

Lpile Analyses Calculations Retaining Wall 4W18 - Tangent Shaft Wall

Columbus, Ohio

Submitted: 7/11/2022



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LPile for Windows, Version 2019-11.001

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method
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Files Used for Analysis

Path to file locations:
\\2015\2015370\FRA\96053\structures\wall_4W18\design\

Name of input data file:
Wall 4W18 Tangent Shaft Design.lp11

Name of output report file:
Wall 4W18 Tangent Shaft Design.lp11

Name of plot output file:
Wall 4W18 Tangent Shaft Design.lp11

Name of runtime message file:
Wall 4W18 Tangent Shaft Design.lp11

Date and Time of Analysis

Date: September 29, 2019 Time: 14:51:31

Problem Title

FRA-70-14.05 - Wall 4W18

Job Number:

Client:

Engineer: MOJ

Description: Tangent Shaft Design

Program Options and Settings

Computational Options:
- Use Load and Resistance Factors (LRFD) in computations
Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed	=	500
- Deflection tolerance for convergence	=	1.0000E-05 in
- Maximum allowable deflection	=	100.0000 in
- Number of pile increments	=	100

Loading Type and Number of Cycles of Loading:

- Static loading specified
- Analysis uses p-y modification factors for p-y curves
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Input of moment resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined	=	1
Total length of pile	=	55.000 ft
Depth of ground surface below top of pile	=	26.5000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	42.0000
2	55.000	42.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile	
Length of section	= 55.000000 ft
Shaft Diameter	= 42.000000 in
Shear capacity of section	= 0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle	= 0.000 degrees
	= 0.000 radians
Pile Batter Angle	= 0.000 degrees
	= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	26.500000	ft
Distance from top of pile to bottom of layer	=	52.300000	ft
Effective unit weight at top of layer	=	78.000000	pcf
Effective unit weight at bottom of layer	=	78.000000	pcf
Friction angle at top of layer	=	42.000000	deg.
Friction angle at bottom of layer	=	42.000000	deg.
Subgrade k at top of layer	=	195.000000	pci
Subgrade k at bottom of layer	=	195.000000	pci

Layer 2 is stiff clay with water-induced erosion

Distance from top of pile to top of layer	=	52.300000	ft
Distance from top of pile to bottom of layer	=	57.300000	ft
Effective unit weight at top of layer	=	78.000000	pcf
Effective unit weight at bottom of layer	=	78.000000	pcf
Undrained cohesion at top of layer	=	8000.	psf
Undrained cohesion at bottom of layer	=	8000.	psf
Epsilon-50 at top of layer	=	0.003300	
Epsilon-50 at bottom of layer	=	0.003300	
Subgrade k at top of layer	=	2665.	pci
Subgrade k at bottom of layer	=	2665.	pci

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	57.300000	ft
Distance from top of pile to bottom of layer	=	62.300000	ft
Effective unit weight at top of layer	=	78.000000	pcf
Effective unit weight at bottom of layer	=	78.000000	pcf
Friction angle at top of layer	=	39.000000	deg.
Friction angle at bottom of layer	=	39.000000	deg.
Subgrade k at top of layer	=	140.000000	pci
Subgrade k at bottom of layer	=	140.000000	pci

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	62.300000	ft
Distance from top of pile to bottom of layer	=	75.300000	ft
Effective unit weight at top of layer	=	78.000000	pcf
Effective unit weight at bottom of layer	=	78.000000	pcf
Friction angle at top of layer	=	42.000000	deg.
Friction angle at bottom of layer	=	42.000000	deg.
Subgrade k at top of layer	=	195.000000	pci
Subgrade k at bottom of layer	=	195.000000	pci

(Depth of the lowest soil layer extends 20.300 ft below the pile tip)

Summary of Input Soil Properties

Layer Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	E50 or krm	kpy pci
1	Sand	26.5000	78.0000	--	42.0000	--	195.0000
	(Reese, et al.)	52.3000	78.0000	--	42.0000	--	195.0000
2	Stiff Clay	52.3000	78.0000	8000.	--	0.00330	2665.
	with Free Water	57.3000	78.0000	8000.	--	0.00330	2665.
3	Sand	57.3000	78.0000	--	39.0000	--	140.0000
	(Reese, et al.)	62.3000	78.0000	--	39.0000	--	140.0000
4	Sand	62.3000	78.0000	--	42.0000	--	195.0000
	(Reese, et al.)	75.3000	78.0000	--	42.0000	--	195.0000

p-y Modification Factors for Group Action

Distribution of p-y modifiers with depth defined using 2 points

Point No.	Depth X ft	p-mult	y-mult
1	26.500	0.6400	1.0000
2	55.000	0.6400	1.0000

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Unfactored Loading Groups for LRFD Analysis

Number of Loading Groups = 1

Load Group	Load Type	Horiz. Force lbs	Moment in-lbs	Axial Force lbs	Number of Dist. Lds.
1	Horiz. Soil (Hs)	0.00	0.00	0.00	2

Number of Distributed Loading Points Input for Load Group 1 = 2

Point	Depth in	Distributed Load lb/inch
1	0.00	0.00
2	318.00	347.80

Totals of Unfactored Loads by Load Type for LRFD Analyses:

Number of Defined Unfactored Load Cases = 1

This table presents the sum of unfactored pile-head loads for each load type.

Load Type	Horiz. Force lbs	Moment in-lbs	Axial Force lbs	Number of Loads
Dead Loads (DL)	0.00	0.00	0.00	0
Live Loads (LL)	0.00	0.00	0.00	0
Earthquake (EQ)	0.00	0.00	0.00	0
Impact Load (IM)	0.00	0.00	0.00	0
Wind Loads (W)	0.00	0.00	0.00	0
Water Loads (HW)	0.00	0.00	0.00	0
Ice Loads (Ice)	0.00	0.00	0.00	0
Horiz. Soil (Hs)	0.00	0.00	0.00	1
Live Roof (Lr)	0.00	0.00	0.00	0
Rain Loads (Rn)	0.00	0.00	0.00	0
Snow Loads (Sn)	0.00	0.00	0.00	0
Temperature (Tm)	0.00	0.00	0.00	0
Special (Sp)	0.00	0.00	0.00	0

Load and Resistance Factors by Load Combinations for LRFD Analyses

Number of Factored Load Combinations = 3

Summary of Load and Resistance Factors:

No.	DL	LL	EQ	IM	Wind	Watr	Ice	Soil	Roof	Rain	Snow	Temp	Spec	M Rf	V Rf	Name
1	1.00	--	--	--	--	--	--	1.00	--	--	--	--	--	1.00	1.00	Soil Only

2	1.00	1.00	--	--	--	--	--	1.00	--	--	--	--	--	1.00	1.00	Service 1
3	1.00	1.75	--	--	--	--	--	1.50	--	--	--	--	--	0.90	0.90	Strength 1

 Computed Factored Loads for LRFD Analyses

Factored Load Combination No. 1

Load Combination Name = Soil Only

Structural Resistance Factor for Flexure = 1.000
 Structural Resistance Factor for Shear = 1.000

Factored Load = 1.00*DL + 1.00*Hs

Factored Horizontal Force = 0.00 lbs
 Factored Vertical Force = 0.00 lbs
 Factored Moment = 0.00 in-lbs

Factored Load Combination No. 2

Load Combination Name = Service 1

Structural Resistance Factor for Flexure = 1.000
 Structural Resistance Factor for Shear = 1.000

Factored Load = 1.00*DL + 1.00*LL + 1.00*Hs

Factored Horizontal Force = 0.00 lbs
 Factored Vertical Force = 0.00 lbs
 Factored Moment = 0.00 in-lbs

Factored Load Combination No. 3

Load Combination Name = Strength 1

Structural Resistance Factor for Flexure = 0.900
 Structural Resistance Factor for Shear = 0.900

Factored Load = 1.00*DL + 1.75*LL + 1.50*Hs

Factored Horizontal Force = 0.00 lbs
 Factored Vertical Force = 0.00 lbs
 Factored Moment = 0.00 in-lbs

Totals of Factored Loads by Load Combination:

Load Combination Number	Factored Horiz. Force lbs	Factored Moment in-lbs	Factored Vert. Force lbs	Load Combination Name
1	0.00	0.00	0.00	Soil Only
2	0.00	0.00	0.00	Service 1

3 0.00 0.00 0.00 Strength 1

Sorted Values of Axial Thrust Forces Sorted for LRFD Computations:

Number of Unique Axial Thrust Values = 1

Number	Factored Axial Thrust
1	0.000

 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from LRFD load combinations

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	55.000000 ft
Shaft Diameter	=	42.000000 in
Concrete Cover Thickness (to edge of long. rebar)	=	3.625000 in
Number of Reinforcing Bars	=	20 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	1385. sq. in.
Total Area of Reinforcing Steel	=	31.200000 sq. in.
Area Ratio of Steel Reinforcement	=	2.25 percent
Edge-to-Edge Bar Spacing	=	3.805525 in
Maximum Concrete Aggregate Size	=	0.750000 in
Ratio of Bar Spacing to Aggregate Size	=	5.07
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	6476.424 kips
Tensile Load for Cracking of Concrete	=	-667.629 kips
Nominal Axial Tensile Capacity	=	-1872.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.410000	1.560000	16.670000	0.000000
2	1.410000	1.560000	15.854112	5.151313
3	1.410000	1.560000	13.486313	9.798380
4	1.410000	1.560000	9.798380	13.486313
5	1.410000	1.560000	5.151313	15.854112
6	1.410000	1.560000	0.000000	16.670000
7	1.410000	1.560000	-5.151313	15.854112
8	1.410000	1.560000	-9.798380	13.486313
9	1.410000	1.560000	-13.486313	9.798380
10	1.410000	1.560000	-15.854112	5.151313
11	1.410000	1.560000	-16.670000	0.000000
12	1.410000	1.560000	-15.854112	-5.151313
13	1.410000	1.560000	-13.486313	-9.798380
14	1.410000	1.560000	-9.798380	-13.486313
15	1.410000	1.560000	-5.151313	-15.854112
16	1.410000	1.560000	0.000000	-16.670000
17	1.410000	1.560000	5.151313	-15.854112
18	1.410000	1.560000	9.798380	-13.486313
19	1.410000	1.560000	13.486313	-9.798380
20	1.410000	1.560000	15.854112	-5.151313

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 3.806 inches
between bars 7 and 8.

Ratio of bar spacing to maximum aggregate size = 5.07

Concrete Properties:

Compressive Strength of Concrete = 4000. psi
Modulus of Elasticity of Concrete = 3604997. psi
Modulus of Rupture of Concrete = -474.341649 psi
Compression Strain at Peak Stress = 0.001886
Tensile Strain at Fracture of Concrete = -0.0001154
Maximum Coarse Aggregate Size = 0.750000 in

Number of Axial Thrust Force Values Determined from LRFD Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	0.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 0.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
6.25000E-07	471.1550111	753848018.	20.9999628	0.00001312	-0.00001313	0.0549188	-0.3159194	
0.0000125	940.4505153	752360412.	20.9999627	0.00002625	-0.00002625	0.1094580	-0.6318388	
0.0000188	1408.	750872807.	20.9999625	0.00003937	-0.00003938	0.1636176	-0.9477583	
0.0000250	1873.	749385201.	20.9999624	0.00005250	-0.00005250	0.2173976	-1.2636777	
0.0000313	2337.	747897596.	20.9999623	0.00006562	-0.00006563	0.2707979	-1.5795971	
0.0000375	2799.	746409991.	20.9999622	0.00007875	-0.00007875	0.3238186	-1.8955166	
0.0000438	3259.	744922385.	20.9999621	0.00009187	-0.00009188	0.3764597	-2.2114360	
0.0000500	3717.	743434780.	20.9999619	0.0001050	-0.0001050	0.4287212	-2.5273555	
0.0000563	3717.	660830915.	12.6919818	0.00007139	-0.0001649	0.2922356	-4.1985142	C
0.0000625	3717.	594747824.	12.6960049	0.00007935	-0.0001831	0.3241243	-4.6642866	C
0.0000688	3717.	540679840.	12.7000367	0.00008731	-0.0002014	0.3558958	-5.1299114	C
0.0000750	3717.	495623186.	12.7040774	0.00009528	-0.0002197	0.3875500	-5.5953882	C
0.0000813	3717.	457498326.	12.7081269	0.0001033	-0.0002380	0.4190867	-6.0607163	C
0.0000875	3717.	424819874.	12.7121854	0.0001112	-0.0002563	0.4505057	-6.5258954	C
0.0000938	3717.	396498549.	12.7162528	0.0001192	-0.0002745	0.4818067	-6.9909250	C
0.0001000	3717.	371717390.	12.7203292	0.0001272	-0.0002928	0.5129896	-7.4558045	C
0.0001063	3717.	349851661.	12.7244147	0.0001352	-0.0003111	0.5440542	-7.9205334	C
0.0001125	3717.	330415458.	12.7285092	0.0001432	-0.0003293	0.5750002	-8.3851113	C
0.0001188	3717.	313025170.	12.7326129	0.0001512	-0.0003476	0.6058275	-8.8495377	C
0.0001250	3717.	297373912.	12.7367257	0.0001592	-0.0003658	0.6365357	-9.3138119	C
0.0001313	3717.	283213249.	12.7408477	0.0001672	-0.0003840	0.6671249	-9.7779336	C
0.0001375	3717.	270339920.	12.7449790	0.0001752	-0.0004023	0.6975946	-10.2419021	C
0.0001438	3717.	258586010.	12.7491196	0.0001833	-0.0004205	0.7279447	-10.7057170	C
0.0001500	3717.	247811593.	12.7532694	0.0001913	-0.0004387	0.7581750	-11.1693778	C
0.0001563	3789.	242503412.	12.7574287	0.0001993	-0.0004569	0.7882853	-11.6328838	C
0.0001625	3939.	242420469.	12.7615974	0.0002074	-0.0004751	0.8182753	-12.0962347	C
0.0001688	4089.	242337365.	12.7657755	0.0002154	-0.0004933	0.8481449	-12.5594298	C
0.0001750	4239.	242254098.	12.7699631	0.0002235	-0.0005115	0.8778938	-13.0224687	C
0.0001813	4389.	242170668.	12.7741603	0.0002315	-0.0005297	0.9075219	-13.4853507	C
0.0001875	4539.	242087074.	12.7783670	0.0002396	-0.0005479	0.9370288	-13.9480754	C
0.0001938	4689.	242003315.	12.7825834	0.0002477	-0.0005661	0.9664143	-14.4106422	C

0.00002000	4838.	241919390.	12.7868095	0.0002557	-0.0005843	0.9956783	-14.8730505	C
0.00002063	4988.	241835299.	12.7910453	0.0002638	-0.0006024	1.0248206	-15.3352998	C
0.00002125	5137.	241751042.	12.7952908	0.0002719	-0.0006206	1.0538408	-15.7973895	C
0.00002188	5286.	241666616.	12.7995462	0.0002800	-0.0006388	1.0827388	-16.2593191	C
0.00002250	5436.	241582023.	12.8038115	0.0002881	-0.0006569	1.1115144	-16.7210880	C
0.00002313	5585.	241497260.	12.8080866	0.0002962	-0.0006751	1.1401672	-17.1826957	C
0.00002375	5734.	241412355.	12.8123010	0.0003043	-0.0006932	1.1686912	-17.6441901	C
0.00002438	5882.	241327302.	12.8164679	0.0003124	-0.0007113	1.1970868	-18.1055655	C
0.00002563	6180.	241156695.	12.8248302	0.0003286	-0.0007476	1.2535061	-19.0278420	C
0.00002688	6476.	240985422.	12.8332306	0.0003449	-0.0007839	1.3094281	-19.9494824	C
0.00002813	6773.	240813474.	12.8416695	0.0003612	-0.0008201	1.3648509	-20.8704822	C
0.00002938	7069.	240640844.	12.8501474	0.0003775	-0.0008563	1.4197727	-21.7908371	C
0.00003063	7364.	240467526.	12.8586646	0.0003938	-0.0008925	1.4741916	-22.7105425	C
0.00003188	7659.	240293515.	12.8672214	0.0004101	-0.0009286	1.5281057	-23.6295937	C
0.00003313	7954.	240118804.	12.8758183	0.0004265	-0.0009647	1.5815132	-24.5479861	C
0.00003438	8248.	239943387.	12.8844556	0.0004429	-0.0010008	1.6344119	-25.4657149	C
0.00003563	8542.	239767257.	12.8931337	0.0004593	-0.0010369	1.6868001	-26.3827754	C
0.00003688	8835.	239590409.	12.9018530	0.0004758	-0.0010730	1.7386757	-27.2991626	C
0.00003813	9128.	239412836.	12.9106139	0.0004922	-0.0011090	1.7900367	-28.2148717	C
0.00003938	9420.	239234531.	12.9194169	0.0005087	-0.0011450	1.8408811	-29.1298976	C
0.00004063	9712.	239055488.	12.9282623	0.0005252	-0.0011810	1.8912069	-30.0442353	C
0.00004188	10003.	238875699.	12.9371506	0.0005417	-0.0012170	1.9410120	-30.9578796	C
0.00004313	10294.	238695159.	12.9460821	0.0005583	-0.0012530	1.9902943	-31.8708254	C
0.00004438	10584.	238513859.	12.9550574	0.0005749	-0.0012889	2.0390517	-32.7830675	C
0.00004563	10874.	238331794.	12.9640768	0.0005915	-0.0013248	2.0872821	-33.6946004	C
0.00004688	11163.	238148955.	12.9731409	0.0006081	-0.0013606	2.1349834	-34.6054187	C
0.00004813	11452.	237965335.	12.9822500	0.0006248	-0.0013965	2.1821532	-35.5155170	C
0.00004938	11740.	237780928.	12.9914046	0.0006415	-0.0014323	2.2287896	-36.4248897	C
0.00005063	12028.	237595725.	13.0006052	0.0006582	-0.0014681	2.2748901	-37.3335312	C
0.00005188	12316.	237409720.	13.0098523	0.0006749	-0.0015039	2.3204526	-38.2414358	C
0.00005313	12602.	237222903.	13.0191463	0.0006916	-0.0015396	2.3654747	-39.1485976	C
0.00005438	12889.	237035268.	13.0284878	0.0007084	-0.0015753	2.4099542	-40.0550108	C
0.00005563	13175.	236846806.	13.0378772	0.0007252	-0.0016110	2.4538888	-40.9606694	C
0.00005688	13460.	236657510.	13.0473151	0.0007421	-0.0016467	2.4972760	-41.8655674	C
0.00005813	13745.	236467370.	13.0568019	0.0007589	-0.0016823	2.5401135	-42.7696986	C
0.00005938	14029.	236276396.	13.0663382	0.0007758	-0.0017179	2.5823991	-43.6730551	C
0.00006063	14313.	236084546.	13.0759245	0.0007927	-0.0017535	2.6241299	-44.5756339	C
0.00006188	14596.	235891827.	13.0855613	0.0008097	-0.0017891	2.6653036	-45.4774270	C
0.00006313	14878.	235698232.	13.0952493	0.0008266	-0.0018246	2.7059178	-46.3784279	C
0.00006438	15161.	235503751.	13.1049889	0.0008436	-0.0018601	2.7459698	-47.2786299	C
0.00006563	15442.	235308374.	13.1147807	0.0008607	-0.0018956	2.7854572	-48.1780265	C
0.00006688	15723.	235112093.	13.1246254	0.0008777	-0.0019310	2.8243773	-49.0766107	C
0.00006813	16004.	234914899.	13.1345234	0.0008948	-0.0019665	2.8627275	-49.9743758	C
0.00006938	16283.	234716781.	13.1444754	0.0009119	-0.0020019	2.9005051	-50.8713146	C
0.00007063	16563.	234517731.	13.1544820	0.0009290	-0.0020372	2.9377075	-51.7674201	C
0.00007188	16842.	234317738.	13.1645438	0.0009462	-0.0020725	2.9743318	-52.6626851	C
0.00007313	17120.	234116793.	13.1746614	0.0009634	-0.0021079	3.0103753	-53.5571022	C
0.00007438	17397.	233914885.	13.1848355	0.0009806	-0.0021431	3.0458353	-54.4506640	C
0.00007563	18502.	233097418.	13.2261097	0.0010498	-0.0022839	3.1817816	-58.0162048	C
0.00008438	19587.	232144334.	13.2646874	0.0011192	-0.0024245	3.3076120	-60.0000000	CY
0.00008938	20475.	229095557.	13.2611747	0.0011852	-0.0025685	3.4174915	-60.0000000	CY
0.00009438	21171.	224324650.	13.2201585	0.0012477	-0.0027161	3.5126056	-60.0000000	CY
0.00009938	21752.	218883141.	13.1593865	0.0013077	-0.0028660	3.5960548	-60.0000000	CY
0.0001044	22207.	212765605.	13.0786564	0.0013651	-0.0030187	3.6683964	-60.0000000	CY
0.0001094	22655.	207134920.	13.0072217	0.0014227	-0.0031711	3.7338350	-60.0000000	CY
0.0001144	23086.	201843126.	12.9413055	0.0014802	-0.0033236	3.7920079	-60.0000000	CY
0.0001194	23410.	196106890.	12.8573150	0.0015348	-0.0034789	3.8406411	-60.0000000	CY
0.0001244	23673.	190332606.	12.7655894	0.0015877	-0.0036360	3.8814955	-60.0000000	CY
0.0001294	23929.	184961729.	12.6805477	0.0016405	-0.0037932	3.9162781	-60.0000000	CY
0.0001344	24183.	179969237.	12.6038445	0.0016936	-0.0039501	3.9451674	-60.0000000	CY
0.0001394	24434.	175313925.	12.5346305	0.0017470	-0.0041067	3.9680712	-60.0000000	CY
0.0001444	24682.	170960276.	12.4721765	0.0018007	-0.0042631	3.9848936	-60.0000000	CY
0.0001494	24907.	166742496.	12.4099965	0.0018537	-0.0044200	3.9954101	-60.0000000	CY
0.0001544	25074.	162421648.	12.3352647	0.0019043	-0.0045795	3.9997658	-60.0000000	CY
0.0001594	25203.	158138173.	12.2555081	0.0019532	-0.0047405	3.9987417	-60.0000000	CY
0.0001644	25326.	154071507.	12.1806363	0.0020022	-0.0049016	3.9963893	-60.0000000	CY
0.0001694	25446.	150231969.	12.1117514	0.0020514	-0.0050623	3.9998191	-60.0000000	CY
0.0001744	25563.	146599970.	12.0483633	0.0021009	-0.0052228	3.9980480	-60.0000000	CY
0.0001794	25679.	143160276.	11.9898297	0.0021507	-0.0053831	3.9997731	-60.0000000	CY
0.0001844	25792.	139890210.	11.9340277	0.0022003	-0.0055434	3.9986694	-60.0000000	CY
0.0001894	25903.	136782308.	11.8812509	0.0022500	-0.0057037	3.9981746	-60.0000000	CY
0.0001944	26012.	133824391.	11.8325601	0.0023000	-0.0058638	3.9985973	-60.0000000	CY
0.0001994	26120.	131008308.	11.7873201	0.0023501	-0.0060237	3.9989748	-60.0000000	CY
0.0002044	26226.	128321015.	11.7455854	0.0024005	-0.0061832	3.9978520	-60.0000000	CY
0.0002094	26329.	125750560.	11.7062069	0.0024510	-0.0063428	3.9999468	-60.0000000	CY
0.0002144	26423.	123258091.	11.6671122	0.0025011	-0.0065026	3.9958966	-60.0000000	CY
0.0002194	26505.	120819967.	11.6260629	0.0025505	-0.0066633	3.9991905	-60.0000000	CY
0.0002244	26577.	118448534.	11.5844157	0.0025993	-0.0068245	3.9980558	-60.0000000	CY
0.0002294	26629.	116091986.	11.5375359	0.0026464	-0.0069873	3.9961240	-60.0000000	CY

0.0002344	26676.	113816467.	11.4897283	0.0026929	-0.0071508	3.9989825	-60.0000000 CY
0.0002394	26716.	111608045.	11.4418395	0.0027389	-0.0073149	3.9999957	-60.0000000 CY
0.0002444	26756.	109486703.	11.3966792	0.0027851	-0.0074787	3.9934614	-60.0000000 CY
0.0002494	26795.	107449077.	11.3537239	0.0028313	-0.0076424	3.9971959	-60.0000000 CY
0.0002544	26834.	105490348.	11.3128222	0.0028777	-0.0078061	3.9993777	-60.0000000 CY
0.0002594	26873.	103605746.	11.2738985	0.0029242	-0.0079696	3.9990625	-60.0000000 CY
0.0002644	26911.	101789948.	11.2370740	0.0029708	-0.0081329	3.9925577	-60.0000000 CY
0.0002694	26948.	100040663.	11.2019121	0.0030175	-0.0082962	3.9963858	-60.0000000 CYT
0.0002744	26986.	98353334.	11.1685006	0.0030644	-0.0084594	3.9988555	60.0000000 CYT
0.0003044	27192.	89337608.	10.9921099	0.0033457	-0.0094380	3.9998718	60.0000000 CYT
0.0003344	27370.	81853917.	10.8679061	0.0036340	-0.0104098	3.9999319	60.0000000 CYT
0.0003644	27431.	75281218.	10.8253145	0.0039445	-0.0113593	3.9999315	60.0000000 CYT

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	0.000	26934.305	0.00300000

Note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	26934.	0.0000	17507.	233833575.
1	0.75	26934.	0.0000	20201.	230038390.
1	0.90	26934.	0.0000	24241.	178902683.

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	26.5000	0.00	N.A.	No	0.00	2705227.
2	52.3000	475.4262	No	No	2705227.	72917.
3	57.3000	30.8000	No	No	2778145.	0.00
4	62.3000	35.8000	No	No	0.00	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Distributed Lateral Loads for LRFD:

Sums of Distributed Lateral Load Per Unit Length due to Horizontal Soil Pressures

Depth in	Distributed Load lb/in
0.00	1.80
6.60	7.22
13.20	14.44
19.80	21.66
26.40	28.87
33.00	36.09
39.60	43.31
46.20	50.53
52.80	57.75
59.40	64.97
66.00	72.18
72.60	79.40
79.20	86.62
85.80	93.84
92.40	101.06
99.00	108.28
105.60	115.50
112.20	122.71
118.80	129.93
125.40	137.15
132.00	144.37
138.60	151.59
145.20	158.81
151.80	166.03
158.40	173.24
165.00	180.46
171.60	187.68
178.20	194.90
184.80	202.12
191.40	209.34
198.00	216.55
204.60	223.77
211.20	230.99
217.80	238.21
224.40	245.43
231.00	252.65
237.60	259.87
244.20	267.08
250.80	274.30
257.40	281.52
264.00	288.74
270.60	295.96
277.20	303.18
283.80	310.40
290.40	317.61
297.00	324.83
303.60	332.05
310.20	339.27
316.80	235.46

Computed Values of Pile Loading and Deflection
for Lateral Loading for LRFD Load Case Number 1

Load Case No. 1: Soil Only

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	2.9433	3.54E-04	5.82E-07	-0.00752	0.00	7.54E+11	0.00	0.00	1.8046
0.5500	2.8936	39.3048	29.7763	-0.00752	0.00	7.54E+11	0.00	0.00	7.2185
1.1000	2.8440	393.0469	101.2393	-0.00752	0.00	7.54E+11	0.00	0.00	14.4370
1.6500	2.7943	1376.	220.3444	-0.00752	0.00	7.54E+11	0.00	0.00	21.6555
2.2000	2.7447	3302.	387.0916	-0.00752	0.00	7.54E+11	0.00	0.00	28.8740

2.7500	2.6950	6485.	601.4807	-0.00752	0.00	7.54E+11	0.00	0.00	36.0925
3.3000	2.6454	11241.	863.5119	-0.00752	0.00	7.54E+11	0.00	0.00	43.3109
3.8500	2.5957	17884.	1173.	-0.00752	0.00	7.54E+11	0.00	0.00	50.5294
4.4000	2.5461	26727.	1531.	-0.00752	0.00	7.54E+11	0.00	0.00	57.7479
4.9500	2.4964	38086.	1935.	-0.00752	0.00	7.54E+11	0.00	0.00	64.9664
5.5000	2.4468	52275.	2388.	-0.00752	0.00	7.54E+11	0.00	0.00	72.1849
6.0500	2.3971	69609.	2888.	-0.00752	0.00	7.54E+11	0.00	0.00	79.4034
6.6000	2.3475	90401.	3436.	-0.00752	0.00	7.54E+11	0.00	0.00	86.6219
7.1500	2.2978	114966.	4032.	-0.00752	0.00	7.54E+11	0.00	0.00	93.8404
7.7000	2.2482	143619.	4675.	-0.00752	0.00	7.54E+11	0.00	0.00	101.0589
8.2500	2.1986	176675.	5366.	-0.00752	0.00	7.54E+11	0.00	0.00	108.2774
8.8000	2.1490	214446.	6104.	-0.00752	0.00	7.54E+11	0.00	0.00	115.4958
9.3500	2.0994	257249.	6890.	-0.00751	0.00	7.54E+11	0.00	0.00	122.7143
9.9000	2.0498	305397.	7724.	-0.00751	0.00	7.54E+11	0.00	0.00	129.9328
10.4500	2.0002	359205.	8605.	-0.00751	0.00	7.54E+11	0.00	0.00	137.1513
11.0000	1.9507	418988.	9534.	-0.00751	0.00	7.54E+11	0.00	0.00	144.3698
11.5500	1.9011	485059.	10511.	-0.00750	0.00	7.54E+11	0.00	0.00	151.5883
12.1000	1.8516	557733.	11535.	-0.00750	0.00	7.53E+11	0.00	0.00	158.8068
12.6500	1.8022	637325.	12607.	-0.00749	0.00	7.53E+11	0.00	0.00	166.0253
13.2000	1.7528	724149.	13727.	-0.00749	0.00	7.53E+11	0.00	0.00	173.2438
13.7500	1.7034	818520.	14894.	-0.00748	0.00	7.53E+11	0.00	0.00	180.4623
14.3000	1.6540	920751.	16109.	-0.00747	0.00	7.52E+11	0.00	0.00	187.6808
14.8500	1.6047	1031158.	17371.	-0.00746	0.00	7.52E+11	0.00	0.00	194.8992
15.4000	1.5555	1150055.	18682.	-0.00745	0.00	7.52E+11	0.00	0.00	202.1177
15.9500	1.5064	1277756.	20039.	-0.00744	0.00	7.51E+11	0.00	0.00	209.3362
16.5000	1.4573	1414575.	21445.	-0.00743	0.00	7.51E+11	0.00	0.00	216.5547
17.0500	1.4083	1560828.	22898.	-0.00742	0.00	7.50E+11	0.00	0.00	223.7732
17.6000	1.3594	1716828.	24399.	-0.00740	0.00	7.50E+11	0.00	0.00	230.9917
18.1500	1.3106	1882891.	25947.	-0.00739	0.00	7.49E+11	0.00	0.00	238.2102
18.7000	1.2619	2059329.	27543.	-0.00737	0.00	7.49E+11	0.00	0.00	245.4287
19.2500	1.2133	2246459.	29187.	-0.00735	0.00	7.48E+11	0.00	0.00	252.6472
19.8000	1.1648	2444594.	30878.	-0.00733	0.00	7.48E+11	0.00	0.00	259.8657
20.3500	1.1165	2654049.	32617.	-0.00731	0.00	7.47E+11	0.00	0.00	267.0842
20.9000	1.0684	2875137.	34404.	-0.00728	0.00	7.46E+11	0.00	0.00	274.3026
21.4500	1.0204	3108175.	36238.	-0.00726	0.00	7.45E+11	0.00	0.00	281.5211
22.0000	0.9726	3353475.	38120.	-0.00723	0.00	7.45E+11	0.00	0.00	288.7396
22.5500	0.9250	3611353.	40049.	-0.00720	0.00	7.44E+11	0.00	0.00	295.9581
23.1000	0.8776	3882123.	42026.	-0.00713	0.00	2.42E+11	0.00	0.00	303.1766
23.6500	0.8309	4166100.	44051.	-0.00702	0.00	2.42E+11	0.00	0.00	310.3951
24.2000	0.7849	4463597.	46123.	-0.00690	0.00	2.42E+11	0.00	0.00	317.6136
24.7500	0.7398	4774929.	48244.	-0.00678	0.00	2.42E+11	0.00	0.00	324.8321
25.3000	0.6955	5100411.	50411.	-0.00664	0.00	2.42E+11	0.00	0.00	332.0506
25.8500	0.6521	5440357.	52627.	-0.00650	0.00	2.42E+11	0.00	0.00	339.2691
26.4000	0.6098	5795082.	54523.	-0.00634	0.00	2.41E+11	0.00	0.00	346.4876
26.9500	0.5684	6160064.	55066.	-0.00618	0.00	2.41E+11	-71.0168	824.5983	0.00
27.5000	0.5282	6521951.	54270.	-0.00601	0.00	2.41E+11	-170.1622	2126.	0.00
28.0500	0.4891	6876427.	52792.	-0.00582	0.00	2.41E+11	-277.8179	3749.	0.00
28.6000	0.4513	7218801.	50587.	-0.00563	0.00	2.41E+11	-390.2820	5707.	0.00
29.1500	0.4148	7544174.	47637.	-0.00543	0.00	2.40E+11	-503.6537	8013.	0.00
29.7000	0.3797	7847608.	43952.	-0.00521	0.00	2.40E+11	-613.1172	10657.	0.00
30.2500	0.3460	8124334.	39564.	-0.00500	0.00	2.40E+11	-716.3284	13664.	0.00
30.8000	0.3138	8369858.	34524.	-0.00477	0.00	2.40E+11	-811.1249	17062.	0.00
31.3500	0.2830	8580048.	28901.	-0.00454	0.00	2.40E+11	-892.7445	20817.	0.00
31.9000	0.2539	8751351.	22782.	-0.00430	0.00	2.40E+11	-961.5589	24996.	0.00
32.4500	0.2263	8880769.	16235.	-0.00405	0.00	2.40E+11	-1022.	29815.	0.00
33.0000	0.2004	8965648.	9344.	-0.00381	0.00	2.40E+11	-1066.	35100.	0.00
33.5500	0.1761	9004107.	2228.	-0.00356	0.00	2.39E+11	-1091.	40883.	0.00
34.1000	0.1534	8995058.	-5032.	-0.00331	0.00	2.39E+11	-1109.	47735.	0.00
34.6500	0.1323	8937684.	-12354.	-0.00307	0.00	2.40E+11	-1109.	55321.	0.00
35.2000	0.1129	8831990.	-19610.	-0.00282	0.00	2.40E+11	-1090.	63688.	0.00
35.7500	0.09511	8678829.	-26677.	-0.00258	0.00	2.40E+11	-1052.	72984.	0.00
36.3000	0.07888	8479854.	-33423.	-0.00234	0.00	2.40E+11	-992.3591	83036.	0.00
36.8500	0.06418	8237651.	-39706.	-0.00211	0.00	2.40E+11	-911.7377	93758.	0.00
37.4000	0.05098	7955733.	-45448.	-0.00189	0.00	2.40E+11	-828.1227	107208.	0.00
37.9500	0.03923	7637742.	-50400.	-0.00168	0.00	2.40E+11	-672.6144	113174.	0.00
38.5000	0.02885	7290452.	-54331.	-0.00147	0.00	2.41E+11	-518.5297	118610.	0.00
39.0500	0.01980	6920575.	-57270.	-0.00128	0.00	2.41E+11	-372.1760	124046.	0.00
39.6000	0.01200	6534486.	-59275.	-0.00109	0.00	2.41E+11	-235.4796	129482.	0.00
40.1500	0.00539	6138139.	-60416.	-9.19E-04	0.00	2.41E+11	-110.0844	134919.	0.00
40.7000	-1.24E-04	5736997.	-60770.	-7.56E-04	0.00	2.41E+11	2.6367	140355.	0.00
41.2500	-0.00460	5335970.	-60427.	-6.05E-04	0.00	2.42E+11	101.5666	145791.	0.00
41.8000	-0.00811	4939367.	-59478.	-4.65E-04	0.00	2.42E+11	185.8261	151228.	0.00
42.3500	-0.01073	4550859.	-58024.	-3.35E-04	0.00	2.42E+11	254.7549	156664.	0.00
42.9000	-0.01254	4173448.	-56167.	-2.16E-04	0.00	2.42E+11	307.8916	162100.	0.00
43.4500	-0.01359	3809448.	-54013.	-1.08E-04	0.00	2.42E+11	344.9530	167537.	0.00
44.0000	-0.01396	3460475.	-51668.	-4.06E-05	0.00	7.44E+11	365.8150	172973.	0.00
44.5500	-0.01412	3127437.	-49200.	-1.14E-05	0.00	7.45E+11	381.8097	178409.	0.00
45.1000	-0.01411	2811030.	-46644.	1.49E-05	0.00	7.46E+11	392.9869	183845.	0.00
45.6500	-0.01393	2511742.	-44029.	3.84E-05	0.00	7.47E+11	399.4320	189282.	0.00

46.2000	-0.01360	2229853.	-41386.	5.94E-05	0.00	7.48E+11	401.2601	194718.	0.00
46.7500	-0.01314	1965443.	-38747.	7.79E-05	0.00	7.49E+11	398.6127	200154.	0.00
47.3000	-0.01257	1718396.	-36139.	9.41E-05	0.00	7.50E+11	391.6525	205591.	0.00
47.8500	-0.01190	1488410.	-33591.	1.08E-04	0.00	7.51E+11	380.5596	211027.	0.00
48.4000	-0.01115	1275001.	-31128.	1.20E-04	0.00	7.51E+11	365.5285	216463.	0.00
48.9500	-0.01031	1077515.	-28778.	1.31E-04	0.00	7.52E+11	346.7641	221899.	0.00
49.5000	-0.00942	895133.	-26563.	1.39E-04	0.00	7.52E+11	324.4801	227336.	0.00
50.0500	-0.00847	726886.	-24506.	1.46E-04	0.00	7.53E+11	298.8963	232772.	0.00
50.6000	-0.00749	571659.	-22627.	1.52E-04	0.00	7.53E+11	270.2371	238208.	0.00
51.1500	-0.00647	428203.	-20948.	1.56E-04	0.00	7.54E+11	238.7309	243645.	0.00
51.7000	-0.00542	295147.	-19485.	1.60E-04	0.00	7.54E+11	204.6097	249081.	0.00
52.2500	-0.00436	171003.	-18255.	1.62E-04	0.00	7.54E+11	168.1089	254517.	0.00
52.8000	-0.00329	54182.	-13526.	1.63E-04	0.00	7.54E+11	1265.	2539662.	0.00
53.3500	-0.00221	-7541.	-5928.	1.63E-04	0.00	7.54E+11	1038.	3096088.	0.00
53.9000	-0.00114	-24069.	-400.1988	1.63E-04	0.00	7.54E+11	637.5624	3701288.	0.00
54.4500	-6.34E-05	-12824.	1823.	1.63E-04	0.00	7.54E+11	36.2522	3775584.	0.00
55.0000	0.00101	0.00	0.00	1.63E-04	0.00	7.54E+11	-588.7945	1924940.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection	=	2.94329821 inches
Computed slope at pile head	=	-0.00752365 radians
Maximum bending moment	=	9004107. inch-lbs
Maximum shear force	=	-60770. lbs
Depth of maximum bending moment	=	33.55000000 feet below pile head
Depth of maximum shear force	=	40.70000000 feet below pile head
Number of iterations	=	39
Number of zero deflection points	=	2

Distributed Lateral Loads for LRFD:

Sums of Distributed Lateral Load Per Unit Length due to Horizontal Soil Pressures

Depth in	Distributed Load lb/in
0.00	1.80
6.60	7.22
13.20	14.44
19.80	21.66
26.40	28.87
33.00	36.09
39.60	43.31
46.20	50.53
52.80	57.75
59.40	64.97
66.00	72.18
72.60	79.40
79.20	86.62
85.80	93.84
92.40	101.06
99.00	108.28
105.60	115.50
112.20	122.71
118.80	129.93
125.40	137.15
132.00	144.37
138.60	151.59
145.20	158.81
151.80	166.03
158.40	173.24
165.00	180.46
171.60	187.68
178.20	194.90
184.80	202.12
191.40	209.34
198.00	216.55

204.60	223.77
211.20	230.99
217.80	238.21
224.40	245.43
231.00	252.65
237.60	259.87
244.20	267.08
250.80	274.30
257.40	281.52
264.00	288.74
270.60	295.96
277.20	303.18
283.80	310.40
290.40	317.61
297.00	324.83
303.60	332.05
310.20	339.27
316.80	235.46

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for LRFD Load Case Number 2

Load Case No. 2: Service 1

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	2.9433	3.54E-04	5.82E-07	-0.00752	0.00	7.54E+11	0.00	0.00	1.8046
0.5500	2.8936	39.3048	29.7763	-0.00752	0.00	7.54E+11	0.00	0.00	7.2185
1.1000	2.8440	393.0469	101.2393	-0.00752	0.00	7.54E+11	0.00	0.00	14.4370
1.6500	2.7943	1376.	220.3444	-0.00752	0.00	7.54E+11	0.00	0.00	21.6555
2.2000	2.7447	3302.	387.0916	-0.00752	0.00	7.54E+11	0.00	0.00	28.8740
2.7500	2.6950	6485.	601.4807	-0.00752	0.00	7.54E+11	0.00	0.00	36.0925
3.3000	2.6454	11241.	863.5119	-0.00752	0.00	7.54E+11	0.00	0.00	43.3109
3.8500	2.5957	17884.	1173.	-0.00752	0.00	7.54E+11	0.00	0.00	50.5294
4.4000	2.5461	26727.	1531.	-0.00752	0.00	7.54E+11	0.00	0.00	57.7479
4.9500	2.4964	38086.	1935.	-0.00752	0.00	7.54E+11	0.00	0.00	64.9664
5.5000	2.4468	52275.	2388.	-0.00752	0.00	7.54E+11	0.00	0.00	72.1849
6.0500	2.3971	69609.	2888.	-0.00752	0.00	7.54E+11	0.00	0.00	79.4034
6.6000	2.3475	90401.	3436.	-0.00752	0.00	7.54E+11	0.00	0.00	86.6219
7.1500	2.2978	114966.	4032.	-0.00752	0.00	7.54E+11	0.00	0.00	93.8404
7.7000	2.2482	143619.	4675.	-0.00752	0.00	7.54E+11	0.00	0.00	101.0589
8.2500	2.1986	176675.	5366.	-0.00752	0.00	7.54E+11	0.00	0.00	108.2774
8.8000	2.1490	214446.	6104.	-0.00752	0.00	7.54E+11	0.00	0.00	115.4958
9.3500	2.0994	257249.	6890.	-0.00751	0.00	7.54E+11	0.00	0.00	122.7143
9.9000	2.0498	305397.	7724.	-0.00751	0.00	7.54E+11	0.00	0.00	129.9328
10.4500	2.0002	359205.	8605.	-0.00751	0.00	7.54E+11	0.00	0.00	137.1513
11.0000	1.9507	418988.	9534.	-0.00751	0.00	7.54E+11	0.00	0.00	144.3698
11.5500	1.9011	485059.	10511.	-0.00750	0.00	7.54E+11	0.00	0.00	151.5883
12.1000	1.8516	557733.	11535.	-0.00750	0.00	7.53E+11	0.00	0.00	158.8068
12.6500	1.8022	637325.	12607.	-0.00749	0.00	7.53E+11	0.00	0.00	166.0253
13.2000	1.7528	724149.	13727.	-0.00749	0.00	7.53E+11	0.00	0.00	173.2438
13.7500	1.7034	818520.	14894.	-0.00748	0.00	7.53E+11	0.00	0.00	180.4623
14.3000	1.6540	920751.	16109.	-0.00747	0.00	7.52E+11	0.00	0.00	187.6808
14.8500	1.6047	1031158.	17371.	-0.00746	0.00	7.52E+11	0.00	0.00	194.8992
15.4000	1.5555	1150055.	18682.	-0.00745	0.00	7.52E+11	0.00	0.00	202.1177
15.9500	1.5064	1277756.	20039.	-0.00744	0.00	7.51E+11	0.00	0.00	209.3362
16.5000	1.4573	1414575.	21445.	-0.00743	0.00	7.51E+11	0.00	0.00	216.5547
17.0500	1.4083	1560828.	22898.	-0.00742	0.00	7.50E+11	0.00	0.00	223.7732
17.6000	1.3594	1716828.	24399.	-0.00740	0.00	7.50E+11	0.00	0.00	230.9917
18.1500	1.3106	1882891.	25947.	-0.00739	0.00	7.49E+11	0.00	0.00	238.2102
18.7000	1.2619	2059329.	27543.	-0.00737	0.00	7.49E+11	0.00	0.00	245.4287
19.2500	1.2133	2246459.	29187.	-0.00735	0.00	7.48E+11	0.00	0.00	252.6472
19.8000	1.1648	2444594.	30878.	-0.00733	0.00	7.48E+11	0.00	0.00	259.8657
20.3500	1.1165	2654049.	32617.	-0.00731	0.00	7.47E+11	0.00	0.00	267.0842
20.9000	1.0684	2875137.	34404.	-0.00728	0.00	7.46E+11	0.00	0.00	274.3026
21.4500	1.0204	3108175.	36238.	-0.00726	0.00	7.45E+11	0.00	0.00	281.5211
22.0000	0.9726	3353475.	38120.	-0.00723	0.00	7.45E+11	0.00	0.00	288.7396
22.5500	0.9250	3611353.	40049.	-0.00720	0.00	7.44E+11	0.00	0.00	295.9581

23.1000	0.8776	3882123.	42026.	-0.00713	0.00	2.42E+11	0.00	0.00	303.1766
23.6500	0.8309	4166100.	44051.	-0.00702	0.00	2.42E+11	0.00	0.00	310.3951
24.2000	0.7849	4463597.	46123.	-0.00690	0.00	2.42E+11	0.00	0.00	317.6136
24.7500	0.7398	4774929.	48244.	-0.00678	0.00	2.42E+11	0.00	0.00	324.8321
25.3000	0.6955	5100411.	50411.	-0.00664	0.00	2.42E+11	0.00	0.00	332.0506
25.8500	0.6521	5440357.	52627.	-0.00650	0.00	2.42E+11	0.00	0.00	339.2691
26.4000	0.6098	5795082.	54523.	-0.00634	0.00	2.41E+11	0.00	0.00	235.4585
26.9500	0.5684	6160064.	55066.	-0.00618	0.00	2.41E+11	-71.0168	824.5983	0.00
27.5000	0.5282	6521951.	54270.	-0.00601	0.00	2.41E+11	-170.1622	2126.	0.00
28.0500	0.4891	6876427.	52792.	-0.00582	0.00	2.41E+11	-277.8179	3749.	0.00
28.6000	0.4513	7218801.	50587.	-0.00563	0.00	2.41E+11	-390.2820	5707.	0.00
29.1500	0.4148	7544174.	47637.	-0.00543	0.00	2.40E+11	-503.6537	8013.	0.00
29.7000	0.3797	7847608.	43952.	-0.00521	0.00	2.40E+11	-613.1172	10657.	0.00
30.2500	0.3460	8124334.	39564.	-0.00500	0.00	2.40E+11	-716.3284	13664.	0.00
30.8000	0.3138	8369858.	34524.	-0.00477	0.00	2.40E+11	-811.1249	17062.	0.00
31.3500	0.2830	8580048.	28901.	-0.00454	0.00	2.40E+11	-892.7445	20817.	0.00
31.9000	0.2539	8751351.	22782.	-0.00430	0.00	2.40E+11	-961.5589	24996.	0.00
32.4500	0.2263	8880769.	16235.	-0.00405	0.00	2.40E+11	-1022.	29815.	0.00
33.0000	0.2004	8965648.	9344.	-0.00381	0.00	2.40E+11	-1066.	35100.	0.00
33.5500	0.1761	9004107.	2228.	-0.00356	0.00	2.39E+11	-1091.	40883.	0.00
34.1000	0.1534	8995058.	-5032.	-0.00331	0.00	2.39E+11	-1109.	47735.	0.00
34.6500	0.1323	8937684.	-12354.	-0.00307	0.00	2.40E+11	-1109.	55321.	0.00
35.2000	0.1129	8831990.	-19610.	-0.00282	0.00	2.40E+11	-1090.	63688.	0.00
35.7500	0.09511	8678829.	-26677.	-0.00258	0.00	2.40E+11	-1052.	72984.	0.00
36.3000	0.07888	8479854.	-33423.	-0.00234	0.00	2.40E+11	-992.3591	83036.	0.00
36.8500	0.06418	8237651.	-39706.	-0.00211	0.00	2.40E+11	-911.7377	93758.	0.00
37.4000	0.05098	7955733.	-45448.	-0.00189	0.00	2.40E+11	-828.1227	107208.	0.00
37.9500	0.03923	7637742.	-50400.	-0.00168	0.00	2.40E+11	-672.6144	113174.	0.00
38.5000	0.02885	7290452.	-54331.	-0.00147	0.00	2.41E+11	-518.5297	118610.	0.00
39.0500	0.01980	6920575.	-57270.	-0.00128	0.00	2.41E+11	-372.1760	124046.	0.00
39.6000	0.01200	6534486.	-59275.	-0.00109	0.00	2.41E+11	-235.4796	129482.	0.00
40.1500	0.00539	6138139.	-60416.	-9.19E-04	0.00	2.41E+11	-110.0844	134919.	0.00
40.7000	-1.24E-04	5736997.	-60770.	-7.56E-04	0.00	2.41E+11	2.6367	140355.	0.00
41.2500	-0.00460	5335970.	-60427.	-6.05E-04	0.00	2.42E+11	101.5666	145791.	0.00
41.8000	-0.00811	4939367.	-59478.	-4.65E-04	0.00	2.42E+11	185.8261	151228.	0.00
42.3500	-0.01073	4550859.	-58024.	-3.35E-04	0.00	2.42E+11	254.7549	156664.	0.00
42.9000	-0.01254	4173448.	-56167.	-2.16E-04	0.00	2.42E+11	307.8916	162100.	0.00
43.4500	-0.01359	3809448.	-54013.	-1.08E-04	0.00	2.42E+11	344.9530	167537.	0.00
44.0000	-0.01396	3460475.	-51668.	-4.06E-05	0.00	7.44E+11	365.8150	172973.	0.00
44.5500	-0.01412	3127437.	-49200.	-1.14E-05	0.00	7.45E+11	381.8097	178409.	0.00
45.1000	-0.01411	2811030.	-46644.	1.49E-05	0.00	7.46E+11	392.9869	183845.	0.00
45.6500	-0.01393	2511742.	-44029.	3.84E-05	0.00	7.47E+11	399.4320	189282.	0.00
46.2000	-0.01360	2229853.	-41386.	5.94E-05	0.00	7.48E+11	401.2601	194718.	0.00
46.7500	-0.01314	1965443.	-38747.	7.79E-05	0.00	7.49E+11	398.6127	200154.	0.00
47.3000	-0.01257	1718396.	-36139.	9.41E-05	0.00	7.50E+11	391.6525	205591.	0.00
47.8500	-0.01190	1488410.	-33591.	1.08E-04	0.00	7.51E+11	380.5596	211027.	0.00
48.4000	-0.01115	1275001.	-31128.	1.20E-04	0.00	7.51E+11	365.5285	216463.	0.00
48.9500	-0.01031	1077515.	-28778.	1.31E-04	0.00	7.52E+11	346.7641	221899.	0.00
49.5000	-0.00942	895133.	-26563.	1.39E-04	0.00	7.52E+11	324.4801	227336.	0.00
50.0500	-0.00847	726886.	-24506.	1.46E-04	0.00	7.53E+11	298.8963	232772.	0.00
50.6000	-0.00749	571659.	-22627.	1.52E-04	0.00	7.53E+11	270.2371	238208.	0.00
51.1500	-0.00647	428203.	-20948.	1.56E-04	0.00	7.54E+11	238.7309	243645.	0.00
51.7000	-0.00542	295147.	-19485.	1.60E-04	0.00	7.54E+11	204.6097	249081.	0.00
52.2500	-0.00436	171003.	-18255.	1.62E-04	0.00	7.54E+11	168.1089	254517.	0.00
52.8000	-0.00329	54182.	-13526.	1.63E-04	0.00	7.54E+11	1265.	2539662.	0.00
53.3500	-0.00221	-7541.	-5928.	1.63E-04	0.00	7.54E+11	1038.	3096088.	0.00
53.9000	-0.00114	-24069.	-400.1988	1.63E-04	0.00	7.54E+11	637.5624	3701288.	0.00
54.4500	-6.34E-05	-12824.	1823.	1.63E-04	0.00	7.54E+11	36.2522	3775584.	0.00
55.0000	0.00101	0.00	0.00	1.63E-04	0.00	7.54E+11	-588.7945	1924940.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

Pile-head deflection = 2.94329821 inches
 Computed slope at pile head = -0.00752365 radians
 Maximum bending moment = 9004107. inch-lbs
 Maximum shear force = -60770. lbs
 Depth of maximum bending moment = 33.55000000 feet below pile head
 Depth of maximum shear force = 40.70000000 feet below pile head
 Number of iterations = 39
 Number of zero deflection points = 2

Distributed Lateral Loads for LRFD:

Sums of Distributed Lateral Load Per Unit Length due to Horizontal Soil Pressures

Depth in	Distributed Load lb/in
0.00	1.80
6.60	7.22
13.20	14.44
19.80	21.66
26.40	28.87
33.00	36.09
39.60	43.31
46.20	50.53
52.80	57.75
59.40	64.97
66.00	72.18
72.60	79.40
79.20	86.62
85.80	93.84
92.40	101.06
99.00	108.28
105.60	115.50
112.20	122.71
118.80	129.93
125.40	137.15
132.00	144.37
138.60	151.59
145.20	158.81
151.80	166.03
158.40	173.24
165.00	180.46
171.60	187.68
178.20	194.90
184.80	202.12
191.40	209.34
198.00	216.55
204.60	223.77
211.20	230.99
217.80	238.21
224.40	245.43
231.00	252.65
237.60	259.87
244.20	267.08
250.80	274.30
257.40	281.52
264.00	288.74
270.60	295.96
277.20	303.18
283.80	310.40
290.40	317.61
297.00	324.83
303.60	332.05
310.20	339.27
316.80	235.46

Computed Values of Pile Loading and Deflection
for Lateral Loading for LRFD Load Case Number 3

Load Case No. 3: Strength 1

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
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0.00	5.2289	-1.23E-04	-1.16E-06	-0.01314	0.00	7.54E+11	0.00	0.00	2.7069
0.5500	5.1422	58.9571	44.6644	-0.01314	0.00	7.54E+11	0.00	0.00	10.8277
1.1000	5.0555	589.5704	151.8590	-0.01314	0.00	7.54E+11	0.00	0.00	21.6555
1.6500	4.9688	2063.	330.5166	-0.01314	0.00	7.54E+11	0.00	0.00	32.4832
2.2000	4.8820	4952.	580.6373	-0.01314	0.00	7.54E+11	0.00	0.00	43.3109
2.7500	4.7953	9728.	902.2211	-0.01314	0.00	7.54E+11	0.00	0.00	54.1387
3.3000	4.7086	16862.	1295.	-0.01314	0.00	7.54E+11	0.00	0.00	64.9664
3.8500	4.6219	26825.	1760.	-0.01314	0.00	7.54E+11	0.00	0.00	75.7942
4.4000	4.5352	40091.	2296.	-0.01314	0.00	7.54E+11	0.00	0.00	86.6219
4.9500	4.4485	57129.	2903.	-0.01314	0.00	7.54E+11	0.00	0.00	97.4496
5.5000	4.3618	78413.	3582.	-0.01314	0.00	7.54E+11	0.00	0.00	108.2774
6.0500	4.2751	104413.	4332.	-0.01314	0.00	7.54E+11	0.00	0.00	119.1051
6.6000	4.1884	135601.	5154.	-0.01313	0.00	7.54E+11	0.00	0.00	129.9328
7.1500	4.1017	172449.	6048.	-0.01313	0.00	7.54E+11	0.00	0.00	140.7606
7.7000	4.0151	215429.	7012.	-0.01313	0.00	7.54E+11	0.00	0.00	151.5883
8.2500	3.9284	265012.	8049.	-0.01313	0.00	7.54E+11	0.00	0.00	162.4160
8.8000	3.8417	321670.	9156.	-0.01313	0.00	7.54E+11	0.00	0.00	173.2438
9.3500	3.7551	385874.	10335.	-0.01312	0.00	7.54E+11	0.00	0.00	184.0715
9.9000	3.6685	458096.	11586.	-0.01312	0.00	7.54E+11	0.00	0.00	194.8992
10.4500	3.5819	538808.	12908.	-0.01312	0.00	7.53E+11	0.00	0.00	205.7270
11.0000	3.4954	628482.	14302.	-0.01311	0.00	7.53E+11	0.00	0.00	216.5547
11.5500	3.4089	727589.	15767.	-0.01310	0.00	7.53E+11	0.00	0.00	227.3825
12.1000	3.3224	836600.	17303.	-0.01310	0.00	7.53E+11	0.00	0.00	238.2102
12.6500	3.2360	955988.	18911.	-0.01309	0.00	7.52E+11	0.00	0.00	249.0379
13.2000	3.1496	1086224.	20590.	-0.01308	0.00	7.52E+11	0.00	0.00	259.8657
13.7500	3.0633	1227780.	22341.	-0.01307	0.00	7.51E+11	0.00	0.00	270.6934
14.3000	2.9771	1381127.	24163.	-0.01306	0.00	7.51E+11	0.00	0.00	281.5211
14.8500	2.8909	1546737.	26057.	-0.01305	0.00	7.50E+11	0.00	0.00	292.3489
15.4000	2.8049	1725082.	28022.	-0.01303	0.00	7.50E+11	0.00	0.00	303.1766
15.9500	2.7189	1916634.	30059.	-0.01302	0.00	7.49E+11	0.00	0.00	314.0043
16.5000	2.6331	2121863.	32167.	-0.01300	0.00	7.49E+11	0.00	0.00	324.8321
17.0500	2.5473	2341242.	34347.	-0.01298	0.00	7.48E+11	0.00	0.00	335.6598
17.6000	2.4617	2575243.	36598.	-0.01296	0.00	7.47E+11	0.00	0.00	346.4875
18.1500	2.3763	2824336.	38921.	-0.01293	0.00	7.46E+11	0.00	0.00	357.3153
18.7000	2.2910	3088994.	41315.	-0.01291	0.00	7.45E+11	0.00	0.00	368.1430
19.2500	2.2059	3369689.	43780.	-0.01288	0.00	7.45E+11	0.00	0.00	378.9708
19.8000	2.1210	3666891.	46317.	-0.01285	0.00	7.44E+11	0.00	0.00	389.7985
20.3500	2.0364	3981073.	48925.	-0.01278	0.00	2.42E+11	0.00	0.00	400.6262
20.9000	1.9524	4312706.	51605.	-0.01266	0.00	2.42E+11	0.00	0.00	411.4540
21.4500	1.8692	4662262.	54357.	-0.01254	0.00	2.42E+11	0.00	0.00	422.2817
22.0000	1.7868	5030213.	57179.	-0.01241	0.00	2.42E+11	0.00	0.00	433.1094
22.5500	1.7054	5417030.	60074.	-0.01227	0.00	2.42E+11	0.00	0.00	443.9372
23.1000	1.6249	5823185.	63039.	-0.01211	0.00	2.41E+11	0.00	0.00	454.7649
23.6500	1.5455	6249150.	66077.	-0.01195	0.00	2.41E+11	0.00	0.00	465.5926
24.2000	1.4672	6695395.	69185.	-0.01177	0.00	2.41E+11	0.00	0.00	476.4204
24.7500	1.3901	7162394.	72365.	-0.01158	0.00	2.41E+11	0.00	0.00	487.2481
25.3000	1.3144	7650617.	75617.	-0.01138	0.00	2.40E+11	0.00	0.00	498.0758
25.8500	1.2400	8160536.	78940.	-0.01116	0.00	2.40E+11	0.00	0.00	508.9036
26.4000	1.1670	8692623.	81785.	-0.01093	0.00	2.40E+11	0.00	0.00	519.7313
26.9500	1.0957	9240095.	82666.	-0.01068	0.00	2.39E+11	-86.2233	519.3646	0.00
27.5000	1.0261	9783811.	81698.	-0.01042	0.00	2.39E+11	-206.9717	1331.	0.00
28.0500	0.9582	1.03E+07	79896.	-0.01014	0.00	2.39E+11	-339.0370	2335.	0.00
28.6000	0.8922	1.08E+07	77202.	-0.00985	0.00	2.38E+11	-477.3006	3531.	0.00
29.1500	0.8282	1.13E+07	73591.	-0.00954	0.00	2.38E+11	-617.2139	4919.	0.00
29.7000	0.7663	1.18E+07	69065.	-0.00922	0.00	2.38E+11	-754.2067	6496.	0.00
30.2500	0.7065	1.22E+07	63652.	-0.00889	0.00	2.37E+11	-885.9133	8276.	0.00
30.8000	0.6490	1.27E+07	57397.	-0.00854	0.00	2.37E+11	-1010.	10268.	0.00
31.3500	0.5938	1.30E+07	50371.	-0.00818	0.00	2.37E+11	-1119.	12442.	0.00
31.9000	0.5410	1.33E+07	42666.	-0.00782	0.00	2.37E+11	-1216.	14832.	0.00
32.4500	0.4906	1.36E+07	34347.	-0.00744	0.00	2.37E+11	-1305.	17555.	0.00
33.0000	0.4428	1.38E+07	25503.	-0.00706	0.00	2.36E+11	-1375.	20496.	0.00
33.5500	0.3974	1.39E+07	16265.	-0.00667	0.00	2.36E+11	-1424.	23655.	0.00
34.1000	0.3547	1.40E+07	6726.	-0.00628	0.00	2.36E+11	-1466.	27280.	0.00
34.6500	0.3145	1.40E+07	-3016.	-0.00589	0.00	2.36E+11	-1486.	31184.	0.00
35.2000	0.2769	1.39E+07	-12813.	-0.00550	0.00	2.36E+11	-1483.	35348.	0.00
35.7500	0.2419	1.38E+07	-22549.	-0.00511	0.00	2.36E+11	-1467.	40034.	0.00
36.3000	0.2094	1.36E+07	-32100.	-0.00473	0.00	2.37E+11	-1427.	44974.	0.00
36.8500	0.1794	1.34E+07	-41298.	-0.00435	0.00	2.37E+11	-1360.	50040.	0.00
37.4000	0.1519	1.31E+07	-50057.	-0.00398	0.00	2.37E+11	-1294.	56216.	0.00
37.9500	0.1268	1.27E+07	-58332.	-0.00362	0.00	2.37E+11	-1214.	63151.	0.00
38.5000	0.1041	1.23E+07	-66001.	-0.00328	0.00	2.37E+11	-1110.	70414.	0.00
39.0500	0.08358	1.19E+07	-72921.	-0.00294	0.00	2.38E+11	-986.4423	77891.	0.00
39.6000	0.06527	1.14E+07	-78964.	-0.00262	0.00	2.38E+11	-844.9027	85436.	0.00
40.1500	0.04903	1.08E+07	-84030.	-0.00231	0.00	2.38E+11	-690.1571	92895.	0.00
40.7000	0.03478	1.03E+07	-88133.	-0.00202	0.00	2.39E+11	-553.2053	104985.	0.00
41.2500	0.02239	9664998.	-91435.	-0.00174	0.00	2.39E+11	-447.3952	131859.	0.00
41.8000	0.01177	9051784.	-93801.	-0.00148	0.00	2.39E+11	-269.6978	151228.	0.00
42.3500	0.00279	8426822.	-94910.	-0.00124	0.00	2.40E+11	-66.3129	156664.	0.00
42.9000	-0.00465	7798972.	-94752.	-0.00102	0.00	2.40E+11	114.2693	162100.	0.00

43.4500	-0.01068	7176099.	-93480.	-8.15E-04	0.00	2.41E+11	271.2175	167537.	0.00
44.0000	-0.01542	6565041.	-91251.	-6.27E-04	0.00	2.41E+11	404.0492	172973.	0.00
44.5500	-0.01896	5971583.	-88304.	-4.56E-04	0.00	2.41E+11	489.0893	170229.	0.00
45.1000	-0.02143	5399430.	-84852.	-3.00E-04	0.00	2.42E+11	557.0486	171558.	0.00
45.6500	-0.02292	4851541.	-80992.	-1.60E-04	0.00	2.42E+11	612.6778	176394.	0.00
46.2000	-0.02354	4330341.	-76803.	-3.50E-05	0.00	2.42E+11	656.4514	184016.	0.00
46.7500	-0.02339	3837736.	-72366.	7.62E-05	0.00	2.42E+11	688.2514	194237.	0.00
47.3000	-0.02254	3375112.	-67778.	1.43E-04	0.00	7.45E+11	702.0714	205591.	0.00
47.8500	-0.02149	2943069.	-63193.	1.71E-04	0.00	7.46E+11	687.2135	211027.	0.00
48.4000	-0.02028	2540961.	-58731.	1.96E-04	0.00	7.47E+11	664.9966	216463.	0.00
48.9500	-0.01891	2167821.	-54438.	2.16E-04	0.00	7.48E+11	635.7939	221899.	0.00
49.5000	-0.01742	1822376.	-50360.	2.34E-04	0.00	7.50E+11	599.9958	227336.	0.00
50.0500	-0.01582	1503067.	-46539.	2.49E-04	0.00	7.50E+11	558.0053	232772.	0.00
50.6000	-0.01414	1208064.	-43014.	2.61E-04	0.00	7.51E+11	510.2346	238208.	0.00
51.1500	-0.01238	935287.	-39821.	2.70E-04	0.00	7.52E+11	457.1032	243645.	0.00
51.7000	-0.01057	682422.	-36996.	2.77E-04	0.00	7.53E+11	399.0375	249081.	0.00
52.2500	-0.00873	446939.	-34569.	2.82E-04	0.00	7.54E+11	336.4696	254517.	0.00
52.8000	-0.00685	226112.	-27433.	2.85E-04	0.00	7.54E+11	1826.	1759159.	0.00
53.3500	-0.00496	84829.	-16277.	2.86E-04	0.00	7.54E+11	1554.	2066693.	0.00
53.9000	-0.00307	11252.	-7113.	2.87E-04	0.00	7.54E+11	1223.	2627217.	0.00
54.4500	-0.00118	-9062.	-852.4417	2.87E-04	0.00	7.54E+11	674.4082	3775584.	0.00
55.0000	7.13E-04	0.00	0.00	2.87E-04	0.00	7.54E+11	-416.0925	1924940.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 3:

Pile-head deflection	=	5.22889660 inches
Computed slope at pile head	=	-0.01313814 radians
Maximum bending moment	=	13995496. inch-lbs
Maximum shear force	=	-94910. lbs
Depth of maximum bending moment	=	34.65000000 feet below pile head
Depth of maximum shear force	=	42.35000000 feet below pile head
Number of iterations	=	37
Number of zero deflection points	=	2

Summary of Pile Responses for LRFD Analyses

Load Case No.	Pile-head Shear lbs	Pile-head Moment in-lbs	Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs	Maximum Shear in Pile lbs	Pile-Head Rotation radians
1	0.000000	0.000000	0.000000	2.94329821	9004107.	-60770.	-0.00752365
2	0.000000	0.000000	0.000000	2.94329821	9004107.	-60770.	-0.00752365
3	0.000000	0.000000	0.000000	5.22889660	13995496.	-94910.	-0.01313814

Maximum pile-head deflection = 5.2288966027 inches
Maximum pile-head rotation = -0.0131381370 radians = -0.752760 deg.

LRFD Performance by Load Case Combination

Load Case No.	Section No.	Factored Resistance	Maximum Moment	Fact. Mom. Fraction	Pass/Fail for LRFD	Maximum Shear	Pile-top Deflection	Pile-top Rotation	Name
No. of Load Case	No. for Moment Combination	Capacity	Developed in Section	Developed in Section	Moment of Section	Developed in Section	Developed	Developed	
		in-lbs	in-lbs			lbs	inches	Radians	
1	1	1.00	26934305.	9004107.	0.334299	Pass	-60770.	2.943298	-0.007524 Soil Only
2	1	1.00	26934305.	9004107.	0.334299	Pass	-60770.	2.943298	-0.007524 Service 1

3	1	0.90	24240874.	13995496.	0.577351	Pass	-94910.	5.228897	-0.013138	Strength 1
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All LRFD load combinations have passed for all pile sections.

The load case and pile section with the greatest level of developed moment capacity:

LRFD Load Case No.	= 3
Pile Section No.	= 1

The analysis ended normally.