0.0	-0.0	
58	10.00	0.00	-0.000	-3.47E-08	0.0	-0.0	
59	9.80	0.00	-0.000	-2.50E-08	0.0	-0.0	
60	9.60	-0.00	0.000	-1.69E-08	0.0	-0.0	
61	9.40	-0.00	0.000	-1.04E-08	0.0	-0.0	
62	9.20	-0.00	0.000	-5.34E-09	0.0	-0.0	
63	9.00	-0.00	0.000	-1.57E-09	0.0	-0.0	
64	8.80	-0.00	0.000	1.06E-09	0.0	-0.0	
65	8.60	-0.00	0.000	2.79E-09	0.0	-0.0	
66	8.40	-0.00	0.000	3.78E-09	0.0	-0.0	
67	8.20	-0.00	0.000	4.23E-09	0.0	-0.0	
68	8.00	-0.00	0.000	4.28E-09	0.0	0.0	
69	7.80	-0.00	0.000	4.09E-09	0.0	0.0	
70	7.60	-0.00	0.000	3.75E-09	0.0	0.0	
71	7.40	-0.00	0.000	3.35E-09	-0.0	0.0	
72	7.20	-0.00	0.000	2.96E-09	-0.0	0.0	
73	7.00	-0.00	0.000	2.63E-09	-0.0	0.0	
74	6.80	-0.00	0.000	2.37E-09	-0.0	0.0	
75	6.60	0.00	-0.000	2.21E-09	-0.0	0.0	
76	6.40	0.00	-0.000	2.13E-09	-0.0	0.0	
77	6.20	0.00	-0.000	2.11E-09	0.0	-0.0	

Node no.	Y coord	ACTIVE side: Water press. kN/m2	Effective stresses: Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	21.16	0.00	0.00	0.00	564.00	0.00	0.00a	120625
2	20.98	0.00	3.60	0.00	592.08	0.00	0.00a	123969
3	20.80	0.00	7.20	0.00	620.16	0.00	0.00a	127313
4	20.60	0.00	11.20	0.00	651.37	0.00	0.00a	131028
5	20.40	0.00	15.20	0.00	682.57	0.00	0.00a	134743
6	20.20	0.00	19.20	0.00	713.77	0.00	0.00a	138459
7	20.00	0.00	23.20	0.00	744.97	0.00	0.00a	142174
8	19.80	0.00	27.20	0.00	776.18	2.39	2.39	145889
9	19.60	0.00	31.20	0.00	807.38	19.24	19.24	149604
10	19.40	0.00	35.20	0.00	838.58	33.10	33.10	153320
11	19.20	0.00	39.20	0.00	869.78	42.79	42.79	111119
12	19.00	0.00	43.20	0.00	900.99	50.21	50.21	113748
13	18.80	0.00	47.20	0.00	932.19	56.25	56.25	116377
14	18.60	0.00	51.20	0.00	963.39	61.19	61.19	119006
15	18.40	0.00	55.20	0.00	994.59	65.29	65.29	121635
16	18.20	0.00	59.20	0.00	1025.80	68.77	68.77	124264
17	18.00	0.00	63.20	0.00	1057.00	71.85	71.85	126893
18	17.80	0.00	67.20	0.00	1088.20	74.70	74.70	129521
19	17.60	0.00	71.20	0.00	1119.40	77.45	77.45	132150

(continued)

Stage No.1 Apply load no.1 at elevation 21.16

Node no.	Y coord	ACTIVE side						
			Effective stresses					
		Water press.	Vertic -al	Active limit	Passive limit	Earth pressure	Total earth pressure	Soil stiffness coeff.
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m3
20	17.40	0.00	75.20	0.00	1150.61	80.20	80.20	134779
21	17.20	0.00	79.20	0.00	1181.81	83.03	83.03	137408
22	17.05	0.00	82.20	0.00	1205.21	85.23	85.23	139380
23	16.90	0.00	85.20	0.00	1228.61	87.52	87.52	141352
		0.00	85.20	0.00	1095.60	95.87	95.87	131447
24	16.75	0.00	88.20	0.00	1104.60	98.57	98.57	131447
25	16.60	0.00	91.20	0.00	1113.60	101.36	101.36	131447
26	16.40	0.00	95.20	0.00	1125.60	105.22	105.22	131447
27	16.20	0.00	99.20	0.00	1137.60	109.22	109.22	131447
28	16.00	0.00	103.20	0.00	1149.60	113.35	113.35	131540
29	15.80	0.00	107.20	0.00	1161.60	117.57	117.57	131540
30	15.60	0.00	111.20	0.00	1173.60	121.87	121.87	131540
31	15.40	0.00	115.20	0.00	1185.60	126.24	126.24	131540
32	15.20	0.00	119.20	0.00	1197.60	130.64	130.64	131540
33	15.00	0.00	123.20	0.00	1209.60	135.08	135.08	131540
34	14.80	0.00	127.20	0.00	1221.60	139.53	139.53	131540
35	14.60	0.00	131.20	0.00	1233.60	143.98	143.98	131540
36	14.40	0.00	135.20	0.00	1245.60	148.45	148.45	131540
37	14.20	0.00	139.20	0.00	1257.60	152.90	152.90	131540
38	14.00	0.00	143.20	0.00	1269.60	157.36	157.36	131540
39	13.80	0.00	147.20	0.00	1281.60	161.80	161.80	131540
40	13.60	0.00	151.20	0.00	1293.60	166.24	166.24	131540
41	13.40	0.00	155.20	0.00	1305.60	170.67	170.67	131540
42	13.20	0.00	159.20	0.00	1317.60	175.10	175.10	131540
43	13.00	0.00	163.20	0.00	1329.60	179.51	179.51	131540
44	12.80	0.00	167.20	0.00	1341.60	183.93	183.93	131489
45	12.60	0.00	171.20	0.00	1353.60	188.33	188.33	131489
46	12.40	0.00	175.20	0.00	1365.60	192.74	192.74	131489
47	12.20	0.00	179.20	0.00	1377.60	197.14	197.14	131489
48	12.00	0.00	183.20	0.00	1389.60	201.54	201.54	131489
49	11.80	0.00	187.20	0.00	1401.60	205.94	205.94	131489
50	11.60	0.00	191.20	0.00	1413.60	210.34	210.34	131489
51	11.40	0.00	195.20	0.00	1425.60	214.73	214.73	131489
52	11.20	0.00	199.20	0.00	1437.60	219.13	219.13	131489
53	11.00	0.00	203.20	0.00	1449.60	223.53	223.53	131489
54	10.80	0.00	207.20	0.00	1461.60	227.93	227.93	131489
55	10.60	0.00	211.20	0.00	1473.60	232.33	232.33	131489
56	10.40	0.00	215.20	0.00	1485.60	236.72	236.72	131489
57	10.20	0.00	219.20	0.00	1497.60	241.12	241.12	131489
58	10.00	0.00	223.20	0.00	1509.60	245.52	245.52	131489
59	9.80	2.00	225.20	0.00	1515.60	247.72	249.72	131489
60	9.60	4.00	227.20	0.00	1521.60	249.92	253.92	130802
61	9.40	6.00	229.20	0.00	1527.60	252.12	258.12	130802
62	9.20	8.00	231.20	0.00	1533.60	254.32	262.32	130802
63	9.00	10.00	233.20	0.00	1539.60	256.52	266.52	130802
64	8.80	12.00	235.20	0.00	1545.60	258.72	270.72	130802
65	8.60	14.00	237.20	0.00	1551.60	260.92	274.92	130802
66	8.40	16.00	239.20	0.00	1557.60	263.12	279.12	130802
67	8.20	18.00	241.20	0.00	1563.60	265.32	283.32	130802
68	8.00	20.00	243.20	0.00	1569.60	267.52	287.52	130802
69	7.80	22.00	245.20	0.00	1575.60	269.72	291.72	130802
70	7.60	24.00	247.20	0.00	1581.60	271.92	295.92	130802
71	7.40	26.00	249.20	0.00	1587.60	274.12	300.12	130802
72	7.20	28.00	251.20	0.00	1593.60	276.32	304.32	130802
73	7.00	30.00	253.20	0.00	1599.60	278.52	308.52	130802

(continued)

Stage No.1 Apply load no.1 at elevation 21.16

Node no.	Y coord	ACTIVE side: Effective stresses: Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
74	6.80	32.00	255.20	0.00	1605.60	280.72	312.72	130802
75	6.60	34.00	257.20	0.00	1611.60	282.92	316.92	283791
76	6.40	36.00	259.20	0.00	1617.60	285.12	321.12	283791
77	6.20	38.00	261.20	0.00	1623.60	287.32	325.32	283791

Node no.	Y coord	PASSIVE side: Effective stresses: Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	21.16	0.00	0.00	0.00	564.00	178.90	178.90	120625
2	20.98	0.00	3.60	0.00	592.08	159.17	159.17	123969
3	20.80	0.00	7.20	0.00	620.16	138.99	138.99	127313
4	20.60	0.00	11.20	0.00	651.37	117.16	117.16	131028
5	20.40	0.00	15.20	0.00	682.57	96.93	96.93	134743
6	20.20	0.00	19.20	0.00	713.77	79.04	79.04	138459
7	20.00	0.00	23.20	0.00	744.97	63.98	63.98	142174
8	19.80	0.00	27.20	0.00	776.18	52.01	52.01	145889
9	19.60	0.00	31.20	0.00	807.38	43.16	43.16	149604
10	19.40	0.00	35.20	0.00	838.58	37.30	37.30	153320
11	19.20	0.00	39.20	0.00	869.78	35.61	35.61	111119
12	19.00	0.00	43.20	0.00	900.99	36.19	36.19	113748
13	18.80	0.00	47.20	0.00	932.19	38.15	38.15	116377
14	18.60	0.00	51.20	0.00	963.39	41.21	41.21	119006
15	18.40	0.00	55.20	0.00	994.59	45.11	45.11	121635
16	18.20	0.00	59.20	0.00	1025.80	49.63	49.63	124264
17	18.00	0.00	63.20	0.00	1057.00	54.55	54.55	126893
18	17.80	0.00	67.20	0.00	1088.20	59.70	59.70	129521
19	17.60	0.00	71.20	0.00	1119.40	64.95	64.95	132150
20	17.40	0.00	75.20	0.00	1150.61	70.20	70.20	134779
21	17.20	0.00	79.20	0.00	1181.81	75.37	75.37	137408
22	17.05	0.00	82.20	0.00	1205.21	79.17	79.17	139380
23	16.90	0.00	85.20	0.00	1228.61	82.88	82.88	141352
		0.00	85.20	0.00	1095.60	91.57	91.57	131447
24	16.75	0.00	88.20	0.00	1104.60	95.47	95.47	131447
25	16.60	0.00	91.20	0.00	1113.60	99.28	99.28	131447
26	16.40	0.00	95.20	0.00	1125.60	104.22	104.22	131447
27	16.20	0.00	99.20	0.00	1137.60	109.02	109.02	131447
28	16.00	0.00	103.20	0.00	1149.60	113.69	113.69	131540
29	15.80	0.00	107.20	0.00	1161.60	118.27	118.27	131540
30	15.60	0.00	111.20	0.00	1173.60	122.77	122.77	131540
31	15.40	0.00	115.20	0.00	1185.60	127.20	127.20	131540
32	15.20	0.00	119.20	0.00	1197.60	131.60	131.60	131540
33	15.00	0.00	123.20	0.00	1209.60	135.96	135.96	131540
34	14.80	0.00	127.20	0.00	1221.60	140.31	140.31	131540
35	14.60	0.00	131.20	0.00	1233.60	144.66	144.66	131540
36	14.40	0.00	135.20	0.00	1245.60	148.99	148.99	131540
37	14.20	0.00	139.20	0.00	1257.60	153.34	153.34	131540
38	14.00	0.00	143.20	0.00	1269.60	157.68	157.68	131540
39	13.80	0.00	147.20	0.00	1281.60	162.04	162.04	131540
40	13.60	0.00	151.20	0.00	1293.60	166.40	166.40	131540
41	13.40	0.00	155.20	0.00	1305.60	170.77	170.77	131540
42	13.20	0.00	159.20	0.00	1317.60	175.14	175.14	131540
43	13.00	0.00	163.20	0.00	1329.60	179.53	179.53	131540

(continued)

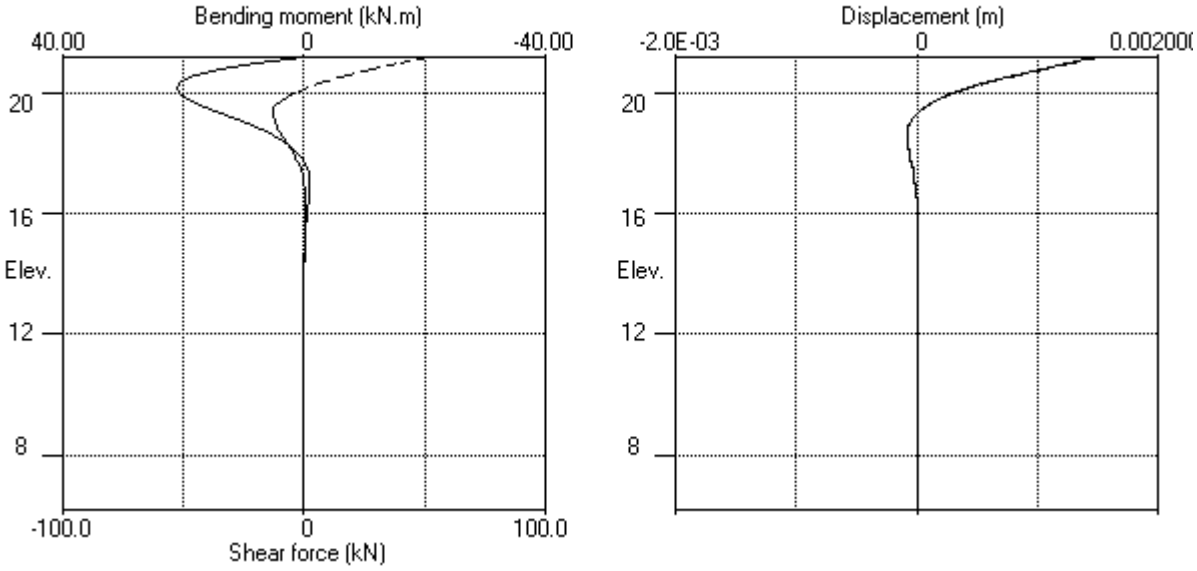
Stage No.1 Apply load no.1 at elevation 21.16

Node no.	Y coord	PASSIVE side						
		Effective stresses					Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2		
44	12.80	0.00	167.20	0.00	1341.60	183.91	183.91	131489
45	12.60	0.00	171.20	0.00	1353.60	188.31	188.31	131489
46	12.40	0.00	175.20	0.00	1365.60	192.70	192.70	131489
47	12.20	0.00	179.20	0.00	1377.60	197.10	197.10	131489
48	12.00	0.00	183.20	0.00	1389.60	201.50	201.50	131489
49	11.80	0.00	187.20	0.00	1401.60	205.90	205.90	131489
50	11.60	0.00	191.20	0.00	1413.60	210.30	210.30	131489
51	11.40	0.00	195.20	0.00	1425.60	214.71	214.71	131489
52	11.20	0.00	199.20	0.00	1437.60	219.11	219.11	131489
53	11.00	0.00	203.20	0.00	1449.60	223.51	223.51	131489
54	10.80	0.00	207.20	0.00	1461.60	227.91	227.91	131489
55	10.60	0.00	211.20	0.00	1473.60	232.31	232.31	131489
56	10.40	0.00	215.20	0.00	1485.60	236.72	236.72	131489
57	10.20	0.00	219.20	0.00	1497.60	241.12	241.12	131489
58	10.00	0.00	223.20	0.00	1509.60	245.52	245.52	131489
59	9.80	2.00	225.20	0.00	1515.60	247.72	249.72	131489
60	9.60	4.00	227.20	0.00	1521.60	249.92	253.92	130802
61	9.40	6.00	229.20	0.00	1527.60	252.12	258.12	130802
62	9.20	8.00	231.20	0.00	1533.60	254.32	262.32	130802
63	9.00	10.00	233.20	0.00	1539.60	256.52	266.52	130802
64	8.80	12.00	235.20	0.00	1545.60	258.72	270.72	130802
65	8.60	14.00	237.20	0.00	1551.60	260.92	274.92	130802
66	8.40	16.00	239.20	0.00	1557.60	263.12	279.12	130802
67	8.20	18.00	241.20	0.00	1563.60	265.32	283.32	130802
68	8.00	20.00	243.20	0.00	1569.60	267.52	287.52	130802
69	7.80	22.00	245.20	0.00	1575.60	269.72	291.72	130802
70	7.60	24.00	247.20	0.00	1581.60	271.92	295.92	130802
71	7.40	26.00	249.20	0.00	1587.60	274.12	300.12	130802
72	7.20	28.00	251.20	0.00	1593.60	276.32	304.32	130802
73	7.00	30.00	253.20	0.00	1599.60	278.52	308.52	130802
74	6.80	32.00	255.20	0.00	1605.60	280.72	312.72	130802
75	6.60	34.00	257.20	0.00	1611.60	282.92	316.92	283791
76	6.40	36.00	259.20	0.00	1617.60	285.12	321.12	283791
77	6.20	38.00	261.20	0.00	1623.60	287.32	325.32	283791

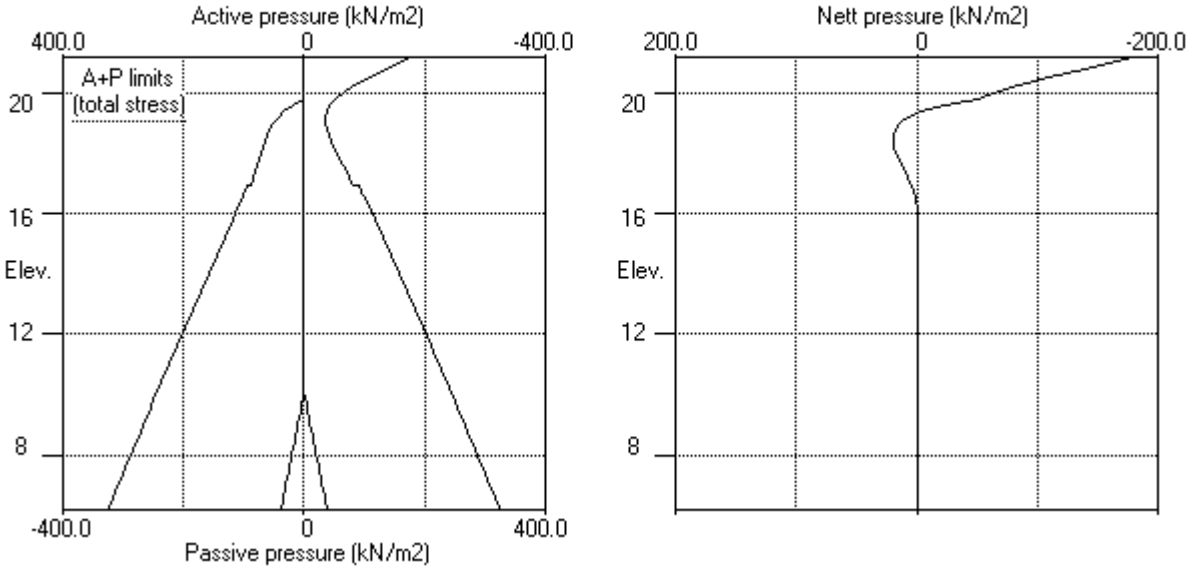
Note: 0.00a Soil pressure at active limit
123.45p Soil pressure at passive limit

Units: kN,m

Stage No.1 Apply load no.1 at elev. 21.16



Stage No.1 Apply load no.1 at elev. 21.16



Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.40m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
1	21.16	0.001	0.000	0.0	0.0	50.0	0.0
2	20.98	0.001	0.000	7.8	0.0	37.8	0.0
3	20.80	0.001	0.000	13.6	0.0	27.1	0.0
4	20.60	0.001	0.000	17.9	0.0	16.8	0.0
5	20.40	0.001	0.000	20.3	0.0	8.3	0.0
6	20.20	0.000	0.000	21.2	0.0	1.2	0.0
7	20.00	0.000	0.000	20.8	0.0	0.0	-4.5
8	19.80	0.000	0.000	19.5	0.0	0.0	-9.0
9	19.60	0.000	0.000	17.3	0.0	0.0	-12.0
10	19.40	0.000	0.000	14.7	0.0	0.0	-13.1
11	19.20	0.000	-0.000	12.0	0.0	0.0	-13.0
12	19.00	0.000	-0.000	9.5	0.0	0.0	-12.1
13	18.80	0.000	-0.000	7.2	0.0	0.0	-10.8
14	18.60	0.000	-0.000	5.2	0.0	0.0	-9.3
15	18.40	0.000	-0.000	3.5	0.0	0.0	-7.7
16	18.20	0.000	-0.000	2.1	0.0	0.0	-6.1
17	18.00	0.000	-0.000	1.0	0.0	0.0	-4.7
18	17.80	0.000	-0.000	0.2	0.0	0.0	-3.4
19	17.60	0.000	-0.000	0.0	-0.4	0.0	-2.3
20	17.40	0.000	-0.000	0.0	-0.7	0.0	-1.4
21	17.20	0.000	-0.000	0.0	-0.9	0.0	-0.7
22	17.05	0.000	-0.000	0.0	-1.0	0.0	-0.3
23	16.90	0.000	-0.000	0.0	-1.0	0.1	0.0
24	16.75	0.000	-0.000	0.0	-1.0	0.3	0.0
25	16.60	0.000	-0.000	0.0	-0.9	0.4	0.0
26	16.40	0.000	-0.000	0.0	-0.8	0.6	0.0
27	16.20	0.000	-0.000	0.0	-0.7	0.6	0.0
28	16.00	0.000	0.000	0.0	-0.5	0.6	0.0
29	15.80	0.000	0.000	0.0	-0.4	0.6	0.0
30	15.60	0.000	0.000	0.0	-0.3	0.5	0.0
31	15.40	0.000	0.000	0.0	-0.2	0.4	0.0
32	15.20	0.000	0.000	0.0	-0.2	0.3	0.0
33	15.00	0.000	0.000	0.0	-0.1	0.3	0.0
34	14.80	0.000	0.000	0.0	-0.0	0.2	0.0
35	14.60	0.000	0.000	0.0	-0.0	0.1	0.0
36	14.40	0.000	0.000	0.0	0.0	0.1	0.0
37	14.20	0.000	0.000	0.0	0.0	0.1	0.0
38	14.00	0.000	0.000	0.0	0.0	0.0	0.0
39	13.80	0.000	0.000	0.0	0.0	0.0	0.0
40	13.60	0.000	0.000	0.0	0.0	0.0	-0.0
41	13.40	0.000	0.000	0.0	0.0	0.0	-0.0
42	13.20	0.000	0.000	0.0	0.0	0.0	-0.0
43	13.00	0.000	0.000	0.0	0.0	0.0	-0.0
44	12.80	0.000	-0.000	0.0	0.0	0.0	-0.0
45	12.60	0.000	-0.000	0.0	0.0	0.0	-0.0

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m	kN.m	kN	kN
46	12.40	0.000	-0.000	0.0	0.0	0.0	-0.0
47	12.20	0.000	-0.000	0.0	0.0	0.0	-0.0
48	12.00	0.000	-0.000	0.0	0.0	0.0	-0.0
49	11.80	0.000	-0.000	0.0	0.0	0.0	-0.0
50	11.60	0.000	-0.000	0.0	0.0	0.0	-0.0
51	11.40	0.000	-0.000	0.0	0.0	0.0	-0.0
52	11.20	0.000	-0.000	0.0	-0.0	0.0	-0.0
53	11.00	0.000	-0.000	0.0	-0.0	0.0	-0.0
54	10.80	0.000	-0.000	0.0	-0.0	0.0	-0.0
55	10.60	0.000	-0.000	0.0	-0.0	0.0	-0.0
56	10.40	0.000	-0.000	0.0	-0.0	0.0	0.0
57	10.20	0.000	-0.000	0.0	-0.0	0.0	0.0
58	10.00	0.000	-0.000	0.0	-0.0	0.0	0.0
59	9.80	0.000	-0.000	0.0	-0.0	0.0	0.0
60	9.60	0.000	0.000	0.0	-0.0	0.0	0.0
61	9.40	0.000	0.000	0.0	-0.0	0.0	0.0
62	9.20	0.000	0.000	0.0	-0.0	0.0	0.0
63	9.00	0.000	0.000	0.0	-0.0	0.0	0.0
64	8.80	0.000	0.000	0.0	-0.0	0.0	0.0
65	8.60	0.000	0.000	0.0	-0.0	0.0	0.0
66	8.40	0.000	0.000	0.0	-0.0	0.0	0.0
67	8.20	0.000	0.000	0.0	-0.0	0.0	0.0
68	8.00	0.000	0.000	0.0	0.0	0.0	0.0
69	7.80	0.000	0.000	0.0	0.0	0.0	0.0
70	7.60	0.000	0.000	0.0	0.0	0.0	0.0
71	7.40	0.000	0.000	0.0	0.0	0.0	-0.0
72	7.20	0.000	0.000	0.0	0.0	0.0	-0.0
73	7.00	0.000	0.000	0.0	0.0	0.0	-0.0
74	6.80	0.000	0.000	0.0	0.0	0.0	-0.0
75	6.60	0.000	-0.000	0.0	0.0	0.0	-0.0
76	6.40	0.000	-0.000	0.0	0.0	0.0	-0.0
77	6.20	0.000	-0.000	0.0	-0.0	0.0	0.0

Maximum and minimum bending moment and shear force at each stage

Stage no.	Bending moment maximum	Bending moment elev.	Bending moment minimum	Bending moment elev.	Shear force maximum	Shear force elev.	Shear force minimum	Shear force elev.
	kN.m		kN.m		kN		kN	
1	21.2	20.20	-1.0	16.90	50.0	21.16	-13.1	19.40

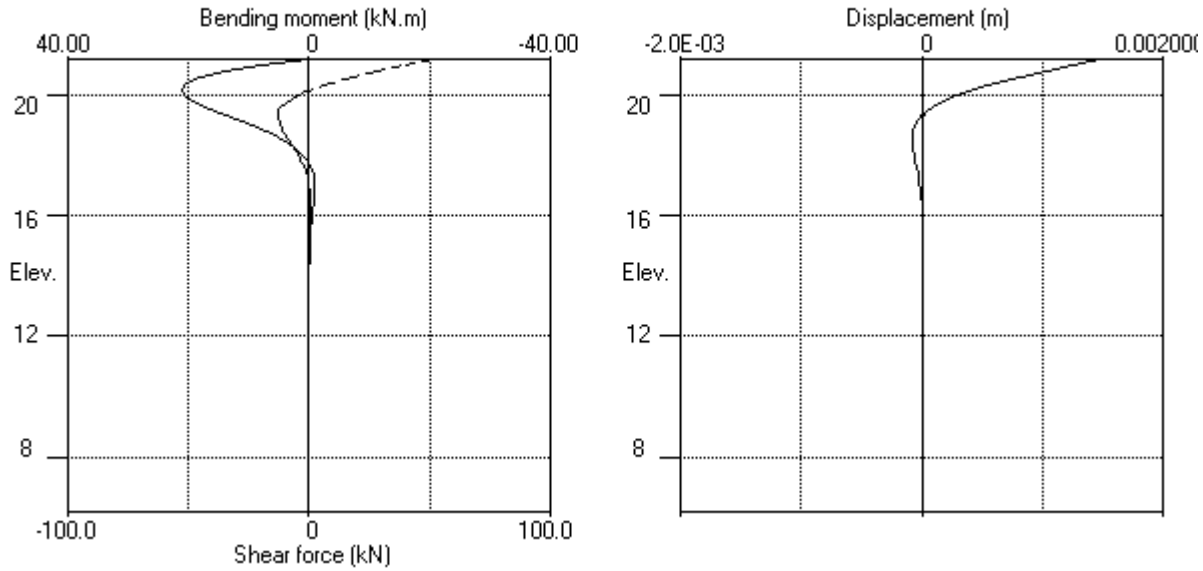
Maximum and minimum displacement at each stage

Stage no.	Displacement maximum	Displacement elev.	Displacement minimum	Displacement elev.	Stage description
	m		m		
1	0.001	21.16	-0.000	18.60	Apply load no.1 at elev. 21.16

ROGER STAGG ASSOCIATES, Dartford, Kent | Sheet No.
Program: WALLAP Version 6.05 Revision A45.B58.R49 | Job No. 21315
Licensed from GEOSOLVE | Made by : RS
Data filename/Run ID: 21315-B |
Camley St | Date: 6-10-2015
General piling 400 dia CoL 21.16 Hz = 50 | Checked :

Units: kN,m

Bending moment, shear force, displacement envelopes



Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Active side	Passive side
1	22.66	1 London Clay	1 London Clay
2	16.90	2 London Clay	2 London Clay

SOIL PROPERTIES

No.	Soil type Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	London Clay	20.00	38500	1.000	OC	0.000	1.000	70.00d
	(22.66)		(7700)		(0.490)	(0.000)	(2.000)	(16.00)
2	London Clay	20.00	77000	1.100	OC	0.000	1.000	140.0d
					(0.490)	(0.000)	(2.000)	

Additional soil parameters associated with Ka and Kp

No.	Soil type Description	--- parameters for Ka --- Soil friction angle	Wall adhesion coeff.	Back-fill angle	--- parameters for Kp --- Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	London Clay	0.00	0.000	0.00	0.00	0.000	0.00
2	London Clay	0.00	0.000	0.00	0.00	0.000	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Active side	Passive side
Initial water table elevation	10.00	10.00

Automatic water pressure balancing at toe of pile : No

PILE PROPERTIES

Type of structure = Single Pile
Pile diameter = 0.60 m
Elevation of toe of pile = 5.50
Maximum finite element length = 0.20 m
Pile diameter = 0.60 m
Youngs modulus of pile E = 2.3000E+07 kN/m2
Moment of inertia of pile I = 6.3625E-03 m4
E.I = 146339 kN.m2
Yield Moment of pile = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN	Moment load kN.m	Moment restraint kN.m/rad	Partial factor/ Category
1	22.66	50.00	0	0	N/A

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Apply load no.1 at elevation 22.66

FACTORS OF SAFETY and ANALYSIS OPTIONS

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Apply load no.1 at elev. 22.66	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No. 1 Apply load no.1 at elevation 22.66

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.60m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
1	22.66	-63.98	0.001	5.94E-04	50.0	0.0	-50.0
2	22.53	-63.26	0.001	5.91E-04	45.0	6.2	
3	22.40	-62.32	0.001	5.83E-04	40.1	11.7	
4	22.20	-60.59	0.001	5.62E-04	32.8	19.0	
5	22.00	-58.64	0.001	5.32E-04	25.6	24.8	
6	21.80	-56.63	0.001	4.95E-04	18.7	29.2	
7	21.60	-54.71	0.000	4.53E-04	12.0	32.2	
8	21.40	-53.00	0.000	4.08E-04	5.6	34.0	
9	21.20	-44.81	0.000	3.61E-04	-0.3	34.5	
10	21.00	-34.82	0.000	3.15E-04	-5.1	33.9	
11	20.80	-25.75	0.000	2.69E-04	-8.7	32.5	
12	20.60	-17.67	0.000	2.26E-04	-11.3	30.4	
13	20.40	-10.60	0.000	1.86E-04	-13.0	28.0	
14	20.20	-4.55	0.000	1.50E-04	-13.9	25.2	
15	20.00	0.35	-0.000	1.17E-04	-14.2	22.4	
16	19.80	3.25	-0.000	8.93E-05	-14.0	19.5	
17	19.60	5.53	-0.000	6.45E-05	-13.4	16.8	
18	19.40	7.24	-0.000	4.33E-05	-12.7	14.2	
19	19.20	8.45	-0.000	2.56E-05	-11.7	11.7	
20	19.00	9.21	-0.000	1.11E-05	-10.7	9.5	
21	18.80	9.58	-0.000	-3.86E-07	-9.6	7.4	
22	18.60	9.64	-0.000	-9.33E-06	-8.4	5.7	
23	18.40	9.43	-0.000	-1.59E-05	-7.3	4.1	
24	18.20	9.01	-0.000	-2.06E-05	-6.1	2.8	
25	18.00	8.43	-0.000	-2.36E-05	-5.1	1.6	
26	17.80	7.74	-0.000	-2.52E-05	-4.1	0.7	
27	17.60	6.99	-0.000	-2.57E-05	-3.2	-0.0	
28	17.40	6.19	-0.000	-2.53E-05	-2.5	-0.6	
29	17.20	5.39	-0.000	-2.42E-05	-1.8	-1.0	
30	17.05	4.80	-0.000	-2.30E-05	-1.3	-1.2	
31	16.90	4.22	-0.000	-2.17E-05	-0.9	-1.4	
		3.92	-0.000	-2.17E-05	-0.9	-1.4	
32	16.75	3.37	-0.000	-2.02E-05	-0.6	-1.5	
33	16.60	2.85	-0.000	-1.86E-05	-0.3	-1.6	
34	16.40	2.22	-0.000	-1.64E-05	0.0	-1.6	
35	16.20	1.67	-0.000	-1.43E-05	0.2	-1.6	
36	16.00	1.20	-0.000	-1.22E-05	0.4	-1.5	
37	15.80	0.80	-0.000	-1.02E-05	0.5	-1.4	
38	15.60	0.47	-0.000	-8.42E-06	0.6	-1.3	
39	15.40	0.20	-0.000	-6.75E-06	0.7	-1.2	
40	15.20	-0.01	0.000	-5.27E-06	0.7	-1.0	
41	15.00	-0.18	0.000	-3.97E-06	0.7	-0.9	
42	14.80	-0.30	0.000	-2.85E-06	0.6	-0.8	
43	14.60	-0.38	0.000	-1.91E-06	0.6	-0.6	
44	14.40	-0.43	0.000	-1.12E-06	0.5	-0.5	
45	14.20	-0.46	0.000	-4.84E-07	0.5	-0.4	

(continued)

Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
46	14.00	-0.47	0.000	2.25E-08	0.4	-0.3	
47	13.80	-0.46	0.000	4.12E-07	0.4	-0.2	
48	13.60	-0.44	0.000	7.00E-07	0.3	-0.2	
49	13.40	-0.41	0.000	9.00E-07	0.3	-0.1	
50	13.20	-0.38	0.000	1.02E-06	0.2	-0.1	
51	13.00	-0.34	0.000	1.09E-06	0.2	-0.0	
52	12.80	-0.30	0.000	1.11E-06	0.1	0.0	
53	12.60	-0.26	0.000	1.09E-06	0.1	0.0	
54	12.40	-0.22	0.000	1.04E-06	0.1	0.0	
55	12.20	-0.19	0.000	9.80E-07	0.1	0.1	
56	12.00	-0.15	0.000	8.98E-07	0.0	0.1	
57	11.80	-0.12	0.000	8.09E-07	0.0	0.1	
58	11.60	-0.10	0.000	7.15E-07	-0.0	0.1	
59	11.40	-0.07	0.000	6.22E-07	-0.0	0.1	
60	11.20	-0.05	0.000	5.32E-07	-0.0	0.1	
61	11.00	-0.04	0.000	4.46E-07	-0.0	0.1	
62	10.80	-0.02	0.000	3.67E-07	-0.0	0.1	
63	10.60	-0.01	0.000	2.95E-07	-0.0	0.0	
64	10.40	0.00	-0.000	2.31E-07	-0.0	0.0	
65	10.20	0.01	-0.000	1.75E-07	-0.0	0.0	
66	10.00	0.01	-0.000	1.26E-07	-0.0	0.0	
67	9.80	0.02	-0.000	8.53E-08	-0.0	0.0	
68	9.60	0.02	-0.000	5.11E-08	-0.0	0.0	
69	9.40	0.02	-0.000	2.32E-08	-0.0	0.0	
70	9.20	0.02	-0.000	1.17E-09	-0.0	0.0	
71	9.00	0.02	-0.000	-1.59E-08	-0.0	0.0	
72	8.80	0.02	-0.000	-2.86E-08	-0.0	0.0	
73	8.60	0.02	-0.000	-3.76E-08	-0.0	0.0	
74	8.40	0.02	-0.000	-4.35E-08	-0.0	0.0	
75	8.20	0.02	-0.000	-4.69E-08	-0.0	0.0	
76	8.00	0.01	-0.000	-4.83E-08	-0.0	0.0	
77	7.80	0.01	-0.000	-4.83E-08	-0.0	-0.0	
78	7.60	0.01	-0.000	-4.71E-08	-0.0	-0.0	
79	7.40	0.01	-0.000	-4.53E-08	-0.0	-0.0	
80	7.20	0.01	-0.000	-4.30E-08	-0.0	-0.0	
81	7.00	0.01	-0.000	-4.06E-08	0.0	-0.0	
82	6.80	0.00	-0.000	-3.83E-08	0.0	-0.0	
83	6.60	0.00	-0.000	-3.62E-08	0.0	-0.0	
84	6.40	0.00	-0.000	-3.44E-08	0.0	-0.0	
85	6.20	0.00	-0.000	-3.31E-08	0.0	-0.0	
86	6.00	-0.00	0.000	-3.22E-08	0.0	-0.0	
87	5.80	-0.00	0.000	-3.17E-08	0.0	-0.0	
88	5.65	-0.01	0.000	-3.15E-08	0.0	-0.0	
89	5.50	-0.01	0.000	-3.15E-08	0.0	0.0	

Node no.	Y coord	ACTIVE side: Effective stresses: Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	22.66	0.00	0.00	0.00	420.00	0.00	0.00a	63077
2	22.53	0.00	2.60	0.00	440.28	0.00	0.00a	64717
3	22.40	0.00	5.20	0.00	460.56	0.00	0.00a	66357
4	22.20	0.00	9.20	0.00	491.77	0.00	0.00a	68880
5	22.00	0.00	13.20	0.00	522.97	0.00	0.00a	71403
6	21.80	0.00	17.20	0.00	554.17	0.00	0.00a	73926
7	21.60	0.00	21.20	0.00	585.37	0.00	0.00a	76449

(continued)

Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	ACTIVE side						
			Effective stresses					
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
8	21.40	0.00	25.20	0.00	616.58	0.00	0.00a	78972
9	21.20	0.00	29.20	0.00	647.78	6.79	6.79	81495
10	21.00	0.00	33.20	0.00	678.98	15.79	15.79	84018
11	20.80	0.00	37.20	0.00	710.18	24.32	24.32	86541
12	20.60	0.00	41.20	0.00	741.38	32.37	32.37	89064
13	20.40	0.00	45.20	0.00	772.59	39.90	39.90	91587
14	20.20	0.00	49.20	0.00	803.79	46.92	46.92	94110
15	20.00	0.00	53.20	0.00	834.99	53.38	53.38	68109
16	19.80	0.00	57.20	0.00	866.19	58.83	58.83	69887
17	19.60	0.00	61.20	0.00	897.40	63.97	63.97	71666
18	19.40	0.00	65.20	0.00	928.60	68.82	68.82	73444
19	19.20	0.00	69.20	0.00	959.80	73.42	73.42	75222
20	19.00	0.00	73.20	0.00	991.00	77.80	77.80	77001
21	18.80	0.00	77.20	0.00	1022.21	81.99	81.99	78779
22	18.60	0.00	81.20	0.00	1053.41	86.02	86.02	80557
23	18.40	0.00	85.20	0.00	1084.61	89.91	89.91	82335
24	18.20	0.00	89.20	0.00	1115.81	93.70	93.70	84114
25	18.00	0.00	93.20	0.00	1147.02	97.42	97.42	85892
26	17.80	0.00	97.20	0.00	1178.22	101.07	101.07	87670
27	17.60	0.00	101.20	0.00	1209.42	104.69	104.69	89449
28	17.40	0.00	105.20	0.00	1240.62	108.30	108.30	91227
29	17.20	0.00	109.20	0.00	1271.83	111.90	111.90	93005
30	17.05	0.00	112.20	0.00	1295.23	114.60	114.60	94339
31	16.90	0.00	115.20	0.00	1318.63	117.31	117.31	95673
		0.00	115.20	0.00	1185.60	128.68	128.68	88915
32	16.75	0.00	118.20	0.00	1194.60	131.70	131.70	88915
33	16.60	0.00	121.20	0.00	1203.60	134.74	134.74	88915
34	16.40	0.00	125.20	0.00	1215.60	138.83	138.83	88915
35	16.20	0.00	129.20	0.00	1227.60	142.96	142.96	88915
36	16.00	0.00	133.20	0.00	1239.60	147.12	147.12	88915
37	15.80	0.00	137.20	0.00	1251.60	151.32	151.32	88915
38	15.60	0.00	141.20	0.00	1263.60	155.56	155.56	88915
39	15.40	0.00	145.20	0.00	1275.60	159.82	159.82	88915
40	15.20	0.00	149.20	0.00	1287.60	164.11	164.11	88979
41	15.00	0.00	153.20	0.00	1299.60	168.43	168.43	88979
42	14.80	0.00	157.20	0.00	1311.60	172.77	172.77	88979
43	14.60	0.00	161.20	0.00	1323.60	177.13	177.13	88979
44	14.40	0.00	165.20	0.00	1335.60	181.50	181.50	88979
45	14.20	0.00	169.20	0.00	1347.60	185.89	185.89	88979
46	14.00	0.00	173.20	0.00	1359.60	190.28	190.28	88979
47	13.80	0.00	177.20	0.00	1371.60	194.69	194.69	88979
48	13.60	0.00	181.20	0.00	1383.60	199.10	199.10	88979
49	13.40	0.00	185.20	0.00	1395.60	203.51	203.51	88979
50	13.20	0.00	189.20	0.00	1407.60	207.93	207.93	88979
51	13.00	0.00	193.20	0.00	1419.60	212.35	212.35	88979
52	12.80	0.00	197.20	0.00	1431.60	216.77	216.77	88979
53	12.60	0.00	201.20	0.00	1443.60	221.19	221.19	88979
54	12.40	0.00	205.20	0.00	1455.60	225.61	225.61	88979
55	12.20	0.00	209.20	0.00	1467.60	230.03	230.03	88979
56	12.00	0.00	213.20	0.00	1479.60	234.44	234.44	88979
57	11.80	0.00	217.20	0.00	1491.60	238.86	238.86	88979
58	11.60	0.00	221.20	0.00	1503.60	243.27	243.27	88979
59	11.40	0.00	225.20	0.00	1515.60	247.68	247.68	88979
60	11.20	0.00	229.20	0.00	1527.60	252.09	252.09	88979
61	11.00	0.00	233.20	0.00	1539.60	256.50	256.50	88979

(continued)

Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	ACTIVE side						
		Effective stresses				Earth pressure	Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	kN/m2	kN/m2	kN/m3
62	10.80	0.00	237.20	0.00	1551.60	260.91	260.91	88979
63	10.60	0.00	241.20	0.00	1563.60	265.32	265.32	88979
64	10.40	0.00	245.20	0.00	1575.60	269.72	269.72	88535
65	10.20	0.00	249.20	0.00	1587.60	274.12	274.12	88535
66	10.00	0.00	253.20	0.00	1599.60	278.53	278.53	88535
67	9.80	2.00	255.20	0.00	1605.60	280.73	282.73	88535
68	9.60	4.00	257.20	0.00	1611.60	282.93	286.93	88535
69	9.40	6.00	259.20	0.00	1617.60	285.13	291.13	88535
70	9.20	8.00	261.20	0.00	1623.60	287.33	295.33	88535
71	9.00	10.00	263.20	0.00	1629.60	289.53	299.53	88535
72	8.80	12.00	265.20	0.00	1635.60	291.73	303.73	88535
73	8.60	14.00	267.20	0.00	1641.60	293.93	307.93	88535
74	8.40	16.00	269.20	0.00	1647.60	296.13	312.13	88535
75	8.20	18.00	271.20	0.00	1653.60	298.33	316.33	88535
76	8.00	20.00	273.20	0.00	1659.60	300.53	320.53	88535
77	7.80	22.00	275.20	0.00	1665.60	302.73	324.73	88535
78	7.60	24.00	277.20	0.00	1671.60	304.93	328.93	88535
79	7.40	26.00	279.20	0.00	1677.60	307.12	333.12	88535
80	7.20	28.00	281.20	0.00	1683.60	309.32	337.32	88535
81	7.00	30.00	283.20	0.00	1689.60	311.52	341.52	88535
82	6.80	32.00	285.20	0.00	1695.60	313.72	345.72	88535
83	6.60	34.00	287.20	0.00	1701.60	315.92	349.92	88535
84	6.40	36.00	289.20	0.00	1707.60	318.12	354.12	88535
85	6.20	38.00	291.20	0.00	1713.60	320.32	358.32	88535
86	6.00	40.00	293.20	0.00	1719.60	322.52	362.52	215320
87	5.80	42.00	295.20	0.00	1725.60	324.72	366.72	215320
88	5.65	43.50	296.70	0.00	1730.10	326.37	369.87	215320
89	5.50	45.00	298.20	0.00	1734.60	328.02	373.02	215320

Node no.	Y coord	PASSIVE side						
		Effective stresses				Earth pressure	Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	kN/m2	kN/m2	kN/m3
1	22.66	0.00	0.00	0.00	420.00	63.98	63.98	63077
2	22.53	0.00	2.60	0.00	440.28	63.26	63.26	64717
3	22.40	0.00	5.20	0.00	460.56	62.32	62.32	66357
4	22.20	0.00	9.20	0.00	491.77	60.59	60.59	68880
5	22.00	0.00	13.20	0.00	522.97	58.64	58.64	71403
6	21.80	0.00	17.20	0.00	554.17	56.63	56.63	73926
7	21.60	0.00	21.20	0.00	585.37	54.71	54.71	76449
8	21.40	0.00	25.20	0.00	616.58	53.00	53.00	78972
9	21.20	0.00	29.20	0.00	647.78	51.61	51.61	81495
10	21.00	0.00	33.20	0.00	678.98	50.61	50.61	84018
11	20.80	0.00	37.20	0.00	710.18	50.08	50.08	86541
12	20.60	0.00	41.20	0.00	741.38	50.03	50.03	89064
13	20.40	0.00	45.20	0.00	772.59	50.50	50.50	91587
14	20.20	0.00	49.20	0.00	803.79	51.48	51.48	94110
15	20.00	0.00	53.20	0.00	834.99	53.02	53.02	68109
16	19.80	0.00	57.20	0.00	866.19	55.57	55.57	69887
17	19.60	0.00	61.20	0.00	897.40	58.43	58.43	71666
18	19.40	0.00	65.20	0.00	928.60	61.58	61.58	73444
19	19.20	0.00	69.20	0.00	959.80	64.98	64.98	75222
20	19.00	0.00	73.20	0.00	991.00	68.60	68.60	77001

(continued)

Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	PASSIVE side						
			Effective stresses					
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
21	18.80	0.00	77.20	0.00	1022.21	72.41	72.41	78779
22	18.60	0.00	81.20	0.00	1053.41	76.38	76.38	80557
23	18.40	0.00	85.20	0.00	1084.61	80.49	80.49	82335
24	18.20	0.00	89.20	0.00	1115.81	84.70	84.70	84114
25	18.00	0.00	93.20	0.00	1147.02	88.98	88.98	85892
26	17.80	0.00	97.20	0.00	1178.22	93.33	93.33	87670
27	17.60	0.00	101.20	0.00	1209.42	97.71	97.71	89449
28	17.40	0.00	105.20	0.00	1240.62	102.10	102.10	91227
29	17.20	0.00	109.20	0.00	1271.83	106.50	106.50	93005
30	17.05	0.00	112.20	0.00	1295.23	109.80	109.80	94339
31	16.90	0.00	115.20	0.00	1318.63	113.09	113.09	95673
		0.00	115.20	0.00	1185.60	124.76	124.76	88915
32	16.75	0.00	118.20	0.00	1194.60	128.34	128.34	88915
33	16.60	0.00	121.20	0.00	1203.60	131.90	131.90	88915
34	16.40	0.00	125.20	0.00	1215.60	136.61	136.61	88915
35	16.20	0.00	129.20	0.00	1227.60	141.28	141.28	88915
36	16.00	0.00	133.20	0.00	1239.60	145.92	145.92	88915
37	15.80	0.00	137.20	0.00	1251.60	150.52	150.52	88915
38	15.60	0.00	141.20	0.00	1263.60	155.08	155.08	88915
39	15.40	0.00	145.20	0.00	1275.60	159.62	159.62	88915
40	15.20	0.00	149.20	0.00	1287.60	164.13	164.13	88979
41	15.00	0.00	153.20	0.00	1299.60	168.61	168.61	88979
42	14.80	0.00	157.20	0.00	1311.60	173.07	173.07	88979
43	14.60	0.00	161.20	0.00	1323.60	177.51	177.51	88979
44	14.40	0.00	165.20	0.00	1335.60	181.94	181.94	88979
45	14.20	0.00	169.20	0.00	1347.60	186.35	186.35	88979
46	14.00	0.00	173.20	0.00	1359.60	190.76	190.76	88979
47	13.80	0.00	177.20	0.00	1371.60	195.15	195.15	88979
48	13.60	0.00	181.20	0.00	1383.60	199.54	199.54	88979
49	13.40	0.00	185.20	0.00	1395.60	203.93	203.93	88979
50	13.20	0.00	189.20	0.00	1407.60	208.31	208.31	88979
51	13.00	0.00	193.20	0.00	1419.60	212.69	212.69	88979
52	12.80	0.00	197.20	0.00	1431.60	217.07	217.07	88979
53	12.60	0.00	201.20	0.00	1443.60	221.45	221.45	88979
54	12.40	0.00	205.20	0.00	1455.60	225.83	225.83	88979
55	12.20	0.00	209.20	0.00	1467.60	230.21	230.21	88979
56	12.00	0.00	213.20	0.00	1479.60	234.60	234.60	88979
57	11.80	0.00	217.20	0.00	1491.60	238.98	238.98	88979
58	11.60	0.00	221.20	0.00	1503.60	243.37	243.37	88979
59	11.40	0.00	225.20	0.00	1515.60	247.76	247.76	88979
60	11.20	0.00	229.20	0.00	1527.60	252.15	252.15	88979
61	11.00	0.00	233.20	0.00	1539.60	256.54	256.54	88979
62	10.80	0.00	237.20	0.00	1551.60	260.93	260.93	88979
63	10.60	0.00	241.20	0.00	1563.60	265.32	265.32	88979
64	10.40	0.00	245.20	0.00	1575.60	269.72	269.72	88535
65	10.20	0.00	249.20	0.00	1587.60	274.12	274.12	88535
66	10.00	0.00	253.20	0.00	1599.60	278.51	278.51	88535
67	9.80	2.00	255.20	0.00	1605.60	280.71	282.71	88535
68	9.60	4.00	257.20	0.00	1611.60	282.91	286.91	88535
69	9.40	6.00	259.20	0.00	1617.60	285.11	291.11	88535
70	9.20	8.00	261.20	0.00	1623.60	287.31	295.31	88535
71	9.00	10.00	263.20	0.00	1629.60	289.51	299.51	88535
72	8.80	12.00	265.20	0.00	1635.60	291.71	303.71	88535
73	8.60	14.00	267.20	0.00	1641.60	293.91	307.91	88535
74	8.40	16.00	269.20	0.00	1647.60	296.11	312.11	88535

(continued)

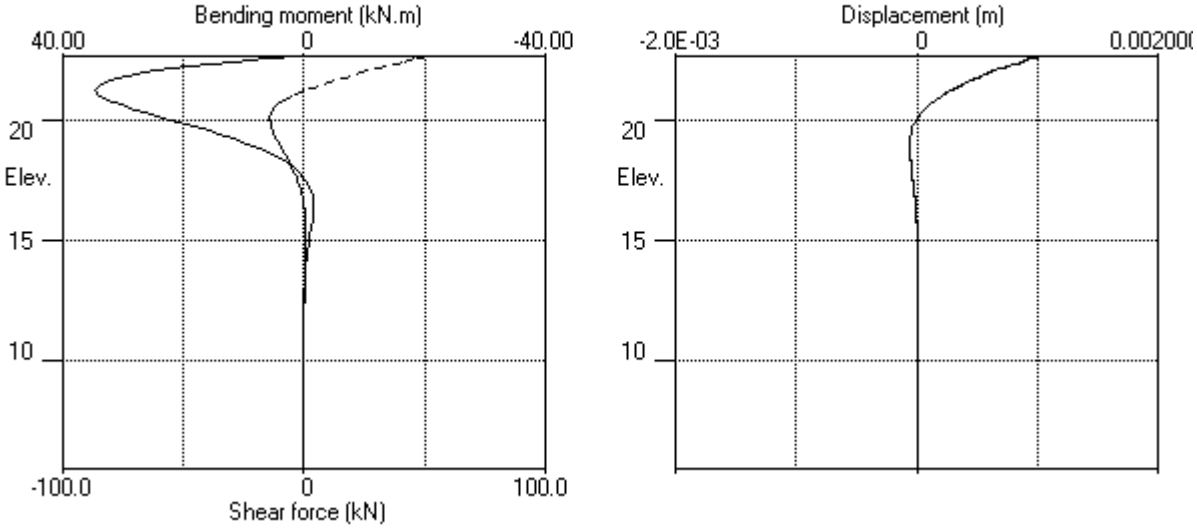
Stage No.1 Apply load no.1 at elevation 22.66

Node no.	Y coord	PASSIVE side						
		Effective stresses					Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	kN/m2	kN/m3
75	8.20	18.00	271.20	0.00	1653.60	298.31	316.31	88535
76	8.00	20.00	273.20	0.00	1659.60	300.51	320.51	88535
77	7.80	22.00	275.20	0.00	1665.60	302.71	324.71	88535
78	7.60	24.00	277.20	0.00	1671.60	304.91	328.91	88535
79	7.40	26.00	279.20	0.00	1677.60	307.12	333.12	88535
80	7.20	28.00	281.20	0.00	1683.60	309.32	337.32	88535
81	7.00	30.00	283.20	0.00	1689.60	311.52	341.52	88535
82	6.80	32.00	285.20	0.00	1695.60	313.72	345.72	88535
83	6.60	34.00	287.20	0.00	1701.60	315.92	349.92	88535
84	6.40	36.00	289.20	0.00	1707.60	318.12	354.12	88535
85	6.20	38.00	291.20	0.00	1713.60	320.32	358.32	88535
86	6.00	40.00	293.20	0.00	1719.60	322.52	362.52	215320
87	5.80	42.00	295.20	0.00	1725.60	324.72	366.72	215320
88	5.65	43.50	296.70	0.00	1730.10	326.37	369.87	215320
89	5.50	45.00	298.20	0.00	1734.60	328.02	373.02	215320

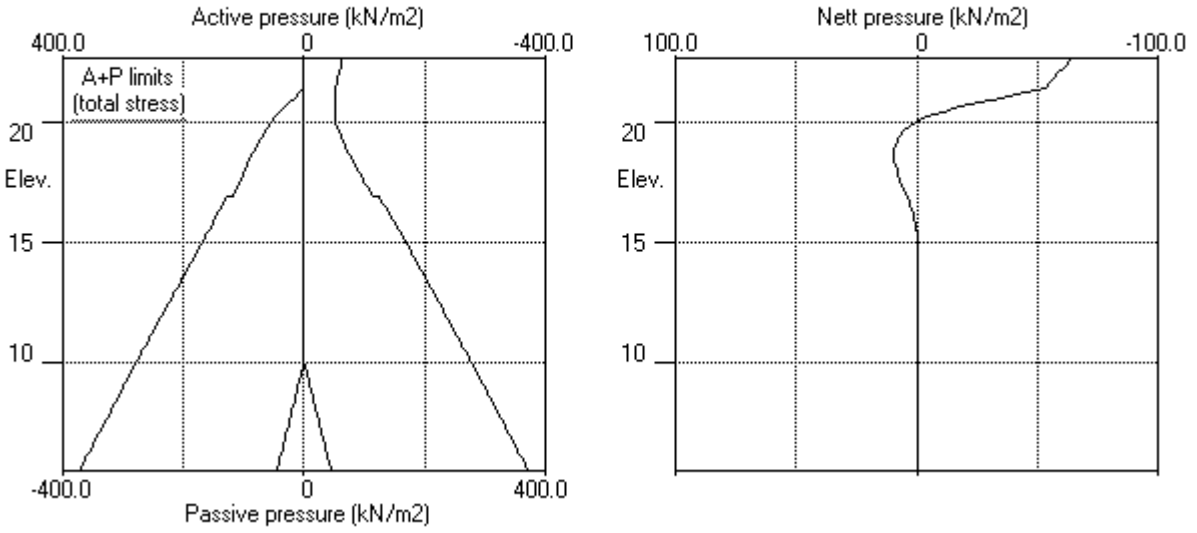
Note: 0.00a Soil pressure at active limit
123.45p Soil pressure at passive limit

Units: kN,m

Stage No.1 Apply load no.1 at elev. 22.66



Stage No.1 Apply load no.1 at elev. 22.66



Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.60m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
1	22.66	0.001	0.000	0.0	0.0	50.0	0.0
2	22.53	0.001	0.000	6.2	0.0	45.0	0.0
3	22.40	0.001	0.000	11.7	0.0	40.1	0.0
4	22.20	0.001	0.000	19.0	0.0	32.8	0.0
5	22.00	0.001	0.000	24.8	0.0	25.6	0.0
6	21.80	0.001	0.000	29.2	0.0	18.7	0.0
7	21.60	0.000	0.000	32.2	0.0	12.0	0.0
8	21.40	0.000	0.000	34.0	0.0	5.6	0.0
9	21.20	0.000	0.000	34.5	0.0	0.0	-0.3
10	21.00	0.000	0.000	33.9	0.0	0.0	-5.1
11	20.80	0.000	0.000	32.5	0.0	0.0	-8.7
12	20.60	0.000	0.000	30.4	0.0	0.0	-11.3
13	20.40	0.000	0.000	28.0	0.0	0.0	-13.0
14	20.20	0.000	0.000	25.2	0.0	0.0	-13.9
15	20.00	0.000	-0.000	22.4	0.0	0.0	-14.2
16	19.80	0.000	-0.000	19.5	0.0	0.0	-14.0
17	19.60	0.000	-0.000	16.8	0.0	0.0	-13.4
18	19.40	0.000	-0.000	14.2	0.0	0.0	-12.7
19	19.20	0.000	-0.000	11.7	0.0	0.0	-11.7
20	19.00	0.000	-0.000	9.5	0.0	0.0	-10.7
21	18.80	0.000	-0.000	7.4	0.0	0.0	-9.6
22	18.60	0.000	-0.000	5.7	0.0	0.0	-8.4
23	18.40	0.000	-0.000	4.1	0.0	0.0	-7.3
24	18.20	0.000	-0.000	2.8	0.0	0.0	-6.1
25	18.00	0.000	-0.000	1.6	0.0	0.0	-5.1
26	17.80	0.000	-0.000	0.7	0.0	0.0	-4.1
27	17.60	0.000	-0.000	0.0	-0.0	0.0	-3.2
28	17.40	0.000	-0.000	0.0	-0.6	0.0	-2.5
29	17.20	0.000	-0.000	0.0	-1.0	0.0	-1.8
30	17.05	0.000	-0.000	0.0	-1.2	0.0	-1.3
31	16.90	0.000	-0.000	0.0	-1.4	0.0	-0.9
32	16.75	0.000	-0.000	0.0	-1.5	0.0	-0.6
33	16.60	0.000	-0.000	0.0	-1.6	0.0	-0.3
34	16.40	0.000	-0.000	0.0	-1.6	0.0	0.0
35	16.20	0.000	-0.000	0.0	-1.6	0.2	0.0
36	16.00	0.000	-0.000	0.0	-1.5	0.4	0.0
37	15.80	0.000	-0.000	0.0	-1.4	0.5	0.0
38	15.60	0.000	-0.000	0.0	-1.3	0.6	0.0
39	15.40	0.000	-0.000	0.0	-1.2	0.7	0.0
40	15.20	0.000	0.000	0.0	-1.0	0.7	0.0
41	15.00	0.000	0.000	0.0	-0.9	0.7	0.0
42	14.80	0.000	0.000	0.0	-0.8	0.6	0.0
43	14.60	0.000	0.000	0.0	-0.6	0.6	0.0
44	14.40	0.000	0.000	0.0	-0.5	0.5	0.0
45	14.20	0.000	0.000	0.0	-0.4	0.5	0.0

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m	kN.m	kN	kN
46	14.00	0.000	0.000	0.0	-0.3	0.4	0.0
47	13.80	0.000	0.000	0.0	-0.2	0.4	0.0
48	13.60	0.000	0.000	0.0	-0.2	0.3	0.0
49	13.40	0.000	0.000	0.0	-0.1	0.3	0.0
50	13.20	0.000	0.000	0.0	-0.1	0.2	0.0
51	13.00	0.000	0.000	0.0	-0.0	0.2	0.0
52	12.80	0.000	0.000	0.0	0.0	0.1	0.0
53	12.60	0.000	0.000	0.0	0.0	0.1	0.0
54	12.40	0.000	0.000	0.0	0.0	0.1	0.0
55	12.20	0.000	0.000	0.1	0.0	0.1	0.0
56	12.00	0.000	0.000	0.1	0.0	0.0	0.0
57	11.80	0.000	0.000	0.1	0.0	0.0	0.0
58	11.60	0.000	0.000	0.1	0.0	0.0	-0.0
59	11.40	0.000	0.000	0.1	0.0	0.0	-0.0
60	11.20	0.000	0.000	0.1	0.0	0.0	-0.0
61	11.00	0.000	0.000	0.1	0.0	0.0	-0.0
62	10.80	0.000	0.000	0.1	0.0	0.0	-0.0
63	10.60	0.000	0.000	0.0	0.0	0.0	-0.0
64	10.40	0.000	-0.000	0.0	0.0	0.0	-0.0
65	10.20	0.000	-0.000	0.0	0.0	0.0	-0.0
66	10.00	0.000	-0.000	0.0	0.0	0.0	-0.0
67	9.80	0.000	-0.000	0.0	0.0	0.0	-0.0
68	9.60	0.000	-0.000	0.0	0.0	0.0	-0.0
69	9.40	0.000	-0.000	0.0	0.0	0.0	-0.0
70	9.20	0.000	-0.000	0.0	0.0	0.0	-0.0
71	9.00	0.000	-0.000	0.0	0.0	0.0	-0.0
72	8.80	0.000	-0.000	0.0	0.0	0.0	-0.0
73	8.60	0.000	-0.000	0.0	0.0	0.0	-0.0
74	8.40	0.000	-0.000	0.0	0.0	0.0	-0.0
75	8.20	0.000	-0.000	0.0	0.0	0.0	-0.0
76	8.00	0.000	-0.000	0.0	0.0	0.0	-0.0
77	7.80	0.000	-0.000	0.0	-0.0	0.0	-0.0
78	7.60	0.000	-0.000	0.0	-0.0	0.0	-0.0
79	7.40	0.000	-0.000	0.0	-0.0	0.0	-0.0
80	7.20	0.000	-0.000	0.0	-0.0	0.0	-0.0
81	7.00	0.000	-0.000	0.0	-0.0	0.0	0.0
82	6.80	0.000	-0.000	0.0	-0.0	0.0	0.0
83	6.60	0.000	-0.000	0.0	-0.0	0.0	0.0
84	6.40	0.000	-0.000	0.0	-0.0	0.0	0.0
85	6.20	0.000	-0.000	0.0	-0.0	0.0	0.0
86	6.00	0.000	0.000	0.0	-0.0	0.0	0.0
87	5.80	0.000	0.000	0.0	-0.0	0.0	0.0
88	5.65	0.000	0.000	0.0	-0.0	0.0	0.0
89	5.50	0.000	0.000	0.0	0.0	0.0	0.0

Maximum and minimum bending moment and shear force at each stage

Stage no.	Bending moment maximum	Bending moment elev.	Bending moment minimum	Bending moment elev.	Shear force maximum	Shear force elev.	Shear force minimum	Shear force elev.
	kN.m		kN.m		kN		kN	
1	34.5	21.20	-1.6	16.40	50.0	22.66	-14.2	20.00

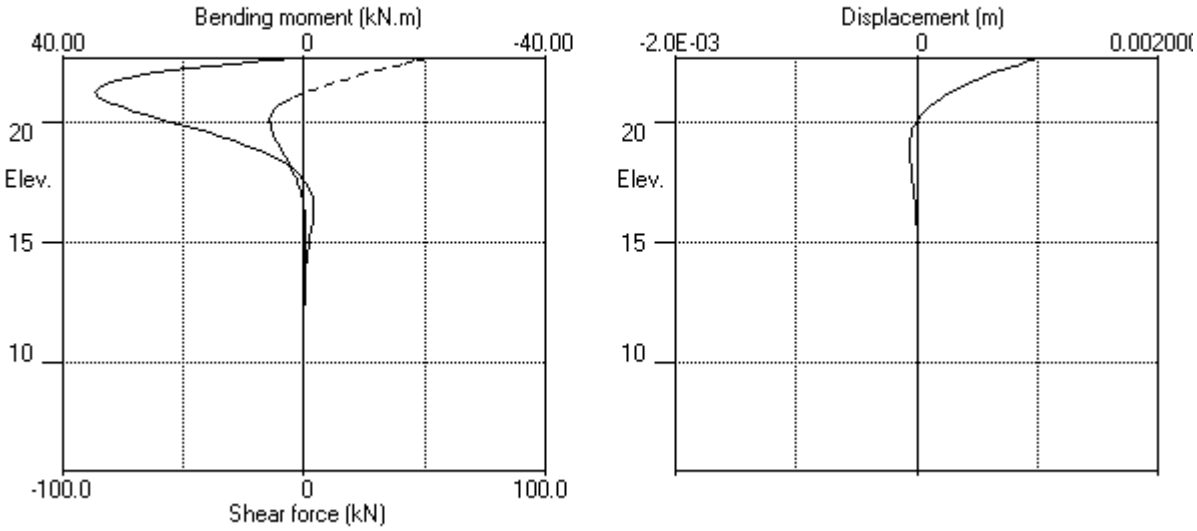
Maximum and minimum displacement at each stage

Stage no.	Displacement maximum	Displacement elev.	Displacement minimum	Displacement elev.	Stage description
	m		m		
1	0.001	22.66	-0.000	18.80	Apply load no.1 at elev. 22.66

Summary of results (continued)

Units: kN,m

Bending moment, shear force, displacement envelopes



ROGER STAGG ASSOCIATES, Dartford, Kent | Sheet No.
Program: WALLAP Version 6.05 Revision A45.B58.R49 | Job No. 21315
Licensed from GEOSOLVE | Made by : RS
Data filename/Run ID: 21315-D |
Camley St | Date: 6-10-2015
General piling 600 dia CoL 19.61 Hz = 50 | Checked :

Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Active side	Passive side
1	19.61	1 London Clay	1 London Clay
2	16.90	2 London Clay	2 London Clay

SOIL PROPERTIES

No.	Soil type / Description	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	London Clay	20.00	61600	1.000	OC	0.000	1.000	118.0d
	(Datum elev. 19.61)		(7700)		(0.490)	(0.000)	(2.000)	(16.00)
2	London Clay	20.00	77000	1.100	OC	0.000	1.000	140.0d
					(0.490)	(0.000)	(2.000)	

Additional soil parameters associated with Ka and Kp

No.	Soil type Description	--- parameters for Ka --- Soil friction angle	Wall adhesion coeff.	Back-fill angle	--- parameters for Kp --- Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	London Clay	0.00	0.000	0.00	0.00	0.000	0.00
2	London Clay	0.00	0.000	0.00	0.00	0.000	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Active side	Passive side
Initial water table elevation	10.00	10.00

Automatic water pressure balancing at toe of pile : No

PILE PROPERTIES

Type of structure = Single Pile
Pile diameter = 0.60 m
Elevation of toe of pile = 1.30
Maximum finite element length = 0.20 m
Pile diameter = 0.60 m
Youngs modulus of pile E = 2.3000E+07 kN/m2
Moment of inertia of pile I = 6.3625E-03 m4
E.I = 146339 kN.m2
Yield Moment of pile = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN	Moment load kN.m	Moment restraint kN.m/rad	Partial factor/ Category
1	19.61	50.00	0	0	N/A

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Apply load no.1 at elevation 19.61

FACTORS OF SAFETY and ANALYSIS OPTIONS

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Apply load no.1 at elev. 19.61	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No. 1 Apply load no.1 at elevation 19.61

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.60m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
1	19.61	-77.87	0.001	4.78E-04	50.0	-0.0	-50.0
2	19.51	-75.63	0.001	4.76E-04	45.2	5.0	
3	19.40	-73.30	0.001	4.71E-04	40.5	9.5	
4	19.20	-68.72	0.001	4.53E-04	32.0	16.7	
5	19.00	-64.15	0.000	4.26E-04	24.0	22.2	
6	18.80	-59.82	0.000	3.93E-04	16.5	26.2	
7	18.60	-55.91	0.000	3.56E-04	9.6	28.8	
8	18.40	-52.54	0.000	3.15E-04	3.1	30.0	
9	18.20	-43.26	0.000	2.74E-04	-2.7	30.1	
10	18.00	-31.29	0.000	2.34E-04	-7.1	29.1	
11	17.80	-20.84	0.000	1.95E-04	-10.3	27.3	
12	17.60	-11.89	0.000	1.60E-04	-12.2	25.0	
13	17.40	-4.40	0.000	1.27E-04	-13.2	22.4	
14	17.20	1.16	-0.000	9.89E-05	-13.4	19.7	
15	17.05	3.69	-0.000	7.97E-05	-13.2	17.7	
16	16.90	5.77	-0.000	6.26E-05	-12.8	15.7	
		5.38	-0.000	6.26E-05	-12.8	15.7	
17	16.75	6.85	-0.000	4.74E-05	-12.2	13.9	
18	16.60	7.93	-0.000	3.41E-05	-11.5	12.1	
19	16.40	8.87	-0.000	1.91E-05	-10.5	9.9	
20	16.20	9.33	-0.000	7.00E-06	-9.4	7.9	
21	16.00	9.40	-0.000	-2.54E-06	-8.3	6.1	
22	15.80	9.17	-0.000	-9.82E-06	-7.2	4.5	
23	15.60	8.72	-0.000	-1.51E-05	-6.1	3.2	
24	15.40	8.11	-0.000	-1.87E-05	-5.1	2.1	
25	15.20	7.40	-0.000	-2.09E-05	-4.2	1.2	
26	15.00	6.64	-0.000	-2.20E-05	-3.3	0.4	
27	14.80	5.84	-0.000	-2.22E-05	-2.6	-0.2	
28	14.60	5.06	-0.000	-2.17E-05	-1.9	-0.6	
29	14.40	4.30	-0.000	-2.06E-05	-1.4	-0.9	
30	14.20	3.59	-0.000	-1.92E-05	-0.9	-1.2	
31	14.00	2.94	-0.000	-1.75E-05	-0.5	-1.3	
32	13.80	2.35	-0.000	-1.57E-05	-0.2	-1.4	
33	13.60	1.82	-0.000	-1.38E-05	0.1	-1.4	
34	13.40	1.36	-0.000	-1.20E-05	0.2	-1.3	
35	13.20	0.96	-0.000	-1.02E-05	0.4	-1.3	
36	13.00	0.63	-0.000	-8.53E-06	0.5	-1.2	
37	12.80	0.36	-0.000	-6.97E-06	0.5	-1.1	
38	12.60	0.13	-0.000	-5.57E-06	0.6	-1.0	
39	12.40	-0.04	0.000	-4.32E-06	0.6	-0.9	
40	12.20	-0.18	0.000	-3.23E-06	0.6	-0.7	
41	12.00	-0.27	0.000	-2.29E-06	0.5	-0.6	
42	11.80	-0.34	0.000	-1.50E-06	0.5	-0.5	
43	11.60	-0.38	0.000	-8.50E-07	0.5	-0.4	
44	11.40	-0.40	0.000	-3.21E-07	0.4	-0.3	
45	11.20	-0.41	0.000	9.52E-08	0.4	-0.3	

(continued)

Stage No.1 Apply load no.1 at elevation 19.61

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
46	11.00	-0.40	0.000	4.13E-07	0.3	-0.2	
47	10.80	-0.38	0.000	6.45E-07	0.3	-0.1	
48	10.60	-0.35	0.000	8.05E-07	0.2	-0.1	
49	10.40	-0.32	0.000	9.04E-07	0.2	-0.1	
50	10.20	-0.29	0.000	9.53E-07	0.1	-0.0	
51	10.00	-0.25	0.000	9.62E-07	0.1	0.0	
52	9.80	-0.22	0.000	9.40E-07	0.1	0.0	
53	9.60	-0.19	0.000	8.95E-07	0.1	0.0	
54	9.40	-0.16	0.000	8.34E-07	0.0	0.0	
55	9.20	-0.13	0.000	7.61E-07	0.0	0.1	
56	9.00	-0.10	0.000	6.83E-07	0.0	0.1	
57	8.80	-0.08	0.000	6.02E-07	-0.0	0.1	
58	8.60	-0.06	0.000	5.21E-07	-0.0	0.1	
59	8.40	-0.04	0.000	4.44E-07	-0.0	0.1	
60	8.20	-0.03	0.000	3.71E-07	-0.0	0.1	
61	8.00	-0.02	0.000	3.04E-07	-0.0	0.0	
62	7.80	-0.01	0.000	2.43E-07	-0.0	0.0	
63	7.60	0.00	-0.000	1.88E-07	-0.0	0.0	
64	7.40	0.01	-0.000	1.41E-07	-0.0	0.0	
65	7.20	0.01	-0.000	1.00E-07	-0.0	0.0	
66	7.00	0.01	-0.000	6.63E-08	-0.0	0.0	
67	6.80	0.02	-0.000	3.79E-08	-0.0	0.0	
68	6.60	0.02	-0.000	1.49E-08	-0.0	0.0	
69	6.40	0.02	-0.000	-3.24E-09	-0.0	0.0	
70	6.20	0.02	-0.000	-1.71E-08	-0.0	0.0	
71	6.00	0.02	-0.000	-2.72E-08	-0.0	0.0	
72	5.80	0.02	-0.000	-3.42E-08	-0.0	0.0	
73	5.60	0.01	-0.000	-3.86E-08	-0.0	0.0	
74	5.40	0.01	-0.000	-4.07E-08	-0.0	0.0	
75	5.20	0.01	-0.000	-4.12E-08	-0.0	-0.0	
76	5.00	0.01	-0.000	-4.03E-08	-0.0	-0.0	
77	4.80	0.01	-0.000	-3.84E-08	-0.0	-0.0	
78	4.60	0.01	-0.000	-3.58E-08	-0.0	-0.0	
79	4.40	0.01	-0.000	-3.28E-08	-0.0	-0.0	
80	4.20	0.00	-0.000	-2.95E-08	-0.0	-0.0	
81	4.00	0.00	-0.000	-2.61E-08	0.0	-0.0	
82	3.80	0.00	-0.000	-2.28E-08	0.0	-0.0	
83	3.60	0.00	-0.000	-1.97E-08	0.0	-0.0	
84	3.40	0.00	-0.000	-1.68E-08	0.0	-0.0	
85	3.20	0.00	-0.000	-1.42E-08	0.0	-0.0	
86	3.00	0.00	-0.000	-1.19E-08	0.0	-0.0	
87	2.80	-0.00	0.000	-1.00E-08	0.0	-0.0	
88	2.60	-0.00	0.000	-8.53E-09	0.0	-0.0	
89	2.40	-0.00	0.000	-7.33E-09	0.0	-0.0	
90	2.20	-0.00	0.000	-6.45E-09	0.0	-0.0	
91	2.00	-0.00	0.000	-5.86E-09	0.0	-0.0	
92	1.80	-0.00	0.000	-5.51E-09	0.0	-0.0	
93	1.60	-0.00	0.000	-5.35E-09	0.0	-0.0	
94	1.45	-0.00	0.000	-5.30E-09	0.0	-0.0	
95	1.30	-0.00	0.000	-5.30E-09	0.0	0.0	

(continued)

Stage No.1 Apply load no.1 at elevation 19.61

Node no.	Y coord	ACTIVE side						
			Effective stresses					
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	19.61	0.00	0.00	0.00	708.00	0.00	0.00a	105434
2	19.51	0.00	2.10	0.00	724.38	0.00	0.00a	106818
3	19.40	0.00	4.20	0.00	740.76	0.00	0.00a	108202
4	19.20	0.00	8.20	0.00	771.96	0.00	0.00a	110838
5	19.00	0.00	12.20	0.00	803.17	0.00	0.00a	113474
6	18.80	0.00	16.20	0.00	834.37	0.00	0.00a	116110
7	18.60	0.00	20.20	0.00	865.57	0.00	0.00a	118745
8	18.40	0.00	24.20	0.00	896.77	0.00	0.00a	121381
9	18.20	0.00	28.20	0.00	927.98	6.57	6.57	124017
10	18.00	0.00	32.20	0.00	959.18	16.55	16.55	126653
11	17.80	0.00	36.20	0.00	990.38	25.78	25.78	129289
12	17.60	0.00	40.20	0.00	1021.58	34.26	34.26	131925
13	17.40	0.00	44.20	0.00	1052.79	42.00	42.00	134561
14	17.20	0.00	48.20	0.00	1083.99	48.78	48.78	92551
15	17.05	0.00	51.20	0.00	1107.39	53.04	53.04	93885
16	16.90	0.00	54.20	0.00	1130.79	57.08	57.08	95218
		0.00	54.20	0.00	1002.60	62.31	62.31	88906
17	16.75	0.00	57.20	0.00	1011.60	66.34	66.34	88906
18	16.60	0.00	60.20	0.00	1020.60	70.19	70.19	88906
19	16.40	0.00	64.20	0.00	1032.60	75.05	75.05	88906
20	16.20	0.00	68.20	0.00	1044.60	79.68	79.68	88906
21	16.00	0.00	72.20	0.00	1056.60	84.12	84.12	88906
22	15.80	0.00	76.20	0.00	1068.60	88.41	88.41	88906
23	15.60	0.00	80.20	0.00	1080.60	92.58	92.58	88906
24	15.40	0.00	84.20	0.00	1092.60	96.68	96.68	88906
25	15.20	0.00	88.20	0.00	1104.60	100.72	100.72	88906
26	15.00	0.00	92.20	0.00	1116.60	104.74	104.74	88906
27	14.80	0.00	96.20	0.00	1128.60	108.74	108.74	88906
28	14.60	0.00	100.20	0.00	1140.60	112.75	112.75	88906
29	14.40	0.00	104.20	0.00	1152.60	116.77	116.77	88906
30	14.20	0.00	108.20	0.00	1164.60	120.82	120.82	88906
31	14.00	0.00	112.20	0.00	1176.60	124.89	124.89	88906
32	13.80	0.00	116.20	0.00	1188.60	128.99	128.99	88906
33	13.60	0.00	120.20	0.00	1200.60	133.13	133.13	88906
34	13.40	0.00	124.20	0.00	1212.60	137.30	137.30	88906
35	13.20	0.00	128.20	0.00	1224.60	141.50	141.50	88906
36	13.00	0.00	132.20	0.00	1236.60	145.74	145.74	88906
37	12.80	0.00	136.20	0.00	1248.60	150.00	150.00	88906
38	12.60	0.00	140.20	0.00	1260.60	154.29	154.29	88906
39	12.40	0.00	144.20	0.00	1272.60	158.60	158.60	88939
40	12.20	0.00	148.20	0.00	1284.60	162.93	162.93	88939
41	12.00	0.00	152.20	0.00	1296.60	167.28	167.28	88939
42	11.80	0.00	156.20	0.00	1308.60	171.65	171.65	88939
43	11.60	0.00	160.20	0.00	1320.60	176.03	176.03	88939
44	11.40	0.00	164.20	0.00	1332.60	180.42	180.42	88939
45	11.20	0.00	168.20	0.00	1344.60	184.82	184.82	88939
46	11.00	0.00	172.20	0.00	1356.60	189.22	189.22	88939
47	10.80	0.00	176.20	0.00	1368.60	193.63	193.63	88939
48	10.60	0.00	180.20	0.00	1380.60	198.04	198.04	88939
49	10.40	0.00	184.20	0.00	1392.60	202.46	202.46	88939
50	10.20	0.00	188.20	0.00	1404.60	206.88	206.88	88939
51	10.00	0.00	192.20	0.00	1416.60	211.29	211.29	88939
52	9.80	2.00	194.20	0.00	1422.60	213.51	215.51	88939
53	9.60	4.00	196.20	0.00	1428.60	215.73	219.73	88939
54	9.40	6.00	198.20	0.00	1434.60	217.94	223.94	88939

(continued)

Stage No.1 Apply load no.1 at elevation 19.61

Node no.	Y coord	ACTIVE side: Water press. kN/m2	Effective stresses: Vertic-al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
55	9.20	8.00	200.20	0.00	1440.60	220.16	228.16	88939
56	9.00	10.00	202.20	0.00	1446.60	222.37	232.37	88939
57	8.80	12.00	204.20	0.00	1452.60	224.58	236.58	88939
58	8.60	14.00	206.20	0.00	1458.60	226.79	240.79	88939
59	8.40	16.00	208.20	0.00	1464.60	229.00	245.00	88939
60	8.20	18.00	210.20	0.00	1470.60	231.21	249.21	88939
61	8.00	20.00	212.20	0.00	1476.60	233.41	253.41	88939
62	7.80	22.00	214.20	0.00	1482.60	235.62	257.62	88939
63	7.60	24.00	216.20	0.00	1488.60	237.82	261.82	88781
64	7.40	26.00	218.20	0.00	1494.60	240.02	266.02	88781
65	7.20	28.00	220.20	0.00	1500.60	242.23	270.23	88781
66	7.00	30.00	222.20	0.00	1506.60	244.43	274.43	88781
67	6.80	32.00	224.20	0.00	1512.60	246.63	278.63	88781
68	6.60	34.00	226.20	0.00	1518.60	248.83	282.83	88781
69	6.40	36.00	228.20	0.00	1524.60	251.03	287.03	88781
70	6.20	38.00	230.20	0.00	1530.60	253.23	291.23	88781
71	6.00	40.00	232.20	0.00	1536.60	255.43	295.43	88781
72	5.80	42.00	234.20	0.00	1542.60	257.63	299.63	88781
73	5.60	44.00	236.20	0.00	1548.60	259.83	303.83	88781
74	5.40	46.00	238.20	0.00	1554.60	262.03	308.03	88781
75	5.20	48.00	240.20	0.00	1560.60	264.23	312.23	88781
76	5.00	50.00	242.20	0.00	1566.60	266.42	316.42	88781
77	4.80	52.00	244.20	0.00	1572.60	268.62	320.62	88781
78	4.60	54.00	246.20	0.00	1578.60	270.82	324.82	88781
79	4.40	56.00	248.20	0.00	1584.60	273.02	329.02	88781
80	4.20	58.00	250.20	0.00	1590.60	275.22	333.22	88781
81	4.00	60.00	252.20	0.00	1596.60	277.42	337.42	88781
82	3.80	62.00	254.20	0.00	1602.60	279.62	341.62	88781
83	3.60	64.00	256.20	0.00	1608.60	281.82	345.82	88781
84	3.40	66.00	258.20	0.00	1614.60	284.02	350.02	88781
85	3.20	68.00	260.20	0.00	1620.60	286.22	354.22	88781
86	3.00	70.00	262.20	0.00	1626.60	288.42	358.42	88781
87	2.80	72.00	264.20	0.00	1632.60	290.62	362.62	126983
88	2.60	74.00	266.20	0.00	1638.60	292.82	366.82	126983
89	2.40	76.00	268.20	0.00	1644.60	295.02	371.02	126983
90	2.20	78.00	270.20	0.00	1650.60	297.22	375.22	126983
91	2.00	80.00	272.20	0.00	1656.60	299.42	379.42	126983
92	1.80	82.00	274.20	0.00	1662.60	301.62	383.62	126983
93	1.60	84.00	276.20	0.00	1668.60	303.82	387.82	126983
94	1.45	85.50	277.70	0.00	1673.10	305.47	390.97	126983
95	1.30	87.00	279.20	0.00	1677.60	307.12	394.12	126983

Node no.	Y coord	PASSIVE side: Water press. kN/m2	Effective stresses: Vertic-al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	19.61	0.00	0.00	0.00	708.00	77.87	77.87	105434
2	19.51	0.00	2.10	0.00	724.38	75.63	75.63	106818
3	19.40	0.00	4.20	0.00	740.76	73.30	73.30	108202
4	19.20	0.00	8.20	0.00	771.96	68.72	68.72	110838
5	19.00	0.00	12.20	0.00	803.17	64.15	64.15	113474
6	18.80	0.00	16.20	0.00	834.37	59.82	59.82	116110
7	18.60	0.00	20.20	0.00	865.57	55.91	55.91	118745

(continued)

Stage No.1 Apply load no.1 at elevation 19.61

Node no.	Y coord	PASSIVE side						
			Effective stresses					
		Water press.	Vertic -al	Active limit	Passive limit	Earth pressure	Total earth pressure	Soil stiffness coeff.
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m3
8	18.40	0.00	24.20	0.00	896.77	52.54	52.54	121381
9	18.20	0.00	28.20	0.00	927.98	49.83	49.83	124017
10	18.00	0.00	32.20	0.00	959.18	47.85	47.85	126653
11	17.80	0.00	36.20	0.00	990.38	46.62	46.62	129289
12	17.60	0.00	40.20	0.00	1021.58	46.14	46.14	131925
13	17.40	0.00	44.20	0.00	1052.79	46.40	46.40	134561
14	17.20	0.00	48.20	0.00	1083.99	47.62	47.62	92551
15	17.05	0.00	51.20	0.00	1107.39	49.36	49.36	93885
16	16.90	0.00	54.20	0.00	1130.79	51.32	51.32	95218
		0.00	54.20	0.00	1002.60	56.93	56.93	88906
17	16.75	0.00	57.20	0.00	1011.60	59.50	59.50	88906
18	16.60	0.00	60.20	0.00	1020.60	62.25	62.25	88906
19	16.40	0.00	64.20	0.00	1032.60	66.19	66.19	88906
20	16.20	0.00	68.20	0.00	1044.60	70.36	70.36	88906
21	16.00	0.00	72.20	0.00	1056.60	74.72	74.72	88906
22	15.80	0.00	76.20	0.00	1068.60	79.23	79.23	88906
23	15.60	0.00	80.20	0.00	1080.60	83.86	83.86	88906
24	15.40	0.00	84.20	0.00	1092.60	88.56	88.56	88906
25	15.20	0.00	88.20	0.00	1104.60	93.32	93.32	88906
26	15.00	0.00	92.20	0.00	1116.60	98.10	98.10	88906
27	14.80	0.00	96.20	0.00	1128.60	102.90	102.90	88906
28	14.60	0.00	100.20	0.00	1140.60	107.69	107.69	88906
29	14.40	0.00	104.20	0.00	1152.60	112.47	112.47	88906
30	14.20	0.00	108.20	0.00	1164.60	117.22	117.22	88906
31	14.00	0.00	112.20	0.00	1176.60	121.95	121.95	88906
32	13.80	0.00	116.20	0.00	1188.60	126.65	126.65	88906
33	13.60	0.00	120.20	0.00	1200.60	131.31	131.31	88906
34	13.40	0.00	124.20	0.00	1212.60	135.94	135.94	88906
35	13.20	0.00	128.20	0.00	1224.60	140.54	140.54	88906
36	13.00	0.00	132.20	0.00	1236.60	145.10	145.10	88906
37	12.80	0.00	136.20	0.00	1248.60	149.64	149.64	88906
38	12.60	0.00	140.20	0.00	1260.60	154.15	154.15	88906
39	12.40	0.00	144.20	0.00	1272.60	158.64	158.64	88939
40	12.20	0.00	148.20	0.00	1284.60	163.11	163.11	88939
41	12.00	0.00	152.20	0.00	1296.60	167.56	167.56	88939
42	11.80	0.00	156.20	0.00	1308.60	171.99	171.99	88939
43	11.60	0.00	160.20	0.00	1320.60	176.41	176.41	88939
44	11.40	0.00	164.20	0.00	1332.60	180.82	180.82	88939
45	11.20	0.00	168.20	0.00	1344.60	185.22	185.22	88939
46	11.00	0.00	172.20	0.00	1356.60	189.62	189.62	88939
47	10.80	0.00	176.20	0.00	1368.60	194.01	194.01	88939
48	10.60	0.00	180.20	0.00	1380.60	198.40	198.40	88939
49	10.40	0.00	184.20	0.00	1392.60	202.78	202.78	88939
50	10.20	0.00	188.20	0.00	1404.60	207.16	207.16	88939
51	10.00	0.00	192.20	0.00	1416.60	211.55	211.55	88939
52	9.80	2.00	194.20	0.00	1422.60	213.73	215.73	88939
53	9.60	4.00	196.20	0.00	1428.60	215.91	219.91	88939
54	9.40	6.00	198.20	0.00	1434.60	218.10	224.10	88939
55	9.20	8.00	200.20	0.00	1440.60	220.28	228.28	88939
56	9.00	10.00	202.20	0.00	1446.60	222.47	232.47	88939
57	8.80	12.00	204.20	0.00	1452.60	224.66	236.66	88939
58	8.60	14.00	206.20	0.00	1458.60	226.85	240.85	88939
59	8.40	16.00	208.20	0.00	1464.60	229.04	245.04	88939
60	8.20	18.00	210.20	0.00	1470.60	231.23	249.23	88939
61	8.00	20.00	212.20	0.00	1476.60	233.43	253.43	88939

(continued)

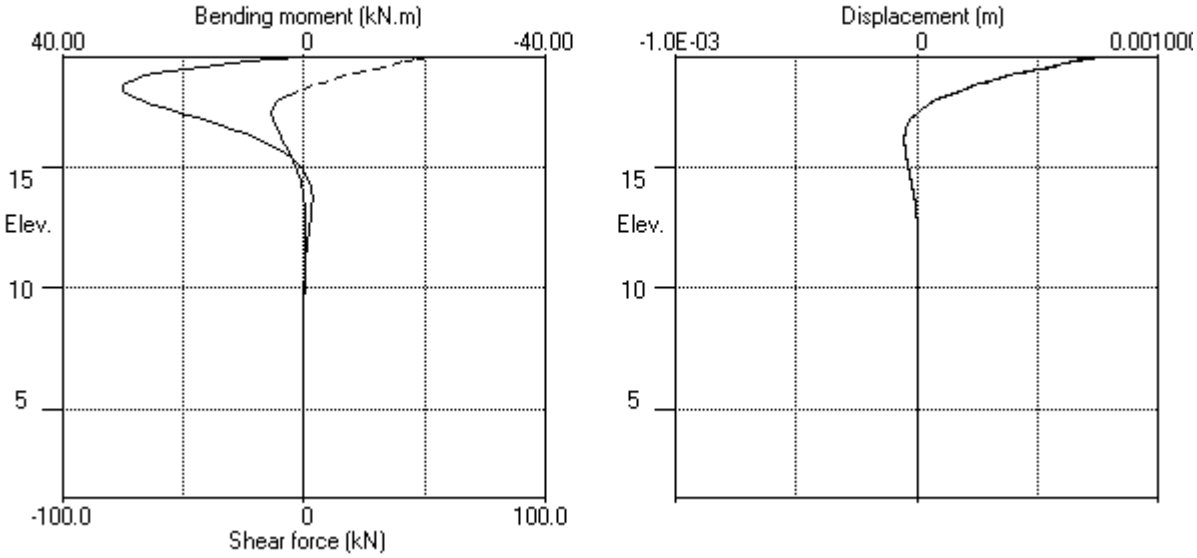
Stage No.1 Apply load no.1 at elevation 19.61

Node no.	Y coord	PASSIVE side						
		Effective stresses				Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	kN/m2	kN/m3
62	7.80	22.00	214.20	0.00	1482.60	235.62	257.62	88939
63	7.60	24.00	216.20	0.00	1488.60	237.82	261.82	88781
64	7.40	26.00	218.20	0.00	1494.60	240.02	266.02	88781
65	7.20	28.00	220.20	0.00	1500.60	242.21	270.21	88781
66	7.00	30.00	222.20	0.00	1506.60	244.41	274.41	88781
67	6.80	32.00	224.20	0.00	1512.60	246.61	278.61	88781
68	6.60	34.00	226.20	0.00	1518.60	248.81	282.81	88781
69	6.40	36.00	228.20	0.00	1524.60	251.01	287.01	88781
70	6.20	38.00	230.20	0.00	1530.60	253.21	291.21	88781
71	6.00	40.00	232.20	0.00	1536.60	255.41	295.41	88781
72	5.80	42.00	234.20	0.00	1542.60	257.61	299.61	88781
73	5.60	44.00	236.20	0.00	1548.60	259.81	303.81	88781
74	5.40	46.00	238.20	0.00	1554.60	262.01	308.01	88781
75	5.20	48.00	240.20	0.00	1560.60	264.21	312.21	88781
76	5.00	50.00	242.20	0.00	1566.60	266.42	316.42	88781
77	4.80	52.00	244.20	0.00	1572.60	268.62	320.62	88781
78	4.60	54.00	246.20	0.00	1578.60	270.82	324.82	88781
79	4.40	56.00	248.20	0.00	1584.60	273.02	329.02	88781
80	4.20	58.00	250.20	0.00	1590.60	275.22	333.22	88781
81	4.00	60.00	252.20	0.00	1596.60	277.42	337.42	88781
82	3.80	62.00	254.20	0.00	1602.60	279.62	341.62	88781
83	3.60	64.00	256.20	0.00	1608.60	281.82	345.82	88781
84	3.40	66.00	258.20	0.00	1614.60	284.02	350.02	88781
85	3.20	68.00	260.20	0.00	1620.60	286.22	354.22	88781
86	3.00	70.00	262.20	0.00	1626.60	288.42	358.42	88781
87	2.80	72.00	264.20	0.00	1632.60	290.62	362.62	126983
88	2.60	74.00	266.20	0.00	1638.60	292.82	366.82	126983
89	2.40	76.00	268.20	0.00	1644.60	295.02	371.02	126983
90	2.20	78.00	270.20	0.00	1650.60	297.22	375.22	126983
91	2.00	80.00	272.20	0.00	1656.60	299.42	379.42	126983
92	1.80	82.00	274.20	0.00	1662.60	301.62	383.62	126983
93	1.60	84.00	276.20	0.00	1668.60	303.82	387.82	126983
94	1.45	85.50	277.70	0.00	1673.10	305.47	390.97	126983
95	1.30	87.00	279.20	0.00	1677.60	307.12	394.12	126983

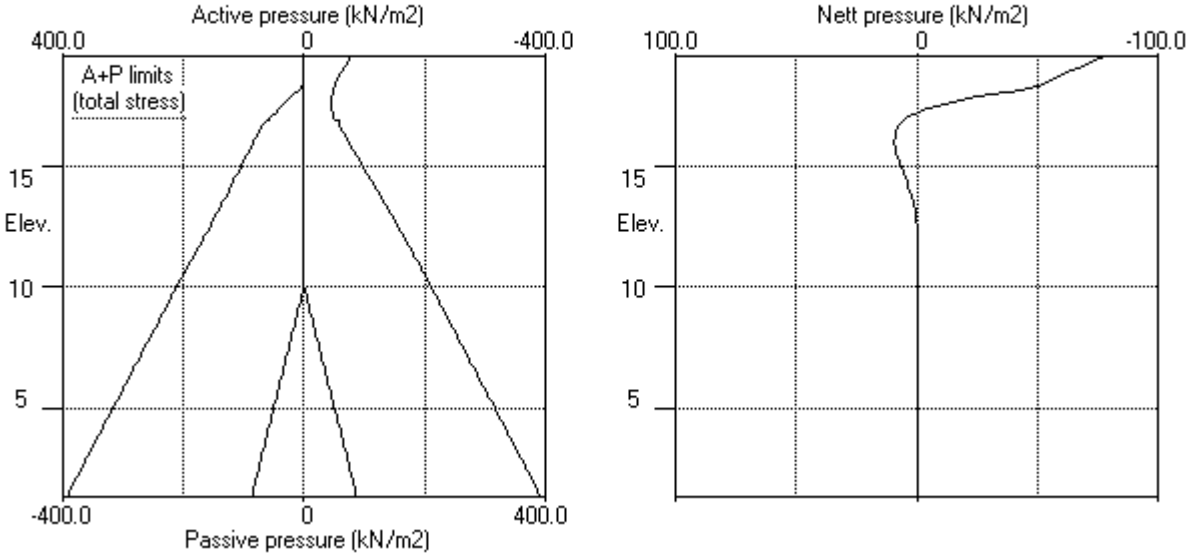
Note: 0.00a Soil pressure at active limit
123.45p Soil pressure at passive limit

Units: kN,m

Stage No.1 Apply load no.1 at elev. 19.61



Stage No.1 Apply load no.1 at elev. 19.61



Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.60m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
1	19.61	0.001	0.000	0.0	-0.0	50.0	0.0
2	19.51	0.001	0.000	5.0	0.0	45.2	0.0
3	19.40	0.001	0.000	9.5	0.0	40.5	0.0
4	19.20	0.001	0.000	16.7	0.0	32.0	0.0
5	19.00	0.000	0.000	22.2	0.0	24.0	0.0
6	18.80	0.000	0.000	26.2	0.0	16.5	0.0
7	18.60	0.000	0.000	28.8	0.0	9.6	0.0
8	18.40	0.000	0.000	30.0	0.0	3.1	0.0
9	18.20	0.000	0.000	30.1	0.0	0.0	-2.7
10	18.00	0.000	0.000	29.1	0.0	0.0	-7.1
11	17.80	0.000	0.000	27.3	0.0	0.0	-10.3
12	17.60	0.000	0.000	25.0	0.0	0.0	-12.2
13	17.40	0.000	0.000	22.4	0.0	0.0	-13.2
14	17.20	0.000	-0.000	19.7	0.0	0.0	-13.4
15	17.05	0.000	-0.000	17.7	0.0	0.0	-13.2
16	16.90	0.000	-0.000	15.7	0.0	0.0	-12.8
17	16.75	0.000	-0.000	13.9	0.0	0.0	-12.2
18	16.60	0.000	-0.000	12.1	0.0	0.0	-11.5
19	16.40	0.000	-0.000	9.9	0.0	0.0	-10.5
20	16.20	0.000	-0.000	7.9	0.0	0.0	-9.4
21	16.00	0.000	-0.000	6.1	0.0	0.0	-8.3
22	15.80	0.000	-0.000	4.5	0.0	0.0	-7.2
23	15.60	0.000	-0.000	3.2	0.0	0.0	-6.1
24	15.40	0.000	-0.000	2.1	0.0	0.0	-5.1
25	15.20	0.000	-0.000	1.2	0.0	0.0	-4.2
26	15.00	0.000	-0.000	0.4	0.0	0.0	-3.3
27	14.80	0.000	-0.000	0.0	-0.2	0.0	-2.6
28	14.60	0.000	-0.000	0.0	-0.6	0.0	-1.9
29	14.40	0.000	-0.000	0.0	-0.9	0.0	-1.4
30	14.20	0.000	-0.000	0.0	-1.2	0.0	-0.9
31	14.00	0.000	-0.000	0.0	-1.3	0.0	-0.5
32	13.80	0.000	-0.000	0.0	-1.4	0.0	-0.2
33	13.60	0.000	-0.000	0.0	-1.4	0.1	0.0
34	13.40	0.000	-0.000	0.0	-1.3	0.2	0.0
35	13.20	0.000	-0.000	0.0	-1.3	0.4	0.0
36	13.00	0.000	-0.000	0.0	-1.2	0.5	0.0
37	12.80	0.000	-0.000	0.0	-1.1	0.5	0.0
38	12.60	0.000	-0.000	0.0	-1.0	0.6	0.0
39	12.40	0.000	0.000	0.0	-0.9	0.6	0.0
40	12.20	0.000	0.000	0.0	-0.7	0.6	0.0
41	12.00	0.000	0.000	0.0	-0.6	0.5	0.0
42	11.80	0.000	0.000	0.0	-0.5	0.5	0.0
43	11.60	0.000	0.000	0.0	-0.4	0.5	0.0
44	11.40	0.000	0.000	0.0	-0.3	0.4	0.0
45	11.20	0.000	0.000	0.0	-0.3	0.4	0.0

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m	kN.m	kN	kN
46	11.00	0.000	0.000	0.0	-0.2	0.3	0.0
47	10.80	0.000	0.000	0.0	-0.1	0.3	0.0
48	10.60	0.000	0.000	0.0	-0.1	0.2	0.0
49	10.40	0.000	0.000	0.0	-0.1	0.2	0.0
50	10.20	0.000	0.000	0.0	-0.0	0.1	0.0
51	10.00	0.000	0.000	0.0	0.0	0.1	0.0
52	9.80	0.000	0.000	0.0	0.0	0.1	0.0
53	9.60	0.000	0.000	0.0	0.0	0.1	0.0
54	9.40	0.000	0.000	0.0	0.0	0.0	0.0
55	9.20	0.000	0.000	0.1	0.0	0.0	0.0
56	9.00	0.000	0.000	0.1	0.0	0.0	0.0
57	8.80	0.000	0.000	0.1	0.0	0.0	-0.0
58	8.60	0.000	0.000	0.1	0.0	0.0	-0.0
59	8.40	0.000	0.000	0.1	0.0	0.0	-0.0
60	8.20	0.000	0.000	0.1	0.0	0.0	-0.0
61	8.00	0.000	0.000	0.0	0.0	0.0	-0.0
62	7.80	0.000	0.000	0.0	0.0	0.0	-0.0
63	7.60	0.000	-0.000	0.0	0.0	0.0	-0.0
64	7.40	0.000	-0.000	0.0	0.0	0.0	-0.0
65	7.20	0.000	-0.000	0.0	0.0	0.0	-0.0
66	7.00	0.000	-0.000	0.0	0.0	0.0	-0.0
67	6.80	0.000	-0.000	0.0	0.0	0.0	-0.0
68	6.60	0.000	-0.000	0.0	0.0	0.0	-0.0
69	6.40	0.000	-0.000	0.0	0.0	0.0	-0.0
70	6.20	0.000	-0.000	0.0	0.0	0.0	-0.0
71	6.00	0.000	-0.000	0.0	0.0	0.0	-0.0
72	5.80	0.000	-0.000	0.0	0.0	0.0	-0.0
73	5.60	0.000	-0.000	0.0	0.0	0.0	-0.0
74	5.40	0.000	-0.000	0.0	0.0	0.0	-0.0
75	5.20	0.000	-0.000	0.0	-0.0	0.0	-0.0
76	5.00	0.000	-0.000	0.0	-0.0	0.0	-0.0
77	4.80	0.000	-0.000	0.0	-0.0	0.0	-0.0
78	4.60	0.000	-0.000	0.0	-0.0	0.0	-0.0
79	4.40	0.000	-0.000	0.0	-0.0	0.0	-0.0
80	4.20	0.000	-0.000	0.0	-0.0	0.0	-0.0
81	4.00	0.000	-0.000	0.0	-0.0	0.0	0.0
82	3.80	0.000	-0.000	0.0	-0.0	0.0	0.0
83	3.60	0.000	-0.000	0.0	-0.0	0.0	0.0
84	3.40	0.000	-0.000	0.0	-0.0	0.0	0.0
85	3.20	0.000	-0.000	0.0	-0.0	0.0	0.0
86	3.00	0.000	-0.000	0.0	-0.0	0.0	0.0
87	2.80	0.000	0.000	0.0	-0.0	0.0	0.0
88	2.60	0.000	0.000	0.0	-0.0	0.0	0.0
89	2.40	0.000	0.000	0.0	-0.0	0.0	0.0
90	2.20	0.000	0.000	0.0	-0.0	0.0	0.0
91	2.00	0.000	0.000	0.0	-0.0	0.0	0.0
92	1.80	0.000	0.000	0.0	-0.0	0.0	0.0
93	1.60	0.000	0.000	0.0	-0.0	0.0	0.0
94	1.45	0.000	0.000	0.0	-0.0	0.0	0.0
95	1.30	0.000	0.000	0.0	0.0	0.0	0.0

Maximum and minimum bending moment and shear force at each stage

Stage no.	Bending moment maximum	Bending moment elev.	Bending moment minimum	Bending moment elev.	Shear force maximum	Shear force elev.	Shear force minimum	Shear force elev.
	kN.m		kN.m		kN		kN	
1	30.1	18.20	-1.4	13.60	50.0	19.61	-13.4	17.20

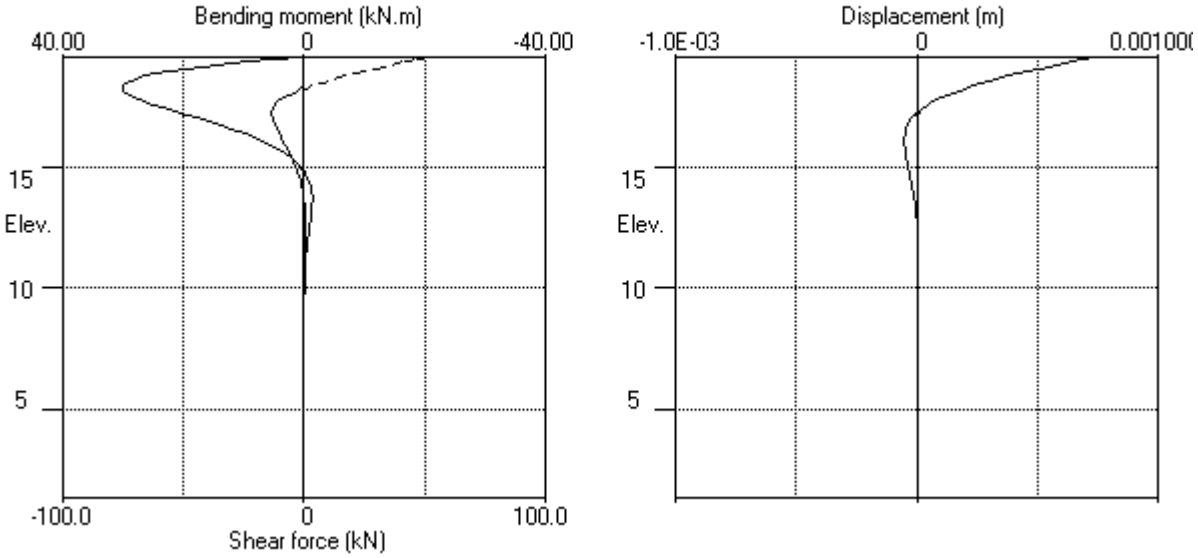
Summary of results (continued)

Maximum and minimum displacement at each stage

Stage no.	Displacement maximum	elev.	minimum	elev.	Stage description
	m		m		
1	0.001	19.61	-0.000	16.00	Apply load no.1 at elev. 19.61

Units: kN,m

Bending moment, shear force, displacement envelopes



ROGER STAGG ASSOCIATES, Dartford, Kent | Sheet No.
Program: WALLAP Version 6.05 Revision A45.B58.R49 | Job No. 21315
Licensed from GEOSOLVE | Made by : RS
Data filename/Run ID: 21315-E |
Camley St | Date: 6-10-2015
General piling 750 dia CoL 21.86 Hz = 50 | Checked :

Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Active side	Passive side
1	22.66	1 London Clay	1 London Clay
2	16.90	2 London Clay	2 London Clay

SOIL PROPERTIES

-- Soil type -- No.	Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	London Clay	20.00	42700	1.000	OC	0.000	1.000	83.00d
	(21.86)		(7700)		(0.490)	(0.000)	(2.000)	(16.00)
2	London Clay	20.00	77000	1.100	OC	0.000	1.000	140.0d
					(0.490)	(0.000)	(2.000)	

Additional soil parameters associated with Ka and Kp

		--- parameters for Ka ---			--- parameters for Kp ---		
------- Soil type ------- No.	Description	Soil friction angle	Wall adhesion coeff.	Back-fill angle	Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	London Clay	0.00	0.000	0.00	0.00	0.000	0.00
2	London Clay	0.00	0.000	0.00	0.00	0.000	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Active side	Passive side
Initial water table elevation	10.00	10.00

Automatic water pressure balancing at toe of pile : No

PILE PROPERTIES

Type of structure = Single Pile
Pile diameter = 0.75 m
Elevation of toe of pile = -1.50
Maximum finite element length = 0.20 m
Pile diameter = 0.75 m
Youngs modulus of pile E = 2.3000E+07 kN/m2
Moment of inertia of pile I = 0.015534 m4
E.I = 357272 kN.m2
Yield Moment of pile = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN	Moment load kN.m	Moment restraint kN.m/rad	Partial factor/ Category
1	21.86	50.00	0	0	N/A

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Apply load no.1 at elevation 21.86

FACTORS OF SAFETY and ANALYSIS OPTIONS

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - Subgrade reaction model using Influence Coefficients

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Apply load no.1 at elev. 21.86	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No. 1 Apply load no.1 at elevation 21.86

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.75m

Subgrade reaction model - Boussinesq Influence coefficients

Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
1	22.66	-20.82	0.000	1.57E-04	0.0	0.0	
2	22.49	-23.78	0.000	1.57E-04	-2.8	-0.2	
3	22.32	-26.64	0.000	1.57E-04	-6.1	-1.0	
4	22.09	-30.38	0.000	1.59E-04	-11.0	-2.9	
5	21.86	-33.95	0.000	1.62E-04	-16.5	-6.1	-50.0
		-33.95	0.000	1.62E-04	33.5	-6.1	
6	21.73	-34.56	0.000	1.63E-04	30.1	-1.9	
7	21.60	-33.11	0.000	1.63E-04	26.8	1.8	
8	21.36	-30.21	0.000	1.60E-04	21.1	7.5	
9	21.12	-27.10	0.000	1.53E-04	16.0	11.9	
10	20.88	-23.89	0.000	1.44E-04	11.4	15.2	
11	20.64	-20.66	0.000	1.33E-04	7.4	17.4	
12	20.40	-17.49	0.000	1.21E-04	3.9	18.7	
13	20.16	-14.45	0.000	1.08E-04	1.1	19.3	
14	19.92	-11.58	0.000	9.60E-05	-1.3	19.2	
15	19.68	-8.94	0.000	8.33E-05	-3.1	18.7	
16	19.44	-6.54	0.000	7.11E-05	-4.5	17.7	
17	19.20	-4.40	0.000	5.96E-05	-5.5	16.5	
18	18.96	-2.54	0.000	4.90E-05	-6.1	15.1	
19	18.72	-0.94	0.000	3.93E-05	-6.4	13.6	
20	18.48	0.31	-0.000	3.07E-05	-6.5	12.0	
21	18.24	1.17	-0.000	2.32E-05	-6.4	10.5	
22	18.00	1.85	-0.000	1.67E-05	-6.1	9.0	
23	17.76	2.36	-0.000	1.11E-05	-5.7	7.5	
24	17.52	2.72	-0.000	6.57E-06	-5.2	6.2	
25	17.28	2.94	-0.000	2.79E-06	-4.7	5.0	
26	17.09	3.04	-0.000	3.60E-07	-4.3	4.2	
27	16.90	3.08	-0.000	-1.64E-06	-3.9	3.4	
		2.93	-0.000	-1.64E-06	-3.9	3.4	
28	16.73	2.87	-0.000	-3.10E-06	-3.5	2.8	
29	16.56	2.78	-0.000	-4.27E-06	-3.1	2.2	
30	16.32	2.61	-0.000	-5.50E-06	-2.7	1.5	
31	16.08	2.41	-0.000	-6.31E-06	-2.2	0.9	
32	15.84	2.18	-0.000	-6.76E-06	-1.8	0.4	
33	15.60	1.94	-0.000	-6.92E-06	-1.4	0.0	
34	15.36	1.70	-0.000	-6.86E-06	-1.1	-0.3	
35	15.12	1.47	-0.000	-6.61E-06	-0.8	-0.5	
36	14.88	1.25	-0.000	-6.24E-06	-0.6	-0.6	
37	14.64	1.04	-0.000	-5.77E-06	-0.4	-0.7	
38	14.40	0.85	-0.000	-5.25E-06	-0.2	-0.8	
39	14.16	0.68	-0.000	-4.69E-06	-0.1	-0.8	
40	13.92	0.53	-0.000	-4.13E-06	0.1	-0.8	
41	13.68	0.39	-0.000	-3.58E-06	0.1	-0.8	
42	13.44	0.28	-0.000	-3.05E-06	0.2	-0.8	
43	13.20	0.18	-0.000	-2.55E-06	0.2	-0.7	
44	12.96	0.10	-0.000	-2.10E-06	0.3	-0.7	

(continued)

Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
45	12.72	0.04	-0.000	-1.68E-06	0.3	-0.6	
46	12.48	-0.02	0.000	-1.31E-06	0.3	-0.5	
47	12.24	-0.06	0.000	-9.93E-07	0.3	-0.4	
48	12.00	-0.09	0.000	-7.13E-07	0.3	-0.4	
49	11.76	-0.11	0.000	-4.76E-07	0.2	-0.3	
50	11.52	-0.12	0.000	-2.78E-07	0.2	-0.3	
51	11.28	-0.13	0.000	-1.16E-07	0.2	-0.2	
52	11.04	-0.13	0.000	1.22E-08	0.2	-0.2	
53	10.80	-0.13	0.000	1.12E-07	0.2	-0.1	
54	10.56	-0.12	0.000	1.86E-07	0.1	-0.1	
55	10.32	-0.11	0.000	2.39E-07	0.1	-0.1	
56	10.16	-0.11	0.000	2.64E-07	0.1	-0.0	
57	10.00	-0.10	0.000	2.81E-07	0.1	-0.0	
58	9.80	-0.09	0.000	2.94E-07	0.1	-0.0	
59	9.60	-0.08	0.000	2.99E-07	0.1	-0.0	
60	9.36	-0.07	0.000	2.96E-07	0.0	0.0	
61	9.12	-0.06	0.000	2.85E-07	0.0	0.0	
62	8.88	-0.05	0.000	2.69E-07	0.0	0.0	
63	8.64	-0.04	0.000	2.48E-07	0.0	0.0	
64	8.40	-0.04	0.000	2.26E-07	0.0	0.0	
65	8.16	-0.03	0.000	2.02E-07	0.0	0.0	
66	7.92	-0.02	0.000	1.78E-07	-0.0	0.0	
67	7.68	-0.02	0.000	1.54E-07	-0.0	0.0	
68	7.44	-0.01	0.000	1.31E-07	-0.0	0.0	
69	7.20	-0.01	0.000	1.09E-07	-0.0	0.0	
70	6.96	-0.00	0.000	9.02E-08	-0.0	0.0	
71	6.72	-0.00	0.000	7.24E-08	-0.0	0.0	
72	6.48	0.00	-0.000	5.65E-08	-0.0	0.0	
73	6.24	0.00	-0.000	4.25E-08	-0.0	0.0	
74	6.00	0.00	-0.000	3.05E-08	-0.0	0.0	
75	5.76	0.00	-0.000	2.03E-08	-0.0	0.0	
76	5.52	0.01	-0.000	1.18E-08	-0.0	0.0	
77	5.28	0.01	-0.000	4.91E-09	-0.0	0.0	
78	5.04	0.01	-0.000	-6.10E-10	-0.0	0.0	
79	4.80	0.01	-0.000	-4.88E-09	-0.0	0.0	
80	4.56	0.01	-0.000	-8.06E-09	-0.0	0.0	
81	4.32	0.00	-0.000	-1.03E-08	-0.0	0.0	
82	4.08	0.00	-0.000	-1.17E-08	-0.0	0.0	
83	3.84	0.00	-0.000	-1.25E-08	-0.0	0.0	
84	3.60	0.00	-0.000	-1.28E-08	-0.0	0.0	
85	3.36	0.00	-0.000	-1.26E-08	-0.0	-0.0	
86	3.12	0.00	-0.000	-1.22E-08	-0.0	-0.0	
87	2.88	0.00	-0.000	-1.15E-08	-0.0	-0.0	
88	2.64	0.00	-0.000	-1.06E-08	-0.0	-0.0	
89	2.40	0.00	-0.000	-9.69E-09	-0.0	-0.0	
90	2.16	0.00	-0.000	-8.68E-09	-0.0	-0.0	
91	1.92	0.00	-0.000	-7.67E-09	0.0	-0.0	
92	1.68	0.00	-0.000	-6.68E-09	0.0	-0.0	
93	1.44	0.00	-0.000	-5.75E-09	0.0	-0.0	
94	1.20	0.00	-0.000	-4.90E-09	0.0	-0.0	
95	0.96	0.00	-0.000	-4.13E-09	0.0	-0.0	
96	0.72	0.00	-0.000	-3.46E-09	0.0	-0.0	
97	0.48	-0.00	0.000	-2.88E-09	0.0	-0.0	
98	0.24	-0.00	0.000	-2.41E-09	0.0	-0.0	
99	0.00	-0.00	0.000	-2.04E-09	0.0	-0.0	
100	-0.24	-0.00	0.000	-1.75E-09	0.0	-0.0	
101	-0.48	-0.00	0.000	-1.55E-09	0.0	-0.0	
102	-0.72	-0.00	0.000	-1.42E-09	0.0	-0.0	

(continued)

Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	Nett pressure kN/m2	Pile disp. m	Pile rotation rad.	Shear force kN	Bending moment kN.m	Strut forces kN
103	-0.96	-0.00	0.000	-1.35E-09	0.0	-0.0	
104	-1.20	-0.00	0.000	-1.31E-09	0.0	-0.0	
105	-1.35	-0.00	0.000	-1.31E-09	0.0	-0.0	
106	-1.50	-0.00	0.000	-1.31E-09	-0.0	0.0	

Node no.	Y coord	ACTIVE side: Effective stresses: Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	22.66	0.00	0.00	0.00	421.20	0.00	0.00a	43045
2	22.49	0.00	3.40	0.00	447.72	0.00	0.00a	44587
3	22.32	0.00	6.80	0.00	474.24	0.00	0.00a	46129
4	22.09	0.00	11.40	0.00	510.13	0.00	0.00a	48215
5	21.86	0.00	16.00	0.00	546.01	0.00	0.00a	50302
6	21.73	0.00	18.60	0.00	566.29	1.32	1.32	51481
7	21.60	0.00	21.20	0.00	586.57	4.64	4.64	52660
8	21.36	0.00	26.00	0.00	624.02	10.90	10.90	54837
9	21.12	0.00	30.80	0.00	661.46	17.25	17.25	57014
10	20.88	0.00	35.60	0.00	698.90	23.66	23.66	59191
11	20.64	0.00	40.40	0.00	736.34	30.07	30.07	61368
12	20.40	0.00	45.20	0.00	773.79	36.46	36.46	63545
13	20.16	0.00	50.00	0.00	811.23	42.78	42.78	65722
14	19.92	0.00	54.80	0.00	848.67	49.01	49.01	67899
15	19.68	0.00	59.60	0.00	886.12	55.13	55.13	70076
16	19.44	0.00	64.40	0.00	923.56	61.13	61.13	72253
17	19.20	0.00	69.20	0.00	961.00	67.00	67.00	74430
18	18.96	0.00	74.00	0.00	998.44	72.73	72.73	76607
19	18.72	0.00	78.80	0.00	1035.89	78.33	78.33	78784
20	18.48	0.00	83.60	0.00	1073.33	83.76	83.76	64224
21	18.24	0.00	88.40	0.00	1110.77	88.99	88.99	65951
22	18.00	0.00	93.20	0.00	1148.22	94.12	94.12	67678
23	17.76	0.00	98.00	0.00	1185.66	99.18	99.18	69404
24	17.52	0.00	102.80	0.00	1223.10	104.16	104.16	71131
25	17.28	0.00	107.60	0.00	1260.54	109.07	109.07	72858
26	17.09	0.00	111.40	0.00	1290.19	112.92	112.92	74226
27	16.90	0.00	115.20	0.00	1319.83	116.74	116.74	75593
		0.00	115.20	0.00	1185.60	128.19	128.19	71956
28	16.73	0.00	118.60	0.00	1195.80	131.90	131.90	71956
29	16.56	0.00	122.00	0.00	1206.00	135.59	135.59	71956
30	16.32	0.00	126.80	0.00	1220.40	140.79	140.79	71956
31	16.08	0.00	131.60	0.00	1234.80	145.96	145.96	71956
32	15.84	0.00	136.40	0.00	1249.20	151.13	151.13	71956
33	15.60	0.00	141.20	0.00	1263.60	156.29	156.29	71956
34	15.36	0.00	146.00	0.00	1278.00	161.45	161.45	71956
35	15.12	0.00	150.80	0.00	1292.40	166.62	166.62	71956
36	14.88	0.00	155.60	0.00	1306.80	171.78	171.78	71956
37	14.64	0.00	160.40	0.00	1321.20	176.96	176.96	71956
38	14.40	0.00	165.20	0.00	1335.60	182.15	182.15	71956
39	14.16	0.00	170.00	0.00	1350.00	187.34	187.34	71956
40	13.92	0.00	174.80	0.00	1364.40	192.54	192.54	71956
41	13.68	0.00	179.60	0.00	1378.80	197.76	197.76	71956
42	13.44	0.00	184.40	0.00	1393.20	202.98	202.98	71956
43	13.20	0.00	189.20	0.00	1407.60	208.21	208.21	71956
44	12.96	0.00	194.00	0.00	1422.00	213.45	213.45	71956
45	12.72	0.00	198.80	0.00	1436.40	218.70	218.70	71956
46	12.48	0.00	203.60	0.00	1450.80	223.95	223.95	71956

(continued)

Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	ACTIVE side						
			Effective stresses					
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
47	12.24	0.00	208.40	0.00	1465.20	229.21	229.21	71956
48	12.00	0.00	213.20	0.00	1479.60	234.48	234.48	71956
49	11.76	0.00	218.00	0.00	1494.00	239.75	239.75	71956
50	11.52	0.00	222.80	0.00	1508.40	245.02	245.02	71956
51	11.28	0.00	227.60	0.00	1522.80	250.30	250.30	71956
52	11.04	0.00	232.40	0.00	1537.20	255.58	255.58	71956
53	10.80	0.00	237.20	0.00	1551.60	260.86	260.86	71956
54	10.56	0.00	242.00	0.00	1566.00	266.14	266.14	71956
55	10.32	0.00	246.80	0.00	1580.40	271.42	271.42	71956
56	10.16	0.00	250.00	0.00	1590.00	274.95	274.95	71956
57	10.00	0.00	253.20	0.00	1599.60	278.47	278.47	71956
58	9.80	2.00	255.20	0.00	1605.60	280.67	282.67	71956
59	9.60	4.00	257.20	0.00	1611.60	282.88	286.88	71956
60	9.36	6.40	259.60	0.00	1618.80	285.52	291.92	71956
61	9.12	8.80	262.00	0.00	1626.00	288.17	296.97	71956
62	8.88	11.20	264.40	0.00	1633.20	290.81	302.01	71956
63	8.64	13.60	266.80	0.00	1640.40	293.46	307.06	71956
64	8.40	16.00	269.20	0.00	1647.60	296.10	312.10	71956
65	8.16	18.40	271.60	0.00	1654.80	298.75	317.15	71956
66	7.92	20.80	274.00	0.00	1662.00	301.39	322.19	71956
67	7.68	23.20	276.40	0.00	1669.20	304.03	327.23	71956
68	7.44	25.60	278.80	0.00	1676.40	306.67	332.27	71956
69	7.20	28.00	281.20	0.00	1683.60	309.32	337.32	71956
70	6.96	30.40	283.60	0.00	1690.80	311.96	342.36	71956
71	6.72	32.80	286.00	0.00	1698.00	314.60	347.40	71956
72	6.48	35.20	288.40	0.00	1705.20	317.24	352.44	71830
73	6.24	37.60	290.80	0.00	1712.40	319.88	357.48	71830
74	6.00	40.00	293.20	0.00	1719.60	322.52	362.52	71830
75	5.76	42.40	295.60	0.00	1726.80	325.16	367.56	71830
76	5.52	44.80	298.00	0.00	1734.00	327.80	372.60	71830
77	5.28	47.20	300.40	0.00	1741.20	330.44	377.64	71830
78	5.04	49.60	302.80	0.00	1748.40	333.08	382.68	71830
79	4.80	52.00	305.20	0.00	1755.60	335.72	387.72	71830
80	4.56	54.40	307.60	0.00	1762.80	338.36	392.76	71830
81	4.32	56.80	310.00	0.00	1770.00	341.00	397.80	71830
82	4.08	59.20	312.40	0.00	1777.20	343.64	402.84	71830
83	3.84	61.60	314.80	0.00	1784.40	346.28	407.88	71830
84	3.60	64.00	317.20	0.00	1791.60	348.92	412.92	71830
85	3.36	66.40	319.60	0.00	1798.80	351.56	417.96	71830
86	3.12	68.80	322.00	0.00	1806.00	354.20	423.00	71830
87	2.88	71.20	324.40	0.00	1813.20	356.84	428.04	71830
88	2.64	73.60	326.80	0.00	1820.40	359.48	433.08	71830
89	2.40	76.00	329.20	0.00	1827.60	362.12	438.12	71830
90	2.16	78.40	331.60	0.00	1834.80	364.76	443.16	71830
91	1.92	80.80	334.00	0.00	1842.00	367.40	448.20	71830
92	1.68	83.20	336.40	0.00	1849.20	370.04	453.24	71830
93	1.44	85.60	338.80	0.00	1856.40	372.68	458.28	71830
94	1.20	88.00	341.20	0.00	1863.60	375.32	463.32	71830
95	0.96	90.40	343.60	0.00	1870.80	377.96	468.36	71830
96	0.72	92.80	346.00	0.00	1878.00	380.60	473.40	71830
97	0.48	95.20	348.40	0.00	1885.20	383.24	478.44	97254
98	0.24	97.60	350.80	0.00	1892.40	385.88	483.48	97254
99	0.00	100.00	353.20	0.00	1899.60	388.52	488.52	97254
100	-0.24	102.40	355.60	0.00	1906.80	391.16	493.56	97254
101	-0.48	104.80	358.00	0.00	1914.00	393.80	498.60	97254

(continued)

Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	ACTIVE side: Water press. kN/m2	Effective stresses: Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
102	-0.72	107.20	360.40	0.00	1921.20	396.44	503.64	97254
103	-0.96	109.60	362.80	0.00	1928.40	399.08	508.68	97254
104	-1.20	112.00	365.20	0.00	1935.60	401.72	513.72	97254
105	-1.35	113.50	366.70	0.00	1940.10	403.37	516.87	97254
106	-1.50	115.00	368.20	0.00	1944.60	405.02	520.02	97254

Node no.	Y coord	PASSIVE side: Water press. kN/m2	Effective stresses: Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	Total earth pressure kN/m2	Soil stiffness coeff. kN/m3
1	22.66	0.00	0.00	0.00	421.20	20.82	20.82	43045
2	22.49	0.00	3.40	0.00	447.72	23.78	23.78	44587
3	22.32	0.00	6.80	0.00	474.24	26.64	26.64	46129
4	22.09	0.00	11.40	0.00	510.13	30.38	30.38	48215
5	21.86	0.00	16.00	0.00	546.01	33.95	33.95	50302
6	21.73	0.00	18.60	0.00	566.29	35.88	35.88	51481
7	21.60	0.00	21.20	0.00	586.57	37.76	37.76	52660
8	21.36	0.00	26.00	0.00	624.02	41.10	41.10	54837
9	21.12	0.00	30.80	0.00	661.46	44.35	44.35	57014
10	20.88	0.00	35.60	0.00	698.90	47.54	47.54	59191
11	20.64	0.00	40.40	0.00	736.34	50.73	50.73	61368
12	20.40	0.00	45.20	0.00	773.79	53.94	53.94	63545
13	20.16	0.00	50.00	0.00	811.23	57.22	57.22	65722
14	19.92	0.00	54.80	0.00	848.67	60.59	60.59	67899
15	19.68	0.00	59.60	0.00	886.12	64.07	64.07	70076
16	19.44	0.00	64.40	0.00	923.56	67.67	67.67	72253
17	19.20	0.00	69.20	0.00	961.00	71.40	71.40	74430
18	18.96	0.00	74.00	0.00	998.44	75.27	75.27	76607
19	18.72	0.00	78.80	0.00	1035.89	79.27	79.27	78784
20	18.48	0.00	83.60	0.00	1073.33	83.44	83.44	64224
21	18.24	0.00	88.40	0.00	1110.77	87.81	87.81	65951
22	18.00	0.00	93.20	0.00	1148.22	92.28	92.28	67678
23	17.76	0.00	98.00	0.00	1185.66	96.82	96.82	69404
24	17.52	0.00	102.80	0.00	1223.10	101.44	101.44	71131
25	17.28	0.00	107.60	0.00	1260.54	106.13	106.13	72858
26	17.09	0.00	111.40	0.00	1290.19	109.88	109.88	74226
27	16.90	0.00	115.20	0.00	1319.83	113.66	113.66	75593
		0.00	115.20	0.00	1185.60	125.25	125.25	71956
28	16.73	0.00	118.60	0.00	1195.80	129.02	129.02	71956
29	16.56	0.00	122.00	0.00	1206.00	132.81	132.81	71956
30	16.32	0.00	126.80	0.00	1220.40	138.17	138.17	71956
31	16.08	0.00	131.60	0.00	1234.80	143.56	143.56	71956
32	15.84	0.00	136.40	0.00	1249.20	148.95	148.95	71956
33	15.60	0.00	141.20	0.00	1263.60	154.35	154.35	71956
34	15.36	0.00	146.00	0.00	1278.00	159.75	159.75	71956
35	15.12	0.00	150.80	0.00	1292.40	165.14	165.14	71956
36	14.88	0.00	155.60	0.00	1306.80	170.54	170.54	71956
37	14.64	0.00	160.40	0.00	1321.20	175.92	175.92	71956
38	14.40	0.00	165.20	0.00	1335.60	181.29	181.29	71956
39	14.16	0.00	170.00	0.00	1350.00	186.66	186.66	71956
40	13.92	0.00	174.80	0.00	1364.40	192.02	192.02	71956
41	13.68	0.00	179.60	0.00	1378.80	197.36	197.36	71956
42	13.44	0.00	184.40	0.00	1393.20	202.70	202.70	71956

(continued)

Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	PASSIVE side						
			Effective stresses					
		Water press.	Vertic -al	Active limit	Passive limit	Earth pressure	Total earth pressure	Soil stiffness coeff.
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m3
43	13.20	0.00	189.20	0.00	1407.60	208.03	208.03	71956
44	12.96	0.00	194.00	0.00	1422.00	213.35	213.35	71956
45	12.72	0.00	198.80	0.00	1436.40	218.66	218.66	71956
46	12.48	0.00	203.60	0.00	1450.80	223.97	223.97	71956
47	12.24	0.00	208.40	0.00	1465.20	229.27	229.27	71956
48	12.00	0.00	213.20	0.00	1479.60	234.56	234.56	71956
49	11.76	0.00	218.00	0.00	1494.00	239.85	239.85	71956
50	11.52	0.00	222.80	0.00	1508.40	245.14	245.14	71956
51	11.28	0.00	227.60	0.00	1522.80	250.42	250.42	71956
52	11.04	0.00	232.40	0.00	1537.20	255.70	255.70	71956
53	10.80	0.00	237.20	0.00	1551.60	260.98	260.98	71956
54	10.56	0.00	242.00	0.00	1566.00	266.26	266.26	71956
55	10.32	0.00	246.80	0.00	1580.40	271.54	271.54	71956
56	10.16	0.00	250.00	0.00	1590.00	275.05	275.05	71956
57	10.00	0.00	253.20	0.00	1599.60	278.57	278.57	71956
58	9.80	2.00	255.20	0.00	1605.60	280.77	282.77	71956
59	9.60	4.00	257.20	0.00	1611.60	282.96	286.96	71956
60	9.36	6.40	259.60	0.00	1618.80	285.60	292.00	71956
61	9.12	8.80	262.00	0.00	1626.00	288.23	297.03	71956
62	8.88	11.20	264.40	0.00	1633.20	290.87	302.07	71956
63	8.64	13.60	266.80	0.00	1640.40	293.50	307.10	71956
64	8.40	16.00	269.20	0.00	1647.60	296.14	312.14	71956
65	8.16	18.40	271.60	0.00	1654.80	298.77	317.17	71956
66	7.92	20.80	274.00	0.00	1662.00	301.41	322.21	71956
67	7.68	23.20	276.40	0.00	1669.20	304.05	327.25	71956
68	7.44	25.60	278.80	0.00	1676.40	306.69	332.29	71956
69	7.20	28.00	281.20	0.00	1683.60	309.32	337.32	71956
70	6.96	30.40	283.60	0.00	1690.80	311.96	342.36	71956
71	6.72	32.80	286.00	0.00	1698.00	314.60	347.40	71956
72	6.48	35.20	288.40	0.00	1705.20	317.24	352.44	71830
73	6.24	37.60	290.80	0.00	1712.40	319.88	357.48	71830
74	6.00	40.00	293.20	0.00	1719.60	322.52	362.52	71830
75	5.76	42.40	295.60	0.00	1726.80	325.16	367.56	71830
76	5.52	44.80	298.00	0.00	1734.00	327.80	372.60	71830
77	5.28	47.20	300.40	0.00	1741.20	330.44	377.64	71830
78	5.04	49.60	302.80	0.00	1748.40	333.08	382.68	71830
79	4.80	52.00	305.20	0.00	1755.60	335.72	387.72	71830
80	4.56	54.40	307.60	0.00	1762.80	338.36	392.76	71830
81	4.32	56.80	310.00	0.00	1770.00	341.00	397.80	71830
82	4.08	59.20	312.40	0.00	1777.20	343.64	402.84	71830
83	3.84	61.60	314.80	0.00	1784.40	346.28	407.88	71830
84	3.60	64.00	317.20	0.00	1791.60	348.92	412.92	71830
85	3.36	66.40	319.60	0.00	1798.80	351.56	417.96	71830
86	3.12	68.80	322.00	0.00	1806.00	354.20	423.00	71830
87	2.88	71.20	324.40	0.00	1813.20	356.84	428.04	71830
88	2.64	73.60	326.80	0.00	1820.40	359.48	433.08	71830
89	2.40	76.00	329.20	0.00	1827.60	362.12	438.12	71830
90	2.16	78.40	331.60	0.00	1834.80	364.76	443.16	71830
91	1.92	80.80	334.00	0.00	1842.00	367.40	448.20	71830
92	1.68	83.20	336.40	0.00	1849.20	370.04	453.24	71830
93	1.44	85.60	338.80	0.00	1856.40	372.68	458.28	71830
94	1.20	88.00	341.20	0.00	1863.60	375.32	463.32	71830
95	0.96	90.40	343.60	0.00	1870.80	377.96	468.36	71830
96	0.72	92.80	346.00	0.00	1878.00	380.60	473.40	71830
97	0.48	95.20	348.40	0.00	1885.20	383.24	478.44	97254

(continued)

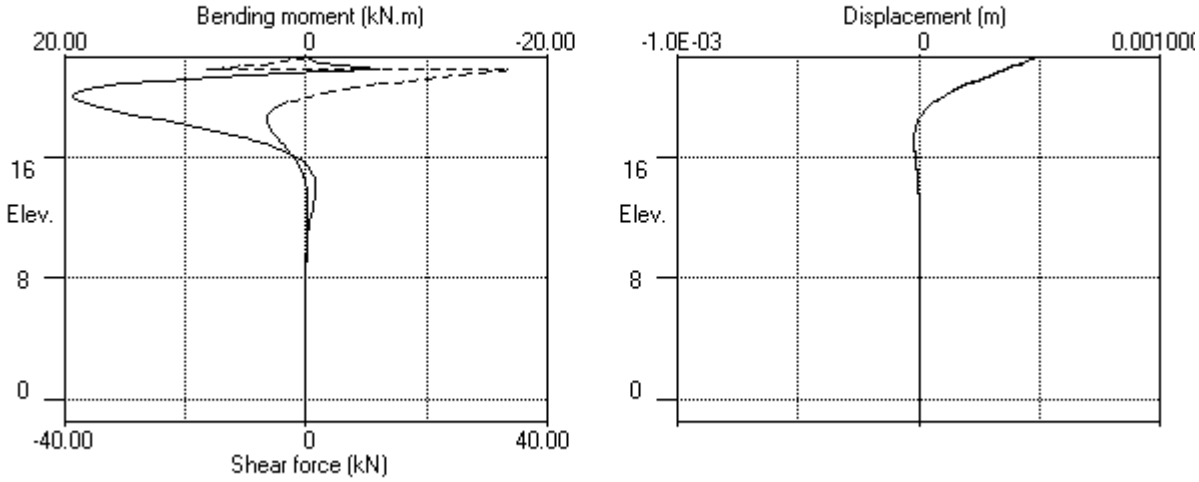
Stage No.1 Apply load no.1 at elevation 21.86

Node no.	Y coord	PASSIVE side						
		Effective stresses				Total earth pressure	Soil stiffness coeff.
		Water press. kN/m2	Vertic -al kN/m2	Active limit kN/m2	Passive limit kN/m2	Earth pressure kN/m2	kN/m2	kN/m3
98	0.24	97.60	350.80	0.00	1892.40	385.88	483.48	97254
99	0.00	100.00	353.20	0.00	1899.60	388.52	488.52	97254
100	-0.24	102.40	355.60	0.00	1906.80	391.16	493.56	97254
101	-0.48	104.80	358.00	0.00	1914.00	393.80	498.60	97254
102	-0.72	107.20	360.40	0.00	1921.20	396.44	503.64	97254
103	-0.96	109.60	362.80	0.00	1928.40	399.08	508.68	97254
104	-1.20	112.00	365.20	0.00	1935.60	401.72	513.72	97254
105	-1.35	113.50	366.70	0.00	1940.10	403.37	516.87	97254
106	-1.50	115.00	368.20	0.00	1944.60	405.02	520.02	97254

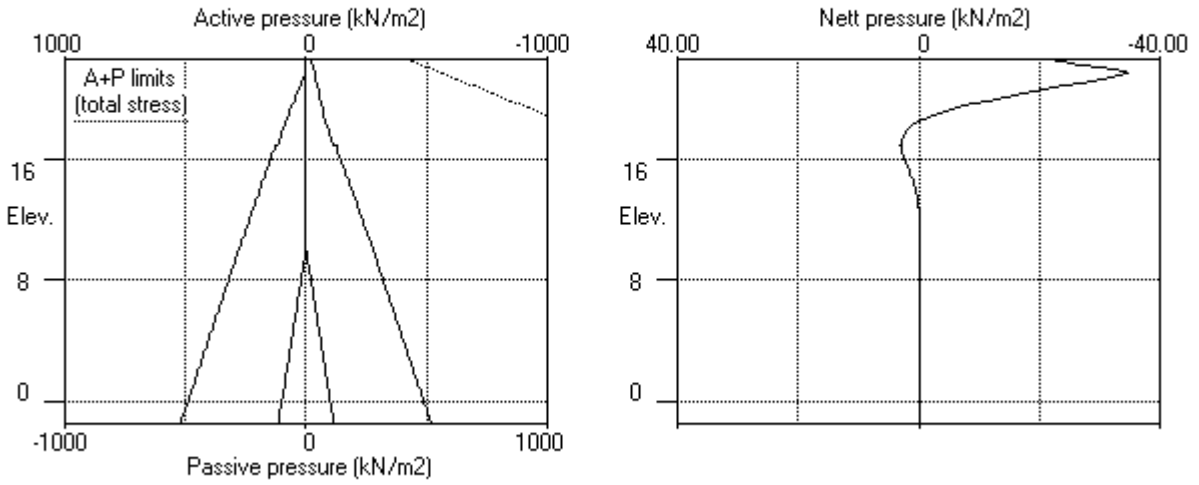
Note: 0.00a Soil pressure at active limit
123.45p Soil pressure at passive limit

Units: kN,m

Stage No.1 Apply load no.1 at elev. 21.86



Stage No.1 Apply load no.1 at elev. 21.86



Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Single Pile

Analysis options

Pile diameter = 0.75m
Subgrade reaction model - Boussinesq Influence coefficients
Soil deformations are elastic until the active or passive limit is reached

Rigid boundaries: Active side 20.00 from pile
Passive side 20.00 from pile

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
1	22.66	0.000	0.000	0.0	0.0	0.0	0.0
2	22.49	0.000	0.000	0.0	-0.2	0.0	-2.8
3	22.32	0.000	0.000	0.0	-1.0	0.0	-6.1
4	22.09	0.000	0.000	0.0	-2.9	0.0	-11.0
5	21.86	0.000	0.000	0.0	-6.1	33.5	-16.5
6	21.73	0.000	0.000	0.0	-1.9	30.1	0.0
7	21.60	0.000	0.000	1.8	0.0	26.8	0.0
8	21.36	0.000	0.000	7.5	0.0	21.1	0.0
9	21.12	0.000	0.000	11.9	0.0	16.0	0.0
10	20.88	0.000	0.000	15.2	0.0	11.4	0.0
11	20.64	0.000	0.000	17.4	0.0	7.4	0.0
12	20.40	0.000	0.000	18.7	0.0	3.9	0.0
13	20.16	0.000	0.000	19.3	0.0	1.1	0.0
14	19.92	0.000	0.000	19.2	0.0	0.0	-1.3
15	19.68	0.000	0.000	18.7	0.0	0.0	-3.1
16	19.44	0.000	0.000	17.7	0.0	0.0	-4.5
17	19.20	0.000	0.000	16.5	0.0	0.0	-5.5
18	18.96	0.000	0.000	15.1	0.0	0.0	-6.1
19	18.72	0.000	0.000	13.6	0.0	0.0	-6.4
20	18.48	0.000	-0.000	12.0	0.0	0.0	-6.5
21	18.24	0.000	-0.000	10.5	0.0	0.0	-6.4
22	18.00	0.000	-0.000	9.0	0.0	0.0	-6.1
23	17.76	0.000	-0.000	7.5	0.0	0.0	-5.7
24	17.52	0.000	-0.000	6.2	0.0	0.0	-5.2
25	17.28	0.000	-0.000	5.0	0.0	0.0	-4.7
26	17.09	0.000	-0.000	4.2	0.0	0.0	-4.3
27	16.90	0.000	-0.000	3.4	0.0	0.0	-3.9
28	16.73	0.000	-0.000	2.8	0.0	0.0	-3.5
29	16.56	0.000	-0.000	2.2	0.0	0.0	-3.1
30	16.32	0.000	-0.000	1.5	0.0	0.0	-2.7
31	16.08	0.000	-0.000	0.9	0.0	0.0	-2.2
32	15.84	0.000	-0.000	0.4	0.0	0.0	-1.8
33	15.60	0.000	-0.000	0.0	0.0	0.0	-1.4
34	15.36	0.000	-0.000	0.0	-0.3	0.0	-1.1
35	15.12	0.000	-0.000	0.0	-0.5	0.0	-0.8
36	14.88	0.000	-0.000	0.0	-0.6	0.0	-0.6
37	14.64	0.000	-0.000	0.0	-0.7	0.0	-0.4
38	14.40	0.000	-0.000	0.0	-0.8	0.0	-0.2
39	14.16	0.000	-0.000	0.0	-0.8	0.0	-0.1
40	13.92	0.000	-0.000	0.0	-0.8	0.1	0.0
41	13.68	0.000	-0.000	0.0	-0.8	0.1	0.0
42	13.44	0.000	-0.000	0.0	-0.8	0.2	0.0
43	13.20	0.000	-0.000	0.0	-0.7	0.2	0.0
44	12.96	0.000	-0.000	0.0	-0.7	0.3	0.0
45	12.72	0.000	-0.000	0.0	-0.6	0.3	0.0

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum m	Displacement minimum m	Bending moment maximum kN.m	Bending moment minimum kN.m	Shear force maximum kN	Shear force minimum kN
46	12.48	0.000	0.000	0.0	-0.5	0.3	0.0
47	12.24	0.000	0.000	0.0	-0.4	0.3	0.0
48	12.00	0.000	0.000	0.0	-0.4	0.3	0.0
49	11.76	0.000	0.000	0.0	-0.3	0.2	0.0
50	11.52	0.000	0.000	0.0	-0.3	0.2	0.0
51	11.28	0.000	0.000	0.0	-0.2	0.2	0.0
52	11.04	0.000	0.000	0.0	-0.2	0.2	0.0
53	10.80	0.000	0.000	0.0	-0.1	0.2	0.0
54	10.56	0.000	0.000	0.0	-0.1	0.1	0.0
55	10.32	0.000	0.000	0.0	-0.1	0.1	0.0
56	10.16	0.000	0.000	0.0	-0.0	0.1	0.0
57	10.00	0.000	0.000	0.0	-0.0	0.1	0.0
58	9.80	0.000	0.000	0.0	-0.0	0.1	0.0
59	9.60	0.000	0.000	0.0	-0.0	0.1	0.0
60	9.36	0.000	0.000	0.0	0.0	0.0	0.0
61	9.12	0.000	0.000	0.0	0.0	0.0	0.0
62	8.88	0.000	0.000	0.0	0.0	0.0	0.0
63	8.64	0.000	0.000	0.0	0.0	0.0	0.0
64	8.40	0.000	0.000	0.0	0.0	0.0	0.0
65	8.16	0.000	0.000	0.0	0.0	0.0	0.0
66	7.92	0.000	0.000	0.0	0.0	0.0	-0.0
67	7.68	0.000	0.000	0.0	0.0	0.0	-0.0
68	7.44	0.000	0.000	0.0	0.0	0.0	-0.0
69	7.20	0.000	0.000	0.0	0.0	0.0	-0.0
70	6.96	0.000	0.000	0.0	0.0	0.0	-0.0
71	6.72	0.000	0.000	0.0	0.0	0.0	-0.0
72	6.48	0.000	-0.000	0.0	0.0	0.0	-0.0
73	6.24	0.000	-0.000	0.0	0.0	0.0	-0.0
74	6.00	0.000	-0.000	0.0	0.0	0.0	-0.0
75	5.76	0.000	-0.000	0.0	0.0	0.0	-0.0
76	5.52	0.000	-0.000	0.0	0.0	0.0	-0.0
77	5.28	0.000	-0.000	0.0	0.0	0.0	-0.0
78	5.04	0.000	-0.000	0.0	0.0	0.0	-0.0
79	4.80	0.000	-0.000	0.0	0.0	0.0	-0.0
80	4.56	0.000	-0.000	0.0	0.0	0.0	-0.0
81	4.32	0.000	-0.000	0.0	0.0	0.0	-0.0
82	4.08	0.000	-0.000	0.0	0.0	0.0	-0.0
83	3.84	0.000	-0.000	0.0	0.0	0.0	-0.0
84	3.60	0.000	-0.000	0.0	0.0	0.0	-0.0
85	3.36	0.000	-0.000	0.0	-0.0	0.0	-0.0
86	3.12	0.000	-0.000	0.0	-0.0	0.0	-0.0
87	2.88	0.000	-0.000	0.0	-0.0	0.0	-0.0
88	2.64	0.000	-0.000	0.0	-0.0	0.0	-0.0
89	2.40	0.000	-0.000	0.0	-0.0	0.0	-0.0
90	2.16	0.000	-0.000	0.0	-0.0	0.0	-0.0
91	1.92	0.000	-0.000	0.0	-0.0	0.0	0.0
92	1.68	0.000	-0.000	0.0	-0.0	0.0	0.0
93	1.44	0.000	-0.000	0.0	-0.0	0.0	0.0
94	1.20	0.000	-0.000	0.0	-0.0	0.0	0.0
95	0.96	0.000	-0.000	0.0	-0.0	0.0	0.0
96	0.72	0.000	-0.000	0.0	-0.0	0.0	0.0
97	0.48	0.000	0.000	0.0	-0.0	0.0	0.0
98	0.24	0.000	0.000	0.0	-0.0	0.0	0.0
99	0.00	0.000	0.000	0.0	-0.0	0.0	0.0
100	-0.24	0.000	0.000	0.0	-0.0	0.0	0.0
101	-0.48	0.000	0.000	0.0	-0.0	0.0	0.0
102	-0.72	0.000	0.000	0.0	-0.0	0.0	0.0
103	-0.96	0.000	0.000	0.0	-0.0	0.0	0.0
104	-1.20	0.000	0.000	0.0	-0.0	0.0	0.0

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m	kN.m	kN	kN
105	-1.35	0.000	0.000	0.0	-0.0	0.0	0.0
106	-1.50	0.000	0.000	0.0	0.0	0.0	-0.0

Maximum and minimum bending moment and shear force at each stage

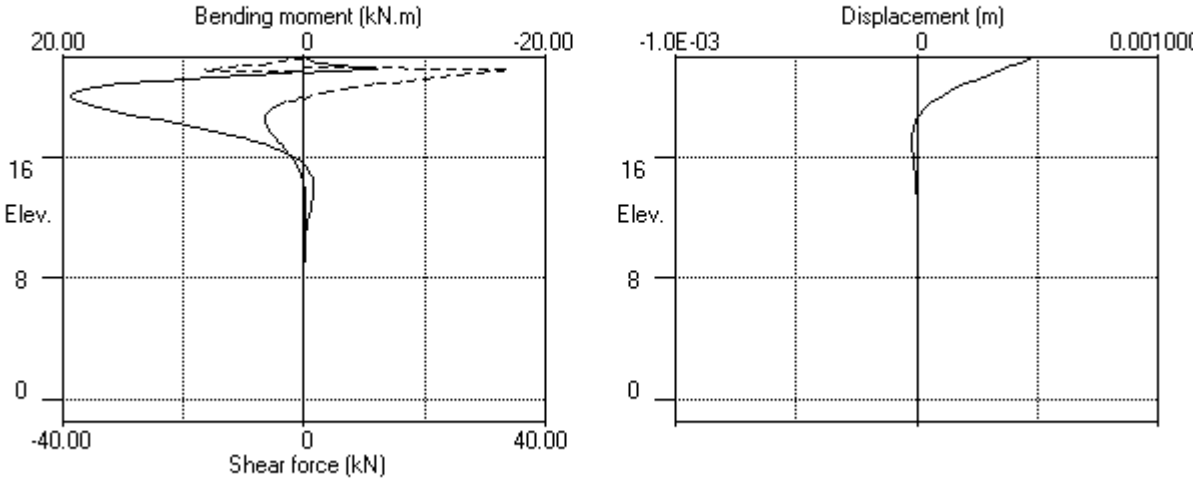
Stage no.	Bending moment maximum	Bending moment elev.	Bending moment minimum	Bending moment elev.	Shear force maximum	Shear force elev.	Shear force minimum	Shear force elev.
	kN.m		kN.m		kN		kN	
1	19.3	20.16	-6.1	21.86	33.5	21.86	-16.5	21.86

Maximum and minimum displacement at each stage

Stage no.	Displacement maximum	Displacement elev.	Displacement minimum	Displacement elev.	Stage description
	m		m		
1	0.000	22.66	-0.000	17.09	Apply load no.1 at elev. 21.86

Units: kN,m

Bending moment, shear force, displacement envelopes

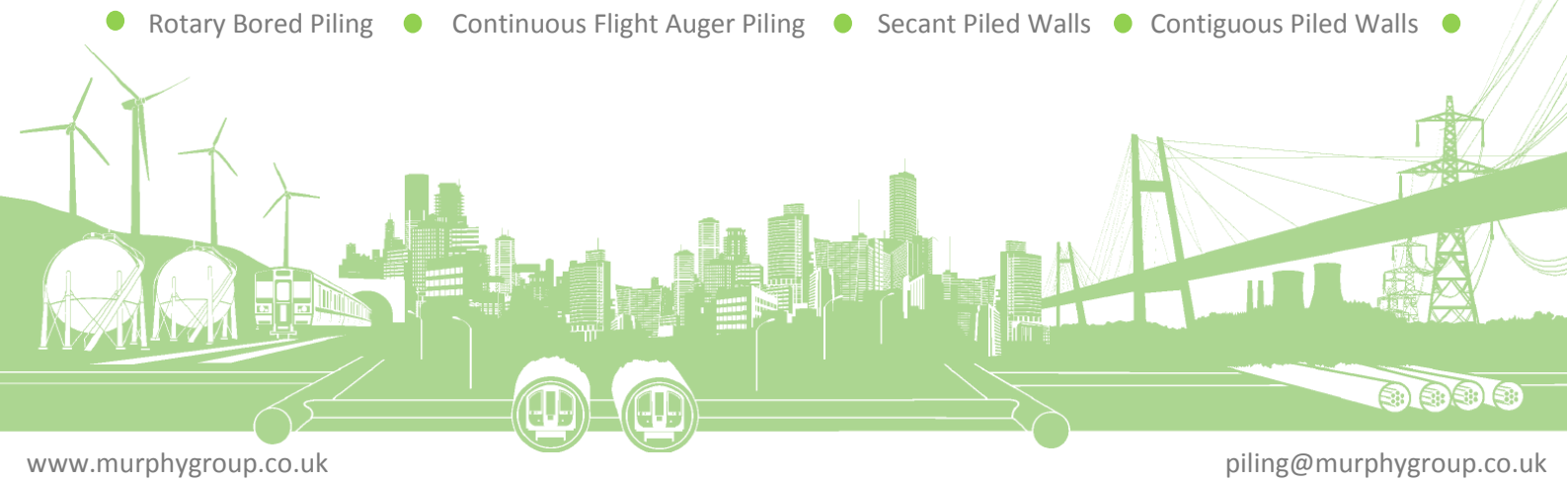


J.M.PILING

Celebrating 50 years

Bearing Pile Schedule Rev01

Rotary Bored Piling • Continuous Flight Auger Piling • Secant Piled Walls • Contiguous Piled Walls •



Camley Street Schedule rev01

pile nr	pile dia	Compression	Tension	HZ	COL	PPL	Length	Reinforcement	tens
P001	600	1850	0	50	21.285	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P002	600	1900	0	50	21.285	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P003	600	1850	0	50	21.285	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P004	600	1150	0	50	21.285	27.4	21.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P005	600	1150	0	50	21.285	27.4	21.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P006	400	650	0	50	21.285	27.4	20.2	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P007	400	650	0	50	21.285	27.4	20.2	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P008	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P009	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P010	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P011	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P012	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P013	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P014	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P015	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P016	600	1600	0	50	19.735	27.4	27.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P017	600	1600	0	50	19.735	27.4	27.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P018	600	1600	0	50	19.735	27.4	27.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P019	600	1600	0	50	19.735	27.4	27.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P020	600	1500	0	50	19.735	27.4	26.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P021	600	1400	0	50	19.735	27.4	25.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P022	600	1550	0	50	21.285	27.4	25.8	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P023	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P024	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P025	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P026	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P027	600	1500	0	50	19.735	27.4	26.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P028	600	1400	0	50	19.735	27.4	25.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P029	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P030	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P031	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P032	600	1550	0	50	19.735	27.4	26.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P033	600	1500	0	50	19.735	27.4	26.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P034	600	1500	0	50	19.735	27.4	26.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P035	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P036	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P037	600	1800	0	50	21.285	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P038	600	1800	0	50	21.285	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P039	600	1800	0	50	21.285	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P040	600	1800	0	50	21.285	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P041	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P042	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P043	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P044	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P045	400	700	0	50	21.285	27.4	21.2	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	

P046	400	800	0	50	21.285	27.4	23	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P047	400	700	0	50	21.285	27.4	21.2	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P048	400	850	0	50	21.285	27.4	23.8	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P049	600	1650	0	50	21.285	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P050	600	1650	0	50	21.285	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P051	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P052	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P053	600	1450	0	50	21.285	27.4	24.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P054	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P055	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P056	600	1550	0	50	21.285	27.4	25.8	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P057	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P058	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P059	600	1700	0	50	21.285	27.4	27.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P060	600	1650	0	50	21.285	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P061	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P062	600	1650	0	50	21.285	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P063	600	1600	0	50	21.285	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P064	750	2450	0	50	21.985	27.4	29.3	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P065	600	1750	0	50	21.985	27.4	27.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P066	600	1600	0	50	21.985	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P067	600	1200	0	50	22.935	27.4	21.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P068	400	150	0	50	22.935	27.4	10.7	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P069	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P070	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P071	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P072	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P073	600	1250	0	50	22.935	27.4	22.4	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P074	600	2050	0	50	22.135	27.4	30.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P075	600	2050	0	50	22.135	27.4	30.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P076	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P077	600	2000	0	50	22.135	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P078	750	2050	0	50	21.985	27.4	26.1	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P079	750	2100	0	50	21.985	27.4	26.5	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P080	400	100	0	50	22.935	27.4	10.7	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P081	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P082	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P083	600	1800	0	50	21.985	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P084	600	1800	0	50	21.985	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P085	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P086	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P087	750	2400	0	50	21.985	27.4	28.9	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P088	600	2000	0	50	21.985	27.4	30.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P089	600	2050	0	50	21.985	27.4	30.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P090	400	700	0	50	22.785	27.4	20.8	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P091	750	2400	0	50	21.985	27.4	28.9	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P092	750	1900	0	50	22.785	27.4	25.1	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P093	400	100	0	50	21.985	27.4	10.7	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	

P094	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P095	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P096	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P097	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P098	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P099	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P100	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P101	600	1800	0	50	21.985	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P102	600	1950	0	50	20.435	27.4	30.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P103	600	1950	0	50	220.435	27.4	30.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P104	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P105	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P106	600	1800	0	50	21.985	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P107	600	1750	0	50	21.985	27.4	27.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P108	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P109	600	1900	0	50	20.435	27.4	30.1	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P110	600	1850	0	50	20.435	27.4	29.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P111	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P112	600	1800	0	50	21.985	27.4	28.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P113	600	1350	0	50	21.985	27.4	23.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P114	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P115	600	1600	0	50	21.985	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P116	600	1600	0	50	21.985	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P117	600	1400	0	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P118	600	1250	0	50	21.285	27.4	22.8	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P119	600	1400	-150	50	21.285	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P120	600	1500	0	50	21.285	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P121	600	1350	-380	50	21.985	27.4	23.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	1H20mm X 9M
P122	600	1200	0	50	22.785	27.4	21.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P123	400	950	-600	50	21.985	27.4	25.3	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 6M	1H32mmX12.5M + 1H32mm X 18.5M
P124	600	1300	0	50	21.985	27.4	23.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P125	600	1400	0	50	21.985	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P126	600	1450	0	50	21.985	27.4	24.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P127	600	1450	0	50	21.985	27.4	24.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P128	600	1550	0	50	21.985	27.4	25.8	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P129	600	1600	0	50	21.985	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P130	600	1700	0	50	21.985	27.4	27.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P131	600	1650	0	50	21.985	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P132	600	1300	0	50	21.985	27.4	23.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P133	600	1500	0	50	21.985	27.4	25.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P134	600	1650	0	50	21.985	27.4	26.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P135	600	1850	0	50	21.985	27.4	28.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P136	600	1400	0	50	21.985	27.4	24.3	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P137	600	1600	0	50	21.985	27.4	26.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P138	600	1750	0	50	21.985	27.4	27.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P139	600	1900	0	50	21.985	27.4	29.2	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P140	400	1000	0	50	21.985	27.4	26	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P141	400	1050	0	50	21.985	27.4	26.7	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	

P142	400	400	0	50	22.785	27.4	14.1	5H12mm / H8mm @ 200mm Pitch X 250mm OD X 5M	
P143	750	2450	0	50	21.985	27.4	29.3	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P144	600	1550	0	50	21.985	27.4	25.8	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P145	600	1350	-380	50	21.985	27.4	23.9	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	1H20mm X 9M
P146	750	1700	0	50	21.985	27.4	23.5	6H20mm / H8mm @ 200mm X 600mm OD X 7M	
P147	600	1750	0	50	21.985	27.4	27.7	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P148	600	1520	0	50	21.66	27.4	25.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	
P149	600	1520	0	50	21.66	27.4	25.6	6H16mm / H8mm @ 200mm Pitch X 450mm OD X 8M	

rev01 - piles 148-149 added. COL's updated to suit new drawings.

Contract:
102 Camley Street, Camden

Title:
Bearing Pile Schedule

By: KH
Checked By: PG
Date: 14/12/2015

Schedule No: PPI0TBC/BP/01
Drawing No: S105 Rev P2

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Celebrating 50 years

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(Should we not hear from yourselves within 10 working days, we shall consider the above to be acceptable)