

SUBSTRUCTURE

INDEPENDENT DESIGN CHECK

CALCULATIONS

1.0 RCPier

1.1 Pier

1.1.1 Geometry and Input

1.1.2 Output

1.2 Abutment

1.2.1 Geometry and Input

1.2.2 Output

2.0 L-Pile

2.1 Pier

2.1.1 Design Calculations

2.1.2 L-Pile Output

2.2 Abutment

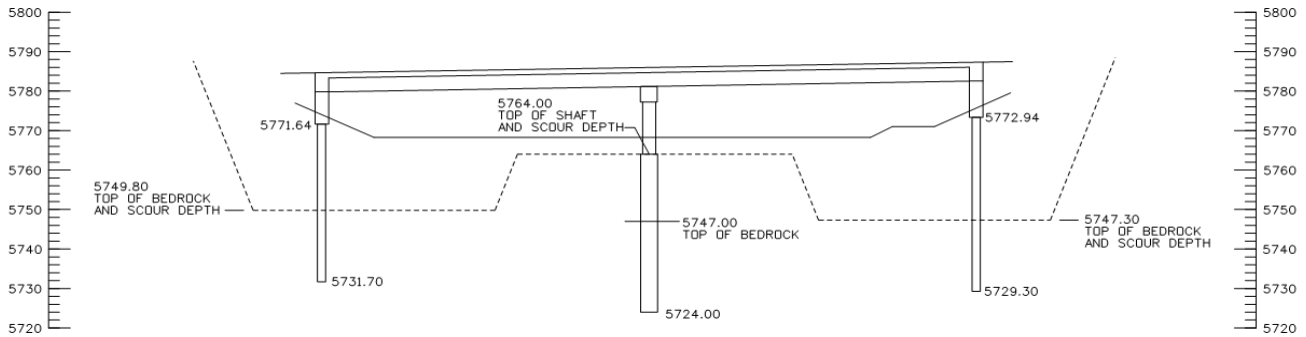
2.2.1 Design Calculations

2.2.2 L-Pile Output

I.1.1 Geometry and Input

GENERAL PIER GEOMETRY:

Pier Cap Length = 96.000 ft
 G1 Brg EI = 5780.05
 G7 Brg EI = 5780.61
 G12 Brg EI = 5779.61
 Bottom of Cap EI = 5775.11
 Min Cap H = 56.64 in
 Max Cap H = 66.00 in
 Top of Shaft EI = 5764.00
 Top of Bedrock = 5747.00



SUPERSTRUCTURE PARAMETERS:

Curb to Curb = 74 ft
 Number of Lanes = 6
 Beam Height = 42 in
 Beam Section Area = 653 in²
 Beam Inertia (I_{xx}) = 152824 in⁴
 Beam Inertia (I_{yy}) = 42248 in⁴
 Beam C.G. (bottom) = 21.17 in
 Railing Height = 45 in
 Depth of Slab = 8 in

Span 1 Length = 75.9 ft
 Span 2 Length = 78.3 ft
 Bridge Width = 94.0 ft

Superstructure Parameters

Bridge Type: Pretensioned Girders

Number of Lanes: 0

Beam Height: 0.00 in

Beam Section Area: 0.00 in²

Beam Inertia (I_{xx}): 0.00 in⁴

Beam Inertia (I_{yy}): 0.00 in⁴

Beam C.G. (Ycg): 0.00 in

Barrier/Railing Height: 0.00 in

Depth of Slab: 0.00 in

Span Number Rear to Current Pier: 0

Curb to Curb Distance: 0.00 ft

Auto compute geometry by girders

Deck offset: Offset between center of the deck and center of the bent cap 0.00 ft
(* if the former is on the right of the latter; - if otherwise)

Span #	Span Length ft	Bridge Width ft
1	0.000	0.000
End Bridge	-	0.000

Buttons: OK, Cancel, Add, Modify, Delete

VARIABLE CAP PARAMETERS:

Cap Length (X) = 96.000 ft
Start EI = 5777.47 ft
End EI = 5777.47 in
Cap Depth (Z) = 48 in
Skew Angle (deg) = 17.5 deg

Dist. From Last (ft)	Height (in)
0.00	56.64
48.00	66.00
48.00	56.64

COLUMN PARAMETER:

Loc. From LT End of Cap (ft)	Bottom Elev (ft)	Diameter (in)
3	5764.00	36
21	5764.00	36
39	5764.00	36
57	5764.00	36
75	5764.00	36
93	5764.00	36

DRILLED SHAFT:

Est. Tip Elev = 5724.00
Top of Bedrock = 5747.00 ft

Diameter = 48 in
h = 40.00 ft
h1 = Bedrock Embed = 23.00 ft
Assume fixity is at top of bedrock.

BEARINGS / GIRDERS:

Eccentricity: First Line (AH) = 0.833 ft
 Second Line (BK) = -0.833 ft

Line	Point	From	Dist
1	1	Left	2.29
1	2	Last	8.10
1	3	Last	8.18
1	4	Last	8.19
1	5	Last	8.20
1	6	Last	8.21
1	7	Last	8.21
1	8	Last	8.22
1	9	Last	8.23
1	10	Last	8.24
1	11	Last	8.25
1	12	Last	8.18
2	1	Left	1.79
2	2	Last	8.08
2	3	Last	8.18
2	4	Last	8.19
2	5	Last	8.19
2	6	Last	8.20
2	7	Last	8.21
2	8	Last	8.22
2	9	Last	8.23
2	10	Last	8.24
2	11	Last	8.25
2	12	Last	8.16



Project No.: 115360-02
 Subject: IDC
 Loads for RCPIER PIER

Calc'd By: JDJ
 Checked By: n/a
 Date: 23-Feb-21
 Sheet No:

PIER REACTIONS:

NOTES: Reactions are per PGSuper
 The totaled loads for Pier 2 are divided by 2 for input into RCPIER (back and ahead bearings)

Girder Line	Location	Girder	Diaphragm	Slab	Haunch	Sidewalk	Traffic Railing	Future Overlay	Pedestrian	User Defined		DC	DW	Pedestrian	
										DC	DW				
A	1	Pier 2	56.94	4.25	66.36	10.81	26.8	11.22	21.61	10.22	1.7	3.85	90	13	6
B	2	Pier 2	56.94	4.81	60.37	10.82	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
C	3	Pier 2	56.94	4.81	60.37	10.82	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
D	4	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
E	5	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
F	6	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
G	7	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
H	8	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
I	9	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
J	10	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
K	11	Pier 2	56.94	4.81	60.37	10.83	26.8	11.22	21.61	10.22	1.7	3.85	87	13	6
L	12	Pier 2	56.94	4.25	66.36	10.81	26.8	11.22	21.61	10.22	1.7	3.85	90	13	6

LIVE LOADS: Autogenerate
 Centrifugal Loads: Radius = 770 ft
 Design Speed = 50 mph (assumed)
 264000 ft/hr
 73.33 ft/sec

I.1.2 Output



Sheet #	1
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

CAP DESIGN

CAP DESIGN

Code: AASHTO LRFD 8
Units: US
Pier View: Upstation.

DESIGN PARAMETERS

$f'_c = 4500.0$ psi	F_y shear = 60000.0 psi
F_y flex = 60000.0 psi	ϕ shear = 0.90
ϕ tens = 0.90	Comp below = 0.002
ϕ comp = 0.75	$E_s = 29000.0$ ksi
Tens above = 0.005	
$E_c = 4435.3$ ksi	
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	
Design of cap at face of column.	

CAP GEOMETRY

Variable Cap : Length(X) = 96.00 ft Depth(Z) = 48.00 in

Cap Section Properties

Sec.	Area ft ^2	Iz in ^4	Iy in ^4
1	18.88	726824.75	521994.25
2	22.00	1149984.00	608256.00
3	18.88	726824.75	521994.25

MAIN REINFORCEMENT

	Bar size	Quantity	Bar dist. in	As total in^2	From ft	To ft	Hook
TOP	US#11[M36]	6	3.00	9.360	0.00	95.90	Both 90
BOTTOM	US#11[M36]	6	3.00	9.360	0.00	95.90	Both 90



Sheet #	2
Job #	
Designed	
Date	Feb/18/2021
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File Name:	Belford IDC - PIER.lbcx	

STIRRUPS

From ft	To ft	Stirrup Size	n legs	Spacing in	Aprv/s in ² / ft	Bar Type
0.00	95.90	US#6[M19]	4	6.00	3.52	Stirrup

Clear Cover on Sides = 2.00 in

FLEXURE DESIGN

Span 1: From 0.00 ft To 3.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in ²	Asb- prv in ²	Asb- eff in ²	Ast- req in ²	Ast- prv in ²	Ast- eff in ²
1.7	1.7	57	0.0	2207.9	0	T	3.27	53.97	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			-5.0	-	1	T	3.27	53.97	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			2207.9	2207.9												

Span 2: From 3.00 ft To 21.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in ²	Asb- prv in ²	Asb- eff in ²	Ast- req in ²	Ast- prv in ²	Ast- eff in ²
1.3	4.3	57	0.0	2229.8	0	T	3.27	54.48	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			-411.2	-	128	T	3.27	54.48	0.047	0.90	1.13	9.36	9.36	2.25	9.36	9.36
			2229.8	2229.8												
6.9	9.9	59	1596.1	2275.3	162	T	3.27	55.56	0.048	0.90	6.51	9.36	9.36	1.14	9.36	9.36
			0.0	-	0	T	3.27	55.56	0.048	0.90	1.14	9.36	9.36	1.14	9.36	9.36
			2275.3	2275.3												
7.4	10.4	59	1667.8	2279.5	163	T	3.27	55.67	0.048	0.90	6.79	9.36	9.36	1.14	9.36	9.36
			0.0	-	0	T	3.27	55.67	0.048	0.90	1.14	9.36	9.36	1.14	9.36	9.36
			2279.5	2279.5												
15.1	18.1	60	521.6	2342.4	126	T	3.27	57.16	0.050	0.90	2.72	9.36	9.36	1.16	9.36	9.36
			-186.0	-	940	T	3.27	57.16	0.050	0.90	1.16	9.36	9.36	1.16	9.36	9.36
			2342.4	2342.4												
15.6	18.6	60	353.2	2346.7	904	T	3.27	57.26	0.050	0.90	1.83	9.36	9.36	1.16	9.36	9.36
			-320.8	-	160	T	3.27	57.26	0.050	0.90	1.16	9.36	9.36	1.66	9.36	9.36
			2346.7	2346.7												
16.7	19.7	60	0.0	2355.8	0	T	3.27	57.48	0.050	0.90	1.16	9.36	9.36	1.16	9.36	9.36
			-789.2	-	160	T	3.27	57.48	0.050	0.90	1.16	9.36	9.36	4.11	9.36	9.36
			2355.8	2355.8												



Sheet #	3
Job #	
Designed	
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Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
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Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

Span 3: From 21.00 ft To 39.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
1.3	22.3	61	0.0	2377.6	0	T	3.27	57.99	0.050	0.90	1.16	9.36	9.36	1.16	9.36	9.36
			-	-	118	T	3.27	57.99	0.050	0.90	1.16	9.36	9.36	5.26	9.36	9.36
			1070.4	2377.6												
5.2	26.2	62	1046.3	2409.7	245	T	3.27	58.76	0.051	0.90	5.33	9.36	9.36	1.17	9.36	9.36
			0.0	2409.7	0	T	3.27	58.76	0.051	0.90	1.17	9.36	9.36	1.17	9.36	9.36
5.8	26.8	62	1168.5	2414.0	240	T	3.27	58.86	0.051	0.90	5.34	9.36	9.36	1.17	9.36	9.36
			0.0	2414.0	0	T	3.27	58.86	0.051	0.90	1.17	9.36	9.36	1.17	9.36	9.36
13.4	34.4	63	929.2	2477.0	105	T	3.27	60.35	0.052	0.90	4.61	9.36	9.36	1.18	9.36	9.36
			-57.1	2477.0	1011	T	3.27	60.35	0.052	0.90	1.18	9.36	9.36	1.18	9.36	9.36
14.0	35.0	63	786.5	2481.3	100	T	3.27	60.46	0.053	0.90	3.89	9.36	9.36	1.18	9.36	9.36
			-130.9	2481.3	1011	T	3.27	60.46	0.053	0.90	1.18	9.36	9.36	1.18	9.36	9.36
16.7	37.7	64	0.0	2503.6	0	T	3.27	60.99	0.053	0.90	1.19	9.36	9.36	1.19	9.36	9.36
			-998.3	2503.6	210	T	3.27	60.99	0.053	0.90	1.19	9.36	9.36	4.90	9.36	9.36

Span 4: From 39.00 ft To 57.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
1.3	40.3	65	0.0	2525.4	0	T	3.27	61.50	0.054	0.90	1.19	9.36	9.36	1.19	9.36	9.36
			-	-	93	T	3.27	61.50	0.054	0.90	1.19	9.36	9.36	5.53	9.36	9.36
			1134.7	2525.4												
3.6	42.6	65	660.2	2544.3	166	T	3.27	61.95	0.054	0.90	3.18	9.36	9.36	1.20	9.36	9.36
			-295.3	2544.3	867	T	3.27	61.95	0.054	0.90	1.20	9.36	9.36	1.41	9.36	9.36
4.2	43.2	65	817.5	2548.8	133	T	3.27	62.06	0.054	0.90	3.93	9.36	9.36	1.20	9.36	9.36
			-221.8	2548.8	867	T	3.27	62.06	0.054	0.90	1.20	9.36	9.36	1.20	9.36	9.36
9.0	48.0	66	1063.2	2588.4	34	T	3.27	63.00	0.055	0.90	5.05	9.36	9.36	1.20	9.36	9.36
			0.0	2588.4	0	T	3.27	63.00	0.055	0.90	1.20	9.36	9.36	1.20	9.36	9.36
11.8	50.8	65	1296.1	2565.1	34	T	3.27	62.45	0.054	0.90	5.63	9.36	9.36	1.20	9.36	9.36
			0.0	2565.1	0	T	3.27	62.45	0.054	0.90	1.20	9.36	9.36	1.20	9.36	9.36
12.4	51.4	65	1190.7	2560.7	74	T	3.27	62.34	0.054	0.90	5.62	9.36	9.36	1.20	9.36	9.36
			0.0	2560.7	0	T	3.27	62.34	0.054	0.90	1.20	9.36	9.36	1.20	9.36	9.36
16.7	55.7	65	0.0	2525.4	0	T	3.27	61.50	0.054	0.90	1.19	9.36	9.36	1.19	9.36	9.36
			-	-	207	T	3.27	61.50	0.054	0.90	1.19	9.36	9.36	5.05	9.36	9.36
			1036.3	2525.4												



Sheet #	4
Job #	
Designed	
Date	Feb/18/2021
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Span 5: From 57.00 ft To 75.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
1.3	58.3	64	0.0	2503.6	0	T	3.27	60.99	0.053	0.90	1.19	9.36	9.36	1.19	9.36	9.36
			-	-	17	T	3.27	60.99	0.053	0.90	1.19	9.36	9.36	5.06	9.36	9.36
			1030.3	2503.6												
2.1	59.1	64	162.4	2497.6	977	T	3.27	60.84	0.053	0.90	1.19	9.36	9.36	1.19	9.36	9.36
			-701.4	-	17	T	3.27	60.84	0.053	0.90	1.19	9.36	9.36	3.44	9.36	9.36
			2497.6	2497.6												
2.6	59.6	64	314.3	2493.2	973	T	3.27	60.74	0.053	0.90	1.54	9.36	9.36	1.19	9.36	9.36
			-539.5	-	17	T	3.27	60.74	0.053	0.90	1.19	9.36	9.36	2.64	9.36	9.36
			2493.2	2493.2												
10.3	67.3	62	1484.4	2430.0	40	T	3.27	59.24	0.051	0.90	5.66	9.36	9.36	1.17	9.36	9.36
			0.0	-	0	T	3.27	59.24	0.051	0.90	1.17	9.36	9.36	1.17	9.36	9.36
			2430.0	2430.0												
10.8	67.8	62	1445.2	2425.6	19	T	3.27	59.13	0.051	0.90	5.51	9.36	9.36	1.17	9.36	9.36
			0.0	-	0	T	3.27	59.13	0.051	0.90	1.17	9.36	9.36	1.17	9.36	9.36
			2425.6	2425.6												
16.7	73.7	61	0.0	2377.6	0	T	3.27	57.99	0.050	0.90	1.16	9.36	9.36	1.16	9.36	9.36
			-854.7	-	185	T	3.27	57.99	0.050	0.90	1.16	9.36	9.36	4.41	9.36	9.36
			2377.6	2377.6												

Span 6: From 75.00 ft To 93.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
1.3	76.3	60	0.0	2355.8	0	T	3.27	57.48	0.050	0.90	1.16	9.36	9.36	1.16	9.36	9.36
			-758.8	-	13	T	3.27	57.48	0.050	0.90	1.16	9.36	9.36	3.95	9.36	9.36
			2355.8	2355.8												
8.8	83.8	59	1879.4	2294.6	1	T	3.27	56.02	0.048	0.90	7.62	9.36	9.36	1.15	9.36	9.36
			0.0	-	0	T	3.27	56.02	0.048	0.90	1.15	9.36	9.36	1.15	9.36	9.36
			2294.6	2294.6												
9.3	84.3	59	1906.5	2290.1	11	T	3.27	55.92	0.048	0.90	7.75	9.36	9.36	1.15	9.36	9.36
			0.0	-	0	T	3.27	55.92	0.048	0.90	1.15	9.36	9.36	1.15	9.36	9.36
			2290.1	2290.1												
16.7	91.7	57	550.2	2229.8	17	T	3.27	54.48	0.047	0.90	3.01	9.36	9.36	1.13	9.36	9.36
			0.0	-	0	T	3.27	54.48	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			2229.8	2229.8												

Span 7: From 93.00 ft To 96.00 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
1.3	94.3	57	0.0	2207.9	0	T	3.27	53.97	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			-5.0	-	1	T	3.27	53.97	0.047	0.90	1.13	9.36	9.36	1.13	9.36	9.36
			2207.9	2207.9												



		Sheet #	5
		Job #	
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Module:	Substructure	Copyright © Bentley Systems, Inc. 2016	Date Feb/18/2021
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277	Checked
File Name:	Belford IDC - PIER.lbcx		Date

Flexure Design : Notes

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
 C = Compression controlled, I = In-Transition, T = Tension controlled.

SHEAR AND TORSION DESIGN:

Span 1: From 0.00 ft To 3.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
1.67	1.67	L	5.9	1	0.0	0	2202.9	178.5	0.00	0.00	0.00	3.52	0.00	787.45	1660.24	4.65	29

Span 2: From 3.00 ft To 21.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
1.33	4.33	R	316.3	32	388.6	938	1262.5	183.5	0.25	0.20	0.64	3.52	0.00	302.15	1100.64	1.77
6.87	9.87	L	296.2	32	388.6	938	1277.1	188.5	0.25	0.20	0.64	3.52	1.32	303.10	1115.91	1.74
		R	157.0	33	487.5	158	1362.6	187.6	0.18	0.23	0.64	3.52	0.85	350.65	1163.32	2.01
7.39	10.39	L	155.1	33	487.5	158	1353.0	188.1	0.18	0.23	0.64	3.52	1.10	345.99	1157.37	1.98
		R	150.8	163	335.2	1038	1400.6	186.6	0.33	0.16	0.64	3.52	0.37	345.27	1210.95	1.97
15.05	18.05	L	179.2	163	335.2	1038	1612.5	193.5	0.36	0.14	0.64	3.52	0.00	434.09	1357.62	2.42
		R	504.6	237	448.0	220	1040.1	192.6	1.08	0.26	1.60	3.52	0.00	227.34	928.36	1.26
15.57	18.57	L	506.6	237	448.0	220	1040.0	193.1	1.08	0.26	1.61	3.52	0.00	227.10	928.41	1.26
		R	656.1	146	290.7	912	929.0	192.2	2.01	0.19	2.40	3.52	0.00	186.19	846.08	1.03
16.67	19.67	L	660.2	146	290.7	912	928.9	193.2	2.03	0.19	2.41	3.52	0.00	185.99	846.16	1.03



Sheet #	6
Job #	
Program:	LEAP® Bridge Concrete CONNECT Edition
Module:	Substructure
Version:	19.00.00.50
File Name:	Belford IDC - PIER.lbcx

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Span 3: From 21.00 ft To 39.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
1.33	22.33	L	492.8	115	713.7	912	994.5	199.9	0.97	0.40	1.78	3.52	0.98	237.13	867.82	1.30
		R	492.8	115	713.7	912	994.5	199.9	0.97	0.40	1.78	3.52	0.98	237.13	867.82	1.30
5.24	26.24	L	477.8	115	713.7	912	1030.0	203.5	0.87	0.39	1.65	3.52	0.77	245.85	898.55	1.33
		R	329.7	110	813.8	243	1211.1	202.6	0.13	0.39	0.91	3.52	0.86	316.82	1028.84	1.71
5.76	26.76	L	327.7	110	813.8	243	1217.1	203.0	0.12	0.39	0.90	3.52	1.32	318.65	1033.65	1.72
		R	71.2	236	628.8	1000	1624.3	201.2	0.13	0.26	0.64	3.52	0.00	475.55	1329.25	2.57
13.43	34.43	L	101.2	236	628.8	1000	1706.2	208.2	0.15	0.25	0.64	3.52	0.00	506.51	1389.32	2.67
		R	381.3	232	727.4	220	1189.0	207.8	0.36	0.36	1.07	3.52	0.16	293.23	1027.89	1.54
13.96	34.96	L	383.4	232	727.4	220	1188.3	208.3	0.36	0.36	1.08	3.52	0.00	292.65	1027.65	1.54
		R	531.2	225	588.5	989	1030.3	207.4	1.12	0.33	1.78	3.52	0.00	231.36	913.40	1.22
16.67	37.67	L	542.0	225	588.5	989	1028.2	209.8	1.17	0.33	1.83	3.52	0.53	229.96	912.43	1.20
		R	542.0	225	588.5	989	1028.2	209.8	1.17	0.33	1.83	3.52	0.53	229.96	912.43	1.20

Span 4: From 39.00 ft To 57.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
1.33	40.33	R	588.2	36	1075.9	1000	836.1	216.4	1.39	0.62	2.64	3.52	2.17	220.37	708.58	1.14
3.63	42.63	L	578.9	36	1075.9	1000	855.7	218.6	1.32	0.61	2.55	3.52	0.38	224.76	726.02	1.15
		R	425.1	3	1194.1	219	1016.4	217.6	0.53	0.59	1.71	3.52	0.89	281.48	847.89	1.44
4.17	43.17	L	422.9	3	1194.1	219	1022.1	218.1	0.51	0.59	1.69	3.52	1.46	283.00	852.68	1.45
		R	127.2	84	985.2	999	1653.7	217.3	0.00	0.37	0.75	3.52	0.69	525.40	1312.07	2.65
9.00	48.00	L	107.4	84	985.2	999	1646.9	221.7	0.00	0.37	0.75	3.52	1.34	513.24	1316.63	2.59
		R	107.4	84	957.7	221	1655.8	221.7	0.00	0.36	0.73	3.52	1.15	513.24	1326.53	2.59
11.84	50.84	L	95.8	84	957.7	221	1588.8	219.1	0.00	0.37	0.75	3.52	1.90	482.79	1282.56	2.45
		R	277.8	166	835.6	924	1388.5	217.9	0.00	0.36	0.72	3.52	1.57	372.35	1170.41	1.89
12.38	51.38	L	280.0	166	835.6	924	1381.3	217.4	0.00	0.36	0.72	3.52	1.20	369.93	1164.82	1.88
		R	428.2	204	1026.0	158	1066.6	216.4	0.54	0.51	1.56	3.52	2.27	279.11	905.96	1.42
16.67	55.67	L	445.6	204	1026.0	158	1022.7	212.5	0.65	0.52	1.70	3.52	1.79	267.65	868.69	1.38
		R	445.6	204	1026.0	158	1022.7	212.5	0.65	0.52	1.70	3.52	1.79	267.65	868.69	1.38

Span 5: From 57.00 ft To 75.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
1.33	58.33	R	674.5	70	617.9	221	881.5	214.2	1.94	0.39	2.71	3.52	0.81	196.38	783.04	1.02
2.06	59.06	L	671.6	70	617.9	221	881.9	213.5	1.92	0.39	2.70	3.52	0.00	196.59	783.28	1.03
		R	521.9	4	547.9	66	1071.1	212.6	1.05	0.30	1.65	3.52	0.00	238.23	951.89	1.24
2.60	59.60	L	519.7	4	547.9	66	1071.6	212.1	1.04	0.30	1.64	3.52	0.00	238.54	952.09	1.25
		R	213.1	62	621.2	224	1553.3	211.2	0.13	0.26	0.64	3.52	0.00	424.31	1301.56	2.22
10.29	67.29	L	182.9	62	621.2	224	1440.2	204.2	0.10	0.27	0.64	3.52	0.92	382.22	1217.95	2.05
		R	192.7	170	567.9	57	1441.9	202.8	0.14	0.25	0.64	3.52	0.77	375.45	1226.63	2.01
10.83	67.83	L	194.8	170	567.9	57	1444.4	202.3	0.14	0.25	0.64	3.52	0.66	377.16	1227.77	2.03
		R	350.0	149	727.8	158	1206.0	201.4	0.23	0.35	0.94	3.52	2.20	303.36	1036.68	1.63
16.67	73.67	L	372.4	149	727.8	158	1143.3	196.1	0.36	0.37	1.10	3.52	0.08	285.35	984.96	1.56
		R	372.4	149	727.8	158	1143.3	196.1	0.36	0.37	1.10	3.52	0.08	285.35	984.96	1.56



Sheet #	7
Job #	
Designed	
Date	Feb/18/2021
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Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

Span 6: From 75.00 ft To 93.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
1.33	76.33	R	328.6	1	354.0	173	1327.4	196.1	0.30	0.17	0.64	3.52	0.00	309.90	1164.99	1.71
8.78	83.78	L	300.8	1	354.0	173	1246.7	189.4	0.28	0.18	0.64	3.52	2.30	286.04	1099.18	1.62
		R	150.0	11	372.8	41	1362.6	189.1	0.29	0.18	0.64	3.52	1.24	332.64	1181.39	1.89
9.32	84.32	L	148.0	11	372.8	41	1355.6	188.7	0.28	0.18	0.64	3.52	1.34	330.28	1175.91	1.88
		R	192.8	141	403.8	132	1299.7	186.4	0.24	0.20	0.64	3.52	1.94	312.09	1132.00	1.78
16.67	91.67	L	219.5	141	403.8	132	1416.6	179.8	0.27	0.19	0.64	3.52	0.00	369.19	1204.83	2.16
		R	219.5	141	403.8	132	1416.6	179.8	0.27	0.19	0.64	3.52	0.00	369.19	1204.83	2.16

Span 7: From 93.00 ft To 96.00 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta
1.33	94.33	R	5.9	1	0.0	0	2202.9	178.5	0.00	0.00	0.00	3.52	0.00	787.45	1660.24	4.65	29

Shear and Torsion Design : Notes

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- T-lim is the limiting value of torsion for the concrete section. If actual torsion is higher than this value, torsional steel has to be provided.
- Avs/s is the required area of steel per unit length for shear force.
- Ats/s is the required area of steel per unit length for one leg of torsional reinforcement.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprv/s is the total provided area of transverse steel reinforcement.
- Alx is the EFFECTIVE longitudinal steel required in addition to the PROVIDED EFFECTIVE flexural steel.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi*Vn.

CRACKING/FATIGUE CHECK



Sheet #	8
Job #	
Designed	
Date	Feb/18/2021
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Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig	
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016	
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File Name:	Belford IDC - PIER.lbcx		

Span 1: From 0.00 ft To 3.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Sqrt Srqb in	Cracking Sqrt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
1.67	1.7	57.0	1081 0	0.1 0.0	2.7 2.7	48.0 5.0	8.2 8.2	0.00 0.00	0.00 0.00

Span 2: From 3.00 ft To 21.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Sqrt Srqb in	Cracking Sqrt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
1.33	4.3	57.5	1208 0	6.9 0.0	2.7 2.7	48.0 5.0	8.2 8.2	0.00 0.00	0.00 0.00
6.87	9.9	58.6	0 3062	0.0 26.9	2.7 2.7	5.0 18.9	8.2 8.2	0.00 0.00	0.00 0.00
7.39	10.4	58.7	0 3063	0.0 28.0	2.7 2.7	5.0 18.0	8.2 8.2	0.00 0.00	0.00 0.00
15.05	18.1	60.2	3060 1206	2.2 7.4	2.7 2.7	48.0 48.0	8.2 8.2	0.00 0.00	0.00 0.00
15.57	18.6	60.3	3060 1204	4.9 4.2	2.7 2.7	48.0 48.0	8.2 8.2	0.00 0.00	0.00 0.00
16.67	19.7	60.5	3060 0	13.3 0.0	2.7 2.7	43.8 5.0	8.2 8.2	0.00 0.00	0.00 0.00

Span 3: From 21.00 ft To 39.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Sqrt Srqb in	Cracking Sqrt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
1.33	22.3	61.0	1198 0	17.7 0.0	2.7 2.7	31.6 5.0	8.2 8.2	0.00 0.00	0.00 0.00
5.24	26.2	61.8	0 3145	0.0 15.6	2.7 2.7	5.0 36.8	8.2 8.2	0.00 0.00	0.00 0.00
5.76	26.8	61.9	0 3140	0.0 17.5	2.7 2.7	5.0 32.2	8.2 8.2	0.00 0.00	0.00 0.00
13.43	34.4	63.4	0 1185	0.0 13.2	2.7 2.7	5.0 44.6	8.2 8.2	0.00 0.00	0.00 0.00
13.96	35.0	63.5	3131 1180	0.3 10.9	2.7 2.7	48.0 48.0	8.2 8.2	0.00 0.00	0.00 0.00
16.67	37.7	64.0	3110 0	15.9 0.0	2.7 2.7	36.0 5.0	8.2 8.2	0.00 0.00	0.00 0.00



Sheet #	9
Job #	
Designed	
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Program: LEAP® Bridge Concrete CONNECT Edition

Felsburg Holt and Ullevig

Module: Substructure

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File Name: Belford IDC - PIER.lbcx

Span 4: From 39.00 ft To 57.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Sqrt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
1.33	40.3	64.5	1173	17.4	2.7	32.5	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
3.63	42.6	65.0	1167	3.0	2.7	48.0	8.2	0.00	0.00	0.00	0.00
			3066	8.8	2.7	48.0	8.2	0.00	0.00	0.00	0.00
4.17	43.2	65.1	1167	1.3	2.7	48.0	8.2	0.00	0.00	0.00	0.00
			3033	11.2	2.7	48.0	8.2	0.00	0.00	0.00	0.00
9.00	48.0	66.0	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1114	14.8	2.7	39.1	8.2	0.00	0.00	0.00	0.00
11.84	50.8	65.4	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1114	18.1	2.7	31.0	8.2	0.00	0.00	0.00	0.00
12.38	51.4	65.3	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1154	16.6	2.7	34.4	8.2	0.00	0.00	0.00	0.00
16.67	55.7	64.5	3107	16.3	2.7	35.0	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00

Span 5: From 57.00 ft To 75.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Sqrt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
1.33	58.3	64.0	1097	15.7	2.7	36.5	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
2.06	59.1	63.8	1097	10.3	2.7	48.0	8.2	0.00	0.00	0.00	0.00
			3097	0.0	2.7	48.0	8.2	0.00	0.00	0.00	0.00
2.60	59.6	63.7	1097	7.7	2.7	48.0	8.2	0.00	0.00	0.00	0.00
			3093	3.1	2.7	48.0	8.2	0.00	0.00	0.00	0.00
10.29	67.3	62.2	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1120	22.1	2.7	24.4	8.2	0.00	0.00	0.00	0.00
10.83	67.8	62.1	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1489	21.5	2.7	25.2	8.2	0.00	0.00	0.00	0.00
16.67	73.7	61.0	3085	14.6	2.7	39.7	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00



Sheet #	10
Job #	
Designed	
Date	Feb/18/2021
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Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
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File Name:	Belford IDC - PIER.lbcx	

Span 6: From 75.00 ft To 93.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t ksi	fs-b ksi			fs-t ksi	fs-b ksi	FTH-t ksi	FTH-b ksi
1.33	76.3	60.5	1093	12.5	2.7	47.1	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
8.78	83.8	59.0	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1081	31.0	2.7	15.7	8.2	0.00	0.00	0.00	0.00
9.32	84.3	58.9	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1091	31.5	2.7	15.4	8.2	0.00	0.00	0.00	0.00
16.67	91.7	57.5	0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00
			1097	9.6	2.7	48.0	8.2	0.00	0.00	0.00	0.00

Span 7: From 93.00 ft To 96.00 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t ksi	fs-b ksi			fs-t ksi	fs-b ksi	FTH-t ksi	FTH-b ksi
1.33	94.3	57.0	1081	0.1	2.7	48.0	8.2	0.00	0.00	0.00	0.00
			0	0.0	2.7	5.0	8.2	0.00	0.00	0.00	0.00

Cracking and fatigue Check : Notes

* Cracking / fatigue checking failed.
 Required bar spacing, Sreq, should not be less than 5 in per Art. 5.7.3.4.



Sheet #	11
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

COLUMN DESIGN

COLUMN DESIGN - Column: 1 - Shaft

Code: AASHTO LRFD 8
Units: US
Pier View: Upstation.
Design/Analysis Method: No Slenderness Considered.

Shaft Type: Round D = 48.00 in

Shaft Section Properties

Sec.	Area ft ²	Ix in ⁴	Iz in ⁴
1	12.57	260576.25	260576.25

DESIGN PARAMETERS

f _c = 4000.0 psi	f _y = 60000.0 psi
phi tens = 0.90	phi comp = 0.75
Tens above = 0.005	Comp below = 0.002
phi shear = 0.90	f _y shear = 60000.00 psi
E _c = 4266.2 ksi	E _s = 29000 ksi
Concrete Type : Normal Weight.	

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel



Sheet #	12
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#10[M32]	14	3.00	0.00	17.00	Top 90

Note:

Bar Dist refers to the distance between center of reinforcement and concrete surface.

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#6[M19]	Ties	4.00	0.00	17.00

Design values used - (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
5747.00	953	21.4	435.6	-28.5	-1210.8	29.9	-357.4
5764.00	953	-21.4	406.8	28.5	726.6	29.9	-69.2

Shaft Design (above fixity point)

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
5747.00	953	435.6	1210.8	357.4	2087.6	16.44	1.00	1.65358
5764.00	953	406.8	726.6	69.2	2039.1	5.44	1.00	2.79390

Shaft Design (above fixity point)

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
5747.00	18.32	144.76	17.78**
5764.00	18.32	144.76	17.78**

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprv/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
5747.00	L	38.5	17	1138.2	0.00	2.64	470.20	794.43	4.61	29.20	48.00	33.63	0.0001	24.00	4.00
5764.00	R	38.5	17	1273.3	0.00	2.64	587.66	827.08	5.76	28.23	48.00	33.63	-0.0002	24.00	4.00

Shaft Design (below fixity point)

Diameter in	Height ft	Pu kips	Combo	pPn kips	pPn/Pu
48.00	23.00	729.08	33	4008.95	5.50**



Sheet #	13
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

Column Design : Notes

Min reinforcement = 0.9000 % of Ag.
 ** Minimum/Maximum requirement for reinforcement ratio violated.
 ** Bar spacing violated.
 *** Auto-design only considered one layer of reinforcement. Please try providing additional layers of bars to satisfy the design requirements.

Shear Design : Notes

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi*Vn.

COLUMN DESIGN - Column: 1

Code: AASHTO LRFD 8
 Units: US
 Pier View: Upstation.
 Design/Analysis Method: No Slenderness Considered.

Column Type: Round D = 36.00 in

Column Section Properties

Sec.	Area ft ²	Ix in ⁴	Iz in ⁴
1	7.07	82447.96	82447.96



Sheet #	14
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

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Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

DESIGN PARAMETERS

$f_c = 4500.0$ psi $\phi_{\text{tens}} = 0.90$ Tens above = 0.005 $\phi_{\text{shear}} = 0.90$ $E_c = 4435.3$ ksi Concrete Type : Normal Weight.	$f_y = 60000.0$ psi $\phi_{\text{comp}} = 0.75$ Comp below = 0.002 $f_y \text{ shear} = 60000.00$ psi $E_s = 29000$ ksi
---	---

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#10[M32]	14	3.00	0.00	11.11	Top 90

Note:

Bar Dist refers to the distance between center of reinforcement and concrete surface.

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#6[M19]	Ties	4.00	0.00	11.11

Design values used - (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
5764.00	938	22.5	440.6	-28.4	-736.6	28.2	61.7
5775.11	938	-22.5	432.3	28.4	420.6	28.2	-262.2
5764.00	953	21.4	406.8	-28.5	-726.6	29.9	56.9
5775.11	953	-21.4	398.5	28.5	410.0	29.9	-245.4

COLUMN DESIGN

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
5764.00	953	406.8	726.6	56.9	1349.9	4.48	1.00	1.85231
5775.11	938	432.3	420.6	262.2	1372.6	31.94	1.00	2.76951



Sheet #	15
Job #	
Designed	
Date	Feb/18/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - PIER.lbcx	

COLUMN DESIGN

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
5764.00	10.31	81.43	17.78
5775.11	10.31	81.43	17.78

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprvs/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
5764.00	L	38.5	17	824.6	0.00	2.64	315.51	600.67	5.27	28.58	36.00	24.79	-0.0001	19.84	4.00
5775.11	R	38.5	17	294.8	0.00	0.00	327.52	0.00	5.12	28.71	36.00	26.51	-0.0001	21.21	0.00

Column Design : Notes

Min reinforcement = 1.0125 % of Ag.
 Shear Design : Notes
 - Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
 - Av/s is the total required area of steel per unit length due to shear plus torsion.
 - Aprvs/s is the total provided area of transverse steel reinforcement.
 - Vc is the nominal shear resistance of concrete.
 - Vs is the nominal shear resistance of transverse reinforcement.
 - Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
 - Theta is the angle of inclination of diagonal compressive stress.
 - # Vu is greater than phi*Vn.

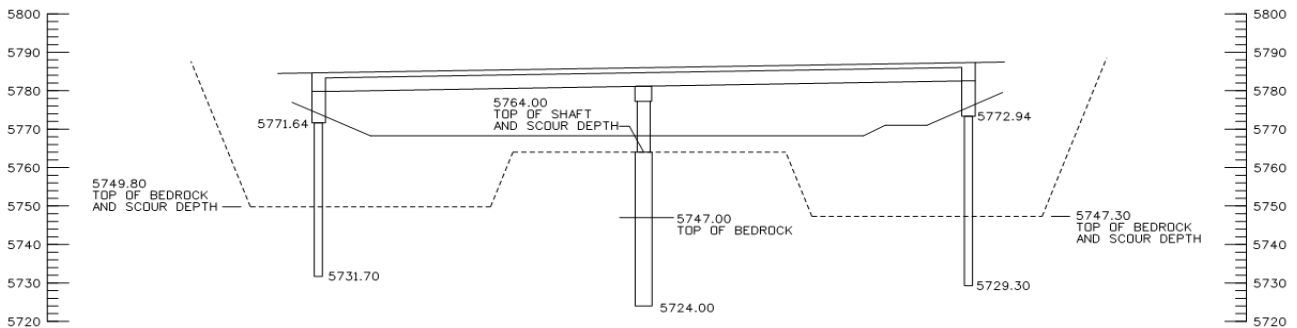
I.2.1 Geometry and Input

GENERAL ABUT GEOMETRY:

Cap Length = 99.333 ft
G1 Brg EI = 5781.82
G7 Brg EI = 5782.38
G12 Brg EI = 5781.36
Bottom of Cap EI = 5772.94
Min Cap H = 103.8 in
Max Cap H = 113.28 in
Top of Shaft EI = 5772.94
Top of Bedrock or Scour = 5747.30

Section Depth:

Deck + Haunch = 13 in
Girder = 42 in
Bearing = 0.75 in
Total = 55.75 in



ABUTMENT CONFIG.:

Start Elev = 5777.3
End Elev = 5777.3
Abut Length = 99.333 ft
Backwall Offset = 0 in
Skew = 17.5 deg

WB = 0.0001 in
WD = 55.75 in
SD = 101.0 in
SW = 36 in

Wingwall H = 13.1 ft

Abutment Configuration [X]

Parameters

Start Elevation: ft Factor of Reduced Moment of Inertia:

End Elevation: ft Skew Angle:

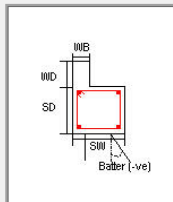
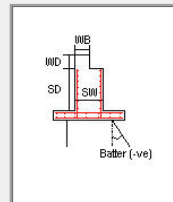
Abutment Length (X): ft

Back Wall Offset: in

Abutment Configuration

Pile Cap Design Stem Wall Design

WB: in
WD: in
SD: in
SW: in

Backwall Side

Start Abutment End Abutment

Abutment View

DownStation UpStation

Frame Analysis Method

Cap as continuous beam Piles integral with cap

Keep current loads and load combinations (default)

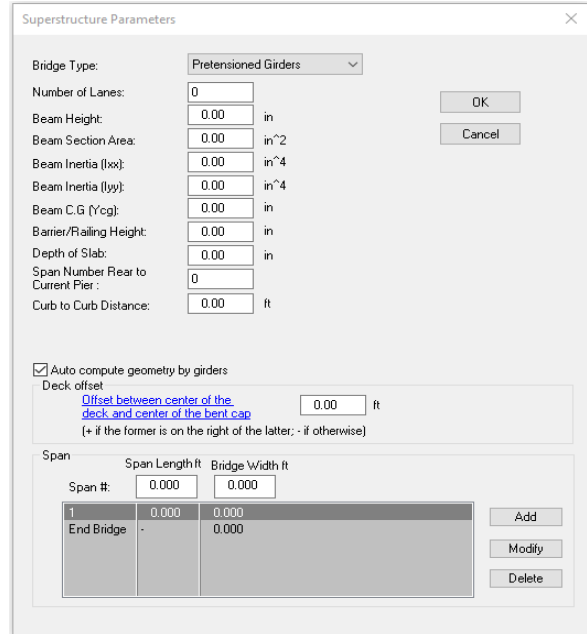
Reset current loads and load combinations

Note: for "Cap as continuous beam" method, all out-of-plane forces and moments will be ignored.

SUPERSTRUCTURE PARAMETERS:

Curb to Curb = 74 ft
 Number of Lanes = 6
 Beam Height = 42 in
 Beam Section Area = 653 in²
 Beam Inertia (Ixx) = 152824 in⁴
 Beam Inertia (Iyy) = 42248 in⁴
 Beam C.G. (bottom) = 21.17 in
 Railing Height = 45 in
 Depth of Slab = 8 in

 Span 1 Length = 75.9 ft
 Span 2 Length = 78.3 ft
 Bridge Width = 94.0 ft



Superstructure Parameters

Bridge Type: Pretensioned Girders

Number of Lanes: 0

Beam Height: 0.00 in

Beam Section Area: 0.00 in²

Beam Inertia (Ixx): 0.00 in⁴

Beam Inertia (Iyy): 0.00 in⁴

Beam C.G. (Ycg): 0.00 in

Barrier/Railing Height: 0.00 in

Depth of Slab: 0.00 in

Span Number Rear to Current Pier: 0

Curb to Curb Distance: 0.00 ft

Auto compute geometry by girders

Deck offset: 0.00 ft
Offset between center of the deck and center of the bent cap (+ if the former is on the right of the latter; - if otherwise)

Span #	Span Length ft	Bridge Width ft
1	0.000	0.000
End Bridge	-	0.000

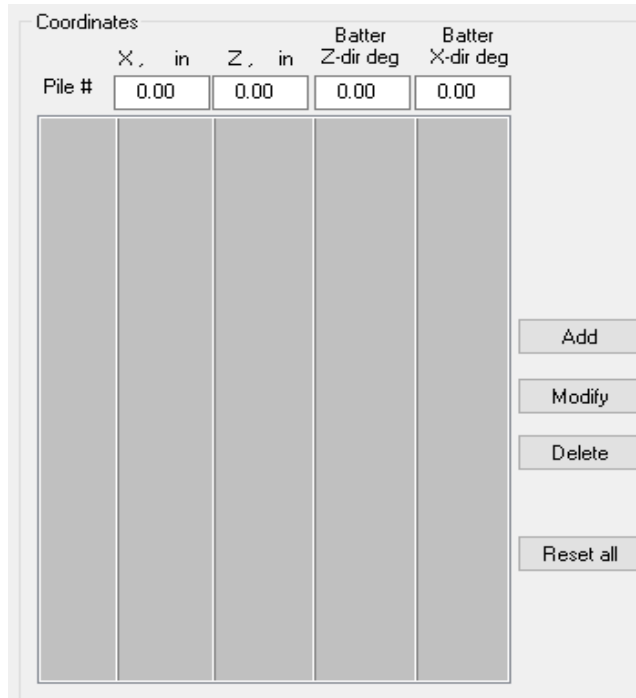
Buttons: Add, Modify, Delete

PILES:

Point	X (in)
1	13.4
2	157.4
3	301.4
4	445.4
5	589.4
6	733.4
7	877.4
8	1021.4
9	1165.4

DRILLED SHAFT:

Top of Shaft = 5772.94
 Top of Bedrock = 5747.30
 Tip Elev = 5729.30
 Length = 25.64 ft
 Diameter = 24 in



Coordinates

Pile #	X, in	Z, in	Batter Z-dir deg	Batter X-dir deg
1	0.00	0.00	0.00	0.00

Buttons: Add, Modify, Delete, Reset all



Project No.: 115360-02
 Subject: IDC
 Loads for RCPier ABUT

Calc'd By: JDJ
 Checked By: n/a
 Date: 23-Feb-21
 Sheet No:

ABUTMENT REACTIONS:

NOTES: Reactions are per PGSuper
 The totaled loads for Pier 2 are divided by 2 for input into RCPier (back and ahead bearings)

Girder Line	Location	Girder	Diaphragm	Slab	Haunch	Sidewalk	Traffic Railing	Future Overlay	Pedestrian	User Defined		DC	DW	Pedestrian	
										DC	DW				
A	1	Abut 3	28.5	2.55	32.38	5.41	8.17	3.42	6.55	3.58	0.84	1.16	82	8	4
B	2	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
C	3	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
D	4	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
E	5	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
F	6	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
G	7	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
H	8	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
I	9	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
J	10	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
K	11	Abut 3	28.5	2.95	30.28	5.42	8.17	3.42	6.55	3.58	0.84	1.16	80	8	4
L	12	Abut 3	28.5	2.55	32.38	5.41	8.17	3.42	6.55	3.58	0.84	1.16	82	8	4

LIVE LOADS: Autogenerate
 Centrifugal Loads: Radius = 770 ft
 Design Speed = 50 mph (assumed)
 264000 ft/hr
 73.33 ft/sec

STREAM FLOW: AASHTO 3.7.3 $p \text{ (ksf)} = C_D V^2 / 1000$
 $C_D = 0.7$
 $V = 10 \text{ ft/sec}$
 $p = 0.07 \text{ ksf}$

RCPier Abutment design doesn't allow lateral loads on shafts or piles.
 Model as bearing loads in the X direction.

Number of Shafts = 9
 Number of Bearings = 12
 Exposed Height of Shaft = 26 ft
 Total Stream Force per Shaft = 0.9 k
 Total all Shafts = 8.2 k
 Load per Bearing = 0.7 k

I.2.2 Output



Sheet #	1
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

CAP DESIGN

Code: AASHTO LRFD 8
 Units: US
 Abutment View: Upstation.

DESIGN PARAMETERS

$f_c = 4500.0$ psi $F_y \text{ flex} = 60000.0$ psi $\phi \text{ tens} = 0.90$ $\phi \text{ comp} = 0.75$ Tens above = 0.005 $E_c = 4435.3$ ksi Crack check as per current LRFD Crack control Exposure = 1.00 Concrete Type : Normal Weight. Design of cap at face of stem.	$F_y \text{ shear} = 60000.0$ psi $\phi \text{ shear} = 0.90$ Comp below = 0.002 $E_s = 29000.0$ ksi
--	---

CAP GEOMETRY

Straight Cap : Length(X) = 99.33 ft Depth(Z) = 36.00 in

Cap Section Properties

Sec.	Area ft ^2	Iz in ^4	Iy in ^4
1	26.50	3573048.00	412128.00

MAIN REINFORCEMENT

	Bar size	Quantity	Bar dist. in	As total in^2	From ft	To ft	Hook
TOP	US#9[M29]	4	3.00	4.000	0.00	99.24	None
BOTTOM	US#9[M29]	4	3.00	4.000	0.00	99.24	None



Sheet #	2
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

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Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

STIRRUPS

From ft	To ft	Stirrup Size	n legs	Spacing in	Aprv/s in ² / ft	Bar Type
0.00	99.24	US#6[M19]	2	6.00	1.76	Stirrup

Clear Cover on Sides = 2.00 in

FLEXURE DESIGN

Span 1: From 0.00 ft To 1.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in ²	Asb-prv in ²	Asb-eff in ²	Ast-req in ²	Ast-prv in ²	Ast-eff in ²
0.2	0.2	106	0.0 -0.1	607.3 -607.3	0 1	T T	1.81 1.81	103.00 103.00	0.168 0.168	0.90 0.90	0.87 0.87	4.00 4.00	1.27 2.41	0.87 0.87	4.00 4.00	2.41 1.27

Span 2: From 1.12 ft To 13.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in ²	Asb-prv in ²	Asb-eff in ²	Ast-req in ²	Ast-prv in ²	Ast-eff in ²
0.9	2.0	106	215.4 0.0	1842.8 1842.8	14 0	T T	2.61 2.61	103.00 103.00	0.115 0.115	0.90 0.90	0.87 0.87	4.00 4.00	4.00 4.00	0.87 0.87	4.00 4.00	4.00 4.00
3.8	4.9	106	614.5 0.0	1842.8 1842.8	2 0	T T	2.61 2.61	103.00 103.00	0.115 0.115	0.90 0.90	1.77 0.87	4.00 4.00	4.00 4.00	0.87 0.87	4.00 4.00	4.00 4.00
11.1	12.2	106	664.9 0.0	1842.8 1842.8	48 0	T T	2.61 2.61	103.00 103.00	0.115 0.115	0.90 0.90	1.92 0.87	4.00 4.00	4.00 4.00	0.87 0.87	4.00 4.00	4.00 4.00



Sheet #	3
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig	
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016	
Version:	19.00.00.50	www.bentley.com	Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx		

Span 3: From 13.12 ft To 25.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	14.0	106	698.8	1842.8	2	T	2.61	103.00	0.115	0.90	2.01	4.00	4.00	0.87	4.00	4.00
			0.0	1842.8	0	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
7.9	21.0	106	1077.1	1842.8	8	T	2.61	103.00	0.115	0.90	3.11	4.00	4.00	0.87	4.00	4.00
			0.0	1842.8	0	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	24.2	106	378.7	1842.8	365	T	2.61	103.00	0.115	0.90	1.09	4.00	4.00	0.87	4.00	4.00
			-262.6	1842.8	3	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00

Span 4: From 25.12 ft To 37.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	26.0	106	414.7	1842.8	319	T	2.61	103.00	0.115	0.90	1.19	4.00	4.00	0.87	4.00	4.00
			-237.7	1842.8	49	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
4.0	29.1	106	949.2	1842.8	38	T	2.61	103.00	0.115	0.90	2.74	4.00	4.00	0.87	4.00	4.00
			-19.2	1842.8	337	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	36.2	106	376.7	1842.8	357	T	2.61	103.00	0.115	0.90	1.08	4.00	4.00	0.87	4.00	4.00
			-438.9	1842.8	40	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.26	4.00	4.00

Span 5: From 37.12 ft To 49.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	38.0	106	444.2	1842.8	311	T	2.61	103.00	0.115	0.90	1.28	4.00	4.00	0.87	4.00	4.00
			-366.5	1842.8	86	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.05	4.00	4.00
8.2	45.3	106	801.4	1842.8	28	T	2.61	103.00	0.115	0.90	2.31	4.00	4.00	0.87	4.00	4.00
			-235.0	1842.8	310	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	48.2	106	253.4	1842.8	350	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
			-537.5	1842.8	34	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.55	4.00	4.00



Sheet #	4
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

Span 6: From 49.12 ft To 61.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	50.0	106	281.6	1842.8	301	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
			-453.2	-	76	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.30	4.00	4.00
3.7	52.8	106	802.4	1842.8	25	T	2.61	103.00	0.115	0.90	2.31	4.00	4.00	0.87	4.00	4.00
			-200.0	-	306	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	60.2	106	368.2	1842.8	344	T	2.61	103.00	0.115	0.90	1.06	4.00	4.00	0.87	4.00	4.00
			-466.2	-	26	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.34	4.00	4.00

Span 7: From 61.12 ft To 73.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	62.0	106	426.7	1842.8	298	T	2.61	103.00	0.115	0.90	1.23	4.00	4.00	0.87	4.00	4.00
			-383.1	-	72	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	1.10	4.00	4.00
7.9	69.0	106	905.9	1842.8	65	T	2.61	103.00	0.115	0.90	2.61	4.00	4.00	0.87	4.00	4.00
			-88.8	-	300	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	72.2	106	313.9	1842.8	332	T	2.61	103.00	0.115	0.90	0.90	4.00	4.00	0.87	4.00	4.00
			-343.1	-	11	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.99	4.00	4.00

Span 8: From 73.12 ft To 85.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	74.0	106	382.7	1842.8	332	T	2.61	103.00	0.115	0.90	1.10	4.00	4.00	0.87	4.00	4.00
			-268.3	-	17	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
4.0	77.1	106	1024.8	1842.8	58	T	2.61	103.00	0.115	0.90	2.96	4.00	4.00	0.87	4.00	4.00
			-5.6	-	293	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	84.2	106	586.0	1842.8	47	T	2.61	103.00	0.115	0.90	1.69	4.00	4.00	0.87	4.00	4.00
			-158.0	-	290	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00



Sheet #	5
Job #	
Designed	
Date	Feb/24/2021
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Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

Span 9: From 85.12 ft To 97.12 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	86.0	106	644.2	1842.8	1	T	2.61	103.00	0.115	0.90	1.86	4.00	4.00	0.87	4.00	4.00
			0.0	1842.8	0	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
8.2	93.4	106	603.5	1842.8	47	T	2.61	103.00	0.115	0.90	1.74	4.00	4.00	0.87	4.00	4.00
			0.0	1842.8	0	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
11.1	96.2	106	110.2	1842.8	47	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
			-56.3	1842.8	290	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00

Span 10: From 97.12 ft To 99.33 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb- req in^2	Asb- prv in^2	Asb- eff in^2	Ast- req in^2	Ast- prv in^2	Ast- eff in^2
0.9	98.0	106	0.0	1842.8	0	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00
			-4.4	1842.8	1	T	2.61	103.00	0.115	0.90	0.87	4.00	4.00	0.87	4.00	4.00

Flexure Design : Notes

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
 C = Compression controlled, I = In-Transition, T = Tension controlled.

SHEAR AND TORSION DESIGN:

Span 1: From 0.00 ft To 1.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
0.23	0.23	L	1.1	1	0.0	0	2495.4	257.0	0.00	0.00	0.00	1.76	0.00	1156.89	1615.72	4.68	29



Sheet #	6
Job #	
Program:	LEAP® Bridge Concrete CONNECT Edition
Module:	Substructure
Version:	19.00.00.50
File Name:	Belford IDC - ABUT.lbcx

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Span 2: From 1.12 ft To 13.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
0.89	2.00	R	160.0	48	280.3	60	1230.2	257.1	0.26	0.11	0.48	1.76	0.00	385.52	981.40	1.57
3.76	4.88	L	145.7	48	280.3	60	1284.3	257.1	0.27	0.11	0.48	1.76	0.00	410.27	1016.71	1.67
		R	33.6	9	223.4	55	1905.6	256.5	0.00	0.00	0.00	1.76	0.00	696.03	1421.28	2.83
11.11	12.23	L	70.1	9	223.4	55	1757.2	256.5	0.00	0.00	0.00	1.76	0.00	599.16	1353.29	2.43

Span 3: From 13.12 ft To 25.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
0.89	14.00	R	94.7	89	421.5	59	1454.7	257.2	0.20	0.14	0.48	1.76	0.70	532.26	1084.03	2.16
7.92	21.04	L	59.7	89	421.5	59	1462.5	257.2	0.20	0.14	0.48	1.76	1.38	536.74	1088.21	2.18
		R	220.0	8	364.7	60	1000.2	257.1	0.16	0.16	0.48	1.76	1.30	307.49	803.83	1.25
11.11	24.23	L	235.8	8	364.7	60	956.9	257.1	0.15	0.17	0.48	1.76	0.00	291.92	771.32	1.19
		R	235.8	8	364.7	60	956.9	257.1	0.15	0.17	0.48	1.76	0.00	291.92	771.32	1.19

Span 4: From 25.12 ft To 37.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
0.89	26.00	R	205.0	81	607.0	55	934.9	257.2	0.00	0.26	0.53	1.76	0.84	324.14	714.59	1.32
4.00	29.12	L	189.5	81	607.0	55	982.6	257.2	0.00	0.25	0.51	1.76	2.05	342.99	748.75	1.39
		R	115.6	8	550.1	60	1290.6	257.1	0.09	0.20	0.48	1.76	1.99	474.10	959.94	1.93
11.11	36.23	L	150.9	8	550.1	60	1141.6	257.1	0.06	0.21	0.48	1.76	0.76	400.65	867.85	1.63
		R	150.9	8	550.1	60	1141.6	257.1	0.06	0.21	0.48	1.76	0.76	400.65	867.85	1.63

Span 5: From 37.12 ft To 49.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
0.89	38.00	R	115.7	71	737.2	60	1206.5	257.2	0.00	0.26	0.53	1.76	2.06	474.33	866.22	1.93
8.16	45.28	L	79.5	71	737.2	60	1355.3	257.2	0.00	0.25	0.49	1.76	3.05	557.50	948.40	2.26
		R	220.4	41	680.4	55	856.4	257.0	0.00	0.30	0.61	1.76	1.98	307.07	644.43	1.25
11.11	48.23	L	235.0	41	680.4	55	816.3	257.0	0.00	0.31	0.63	1.76	1.35	292.65	614.35	1.19
		R	235.0	41	680.4	55	816.3	257.0	0.00	0.31	0.63	1.76	1.35	292.65	614.35	1.19

Span 6: From 49.12 ft To 61.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta
0.89	50.00	R	222.9	78	684.5	60	848.2	257.2	0.00	0.31	0.62	1.76	1.22	304.76	637.64	1.24
3.69	52.81	L	208.9	78	684.5	60	888.0	257.2	0.00	0.30	0.60	1.76	2.03	319.63	667.07	1.30
		R	91.3	28	741.4	55	1318.9	257.1	0.00	0.25	0.50	1.76	3.05	537.31	928.10	2.18
11.11	60.23	L	128.2	28	741.4	55	1147.3	257.1	0.00	0.27	0.55	1.76	2.04	444.92	829.88	1.81
		R	128.2	28	741.4	55	1147.3	257.1	0.00	0.27	0.55	1.76	2.04	444.92	829.88	1.81



Sheet #	7
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

Span 7: From 61.12 ft To 73.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
0.89	62.00	R	131.6	56	552.6	55	1220.3	257.3	0.07	0.20	0.48	1.76	0.79	438.76	917.11	1.78	3
7.91	69.03	L	96.7	56	552.6	55	1360.3	257.3	0.10	0.19	0.48	1.76	1.94	512.43	999.03	2.08	3
		R	205.6	22	609.5	59	930.9	257.0	0.00	0.26	0.53	1.76	1.93	323.06	711.29	1.31	4
11.11	72.23	L	221.5	22	609.5	59	885.1	257.0	0.00	0.27	0.55	1.76	0.66	305.86	677.58	1.24	4

Span 8: From 73.12 ft To 85.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
0.89	74.00	R	224.4	58	366.0	55	987.7	257.1	0.15	0.17	0.48	1.76	0.00	303.14	794.31	1.23	
4.02	77.14	L	208.8	58	366.0	55	1032.1	257.1	0.16	0.16	0.48	1.76	1.17	319.67	827.13	1.30	
		R	76.0	10	422.8	59	1433.5	257.0	0.19	0.15	0.48	1.76	1.31	520.59	1072.21	2.12	
11.11	84.23	L	111.2	10	422.8	59	1368.7	257.0	0.18	0.15	0.48	1.76	0.44	484.97	1035.77	1.97	

Span 9: From 85.12 ft To 97.12 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
0.89	86.00	R	57.2	78	223.9	60	1824.7	257.7	0.00	0.00	0.00	1.76	0.00	642.10	1385.37	2.61	
8.24	93.36	L	30.2	277	223.9	60	1932.5	257.0	0.00	0.00	0.00	1.76	0.00	714.60	1432.66	2.90	
		R	168.9	12	280.8	55	1197.0	257.0	0.26	0.11	0.48	1.76	0.00	371.04	959.01	1.51	
11.11	96.23	L	183.2	12	280.8	55	1148.9	257.0	0.25	0.12	0.48	1.76	0.00	350.73	925.88	1.42	

Span 10: From 97.12 ft To 99.33 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Th d
0.89	98.00	R	6.6	1	0.0	0	2412.5	257.0	0.00	0.00	0.00	1.76	0.00	1088.65	1591.92	4.42	29



Sheet #	8
Job #	
Designed	
Date	Feb/24/2021
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Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016
Version:	19.00.00.50	www.bentley.com Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx	

Shear and Torsion Design : Notes

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- T-lim is the limiting value of torsion for the concrete section. If actual torsion is higher than this value, torsional steel has to be provided.
- Av/s is the required area of steel per unit length for shear force.
- Ats/s is the required area of steel per unit length for one leg of torsional reinforcement.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Alx is the EFFECTIVE longitudinal steel required in addition to the PROVIDED EFFECTIVE flexural steel.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi*Vn.

CRACKING/FATIGUE CHECK

Span 1: From 0.00 ft To 1.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	Cracking dc in	Sqrt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.23	0.2	106.0	441 0	0.0 0.0	2.6 2.6	36.0 5.0	9.8 9.8	0.00 0.00	0.00 0.00		

Span 2: From 1.12 ft To 13.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	Cracking dc in	Sqrt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	2.0	106.0	0 1466	0.0 4.6	2.6 2.6	5.0 36.0	9.8 9.8	0.00 0.00	0.00 0.00		
3.76	4.9	106.0	0 1454	0.0 13.5	2.6 2.6	5.0 36.0	9.8 9.8	0.00 0.00	0.00 0.00		
11.11	12.2	106.0	0 1040	0.0 12.9	2.6 2.6	5.0 36.0	9.8 9.8	0.00 0.00	0.00 0.00		



Sheet #	9
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig	
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016	
Version:	19.00.00.50	www.bentley.com	Phone: 1-800-778-4277
File Name:	Belford IDC - ABUT.lbcx		

Span 3: From 13.12 ft To 25.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in	Srqt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	14.0	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	
			1454	13.6	2.6	36.0	9.8	0.00	0.00		
7.92	21.0	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	
			1460	20.9	2.6	27.2	9.8	0.00	0.00		
11.11	24.2	106.0	1455	4.7	2.6	36.0	9.8	0.00	0.00	0.00	
			1081	6.2	2.6	36.0	9.8	0.00	0.00		

Span 4: From 25.12 ft To 37.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in	Srqt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	26.0	106.0	1041	4.5	2.6	36.0	9.8	0.00	0.00	0.00	
			1495	6.7	2.6	36.0	9.8	0.00	0.00		
4.00	29.1	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	
			1490	18.0	2.6	32.4	9.8	0.00	0.00		
11.11	36.2	106.0	1492	8.3	2.6	36.0	9.8	0.00	0.00	0.00	
			1073	5.5	2.6	36.0	9.8	0.00	0.00		

Span 5: From 37.12 ft To 49.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in	Srqt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	38.0	106.0	1078	7.0	2.6	36.0	9.8	0.00	0.00	0.00	
			1487	6.7	2.6	36.0	9.8	0.00	0.00		
8.16	45.3	106.0	1072	1.5	2.6	36.0	9.8	0.00	0.00	0.00	
			1480	14.7	2.6	36.0	9.8	0.00	0.00		
11.11	48.2	106.0	1486	10.5	2.6	36.0	9.8	0.00	0.00	0.00	
			1066	2.4	2.6	36.0	9.8	0.00	0.00		

Span 6: From 49.12 ft To 61.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking		Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in	Srqt Srqb in	Sprt Sprb in	fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	50.0	106.0	1068	8.9	2.6	36.0	9.8	0.00	0.00	0.00	
			1477	3.0	2.6	36.0	9.8	0.00	0.00		
3.69	52.8	106.0	1068	1.3	2.6	36.0	9.8	0.00	0.00	0.00	
			1477	14.8	2.6	36.0	9.8	0.00	0.00		
11.11	60.2	106.0	1478	8.8	2.6	36.0	9.8	0.00	0.00	0.00	
			1060	5.3	2.6	36.0	9.8	0.00	0.00		



Sheet #	10
Job #	
Designed	
Date	Feb/24/2021
Checked	
Date	

Program: LEAP® Bridge Concrete CONNECT Edition

Felsburg Holt and Ullevig

Module: Substructure

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Version: 19.00.00.50

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Phone: 1-800-778-4277

File Name: Belford IDC - ABUT.lbcx

Span 7: From 61.12 ft To 73.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	62.0	106.0	1064	7.3	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			1474	6.3	2.6	36.0	9.8	0.00	0.00	0.00	0.00
7.91	69.0	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	0.00
			1057	17.1	2.6	34.4	9.8	0.00	0.00	0.00	0.00
11.11	72.2	106.0	1463	6.5	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			1048	4.8	2.6	36.0	9.8	0.00	0.00	0.00	0.00

Span 8: From 73.12 ft To 85.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	74.0	106.0	641	4.9	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			1876	6.2	2.6	36.0	9.8	0.00	0.00	0.00	0.00
4.02	77.1	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	0.00
			1878	19.8	2.6	29.0	9.8	0.00	0.00	0.00	0.00
11.11	84.2	106.0	1466	0.9	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			1039	11.4	2.6	36.0	9.8	0.00	0.00	0.00	0.00

Span 9: From 85.12 ft To 97.12 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	86.0	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	0.00
			1453	12.4	2.6	36.0	9.8	0.00	0.00	0.00	0.00
8.24	93.4	106.0	0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	0.00
			1039	13.1	2.6	36.0	9.8	0.00	0.00	0.00	0.00
11.11	96.2	106.0	1466	0.2	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			1039	2.6	2.6	36.0	9.8	0.00	0.00	0.00	0.00

Span 10: From 97.12 ft To 99.33 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking		Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range		Fatigue threshold	
				fs-t fs-b ksi	dc in			fs-t fs-b ksi	FTH-t FTH-b ksi		
0.89	98.0	106.0	441	0.1	2.6	36.0	9.8	0.00	0.00	0.00	0.00
			0	0.0	2.6	5.0	9.8	0.00	0.00	0.00	0.00



				Sheet #	11
				Job #	
Program:	LEAP® Bridge Concrete CONNECT Edition	Felsburg Holt and Ullevig		Designed	
Module:	Substructure	Copyright © Bentley Systems, Inc. 2016		Date	Feb/24/2021
Version:	19.00.00.50	www.bentley.com	Phone: 1-800-778-4277	Checked	
File Name:	Belford IDC - ABUT.lbcx			Date	

Cracking and fatigue Check : Notes

* Cracking / fatigue checking failed.
Required bar spacing, Sreq, should not be less than 5 in per Art. 5.7.3.4.

2.1.1 Design Calculations

NOTES:

Reference: Belford Ave Geotech Soils Report 032216

End Bearing Capacity = 40 ksf (in bedrock)
Side Friction Capacity = 3.6 ksf (in bedrock)
Min Req'd End Bearing Load = 10 ksf
Min Embed into Bedrock = 10 ft
Min L:D Ratio = 30 :1
Min CL to CL Shaft Spacing = 3 diameters

SAND (REESE):

	Effective Unit Weight (pcf)	Friction Angle (degree)	Non-Default, k, (pci)
Top of Layer	58	28	25
Bottom of Layer	58	30	25

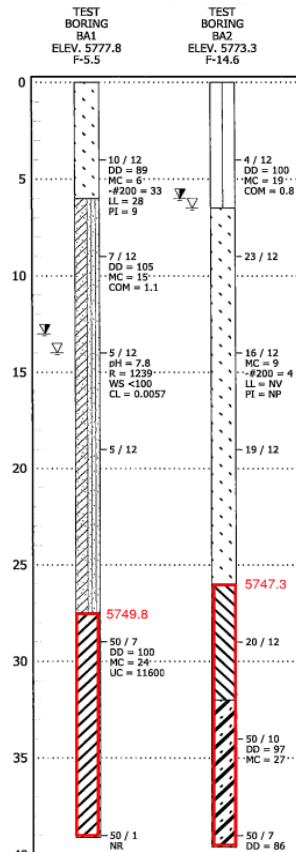
WEAK ROCK:

	Effective Unit Weight (pcf)	Initial Modulus of Rock Mass (psi)	Uniaxial Compressive Strength, q_u (psi)	Rock Quality Designation, RQD (%)	k_{rm}
Top of Layer	61	130	100	10	0.00005
Bottom of Layer	61	145	120	20	0.00005

Sand (Reese) EI Abut 1 = 5771.8
Sand (Reese) EI Pier 2 = 5769.3
Sand (Reese) EI Abut 3 = 5766.8

Bedrock EI Abut 1 = 5749.8
Bedrock EI Pier 2 = 5748.6
Bedrock EI Abut 3 = 5747.3

	To TOP	To BOTT
Sand (Reese)	0	20.8
Weak Rock	20.8	100



NOTES: By observation, the symmetry of the span lengths and the pinned-fixed-pinned support conditions precludes significant lateral loading of the pier shafts. Ergo, the pier shafts will be designed for axial loading only.

TOP OF COLUMN REACTIONS (RCPier):

Strength Envelope Fy-max = 1122.00 k
 Service Envelope Fy-max = 786.00 k

AXIAL DESIGN: Strength Limit State

Shaft Diameter = 4.00 ft
 Factored Tip Resistance = 40 ksf
 Factored Side Resistance = 3.6 ksf

 Top of Bedrock = 5747
 Tip Elev = 5724
 Bedrock Embed = 23.00 ft (increase to achieve appropriate Net Total Resistance)
 Net Side Resistance = 1040.5 k
 Net Tip Resistance = 502.7 k
 Net Total Resistance = 1543.2 k
 P_{u, max} = 1122.00 k **OK**

Check Minimum DL Pressure per Geotech: Assume Strength Limit State
 Conservatively neglect shaft weight.

Min. Req'd DL per Geotech = 10.00 ksf

 Min DC Reaction at Top of Shaft = 241 kips (factored)
 DW Reaction at Top of Shaft = 36 kips (factored)
 Total DL = 277 kips
 Total DL Pressure = 22.0 ksf **OK**

Reference: RCPier File - Pier 1.lbc
Under Analysis Tab, select Envelope Strength then Envelope Service, use Filter, check desired nodes.
All values rounded up to nearest whole number.

Top of Shaft Reactions from RCPier:

STRENGTH LOADS

Forces at Top of Drilled Shafts

Case 1 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	37.00	614.00	12.00	133.00	5.00	39,000	1,598,000	614,000

Case 2 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	20.00	1122.00	10.00	106.00	19.00	23,000	1,293,000	1,122,000

Case 3 - Fz Max (parallel with girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	18.00	793.00	31.00	506.00	15.00	36,000	6,075,000	793,000

Case 4 - Mx Max (about axis parallel to abutment)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	17.00	802.00	24.00	847.00	16.00	30,000	10,166,000	802,000

Case 5 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	18.00	442.00	11.00	124.00	85.00	22,000	1,805,000	442,000

SERVICE LOADS

Forces at Top of Drilled Shafts

Case 6 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	25.00	454.00	7.00	67.00	6.00	26,000	808,000	454,000

Case 7 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	15.00	786.00	5.00	52.00	12.00	16,000	641,000	786,000

Case 8 - Fz Max (parallel to girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	8.00	718.00	20.00	305.00	8.00	22,000	3,662,000	718,000

Case 9 - Mx Max (about axis parallel to abutment)

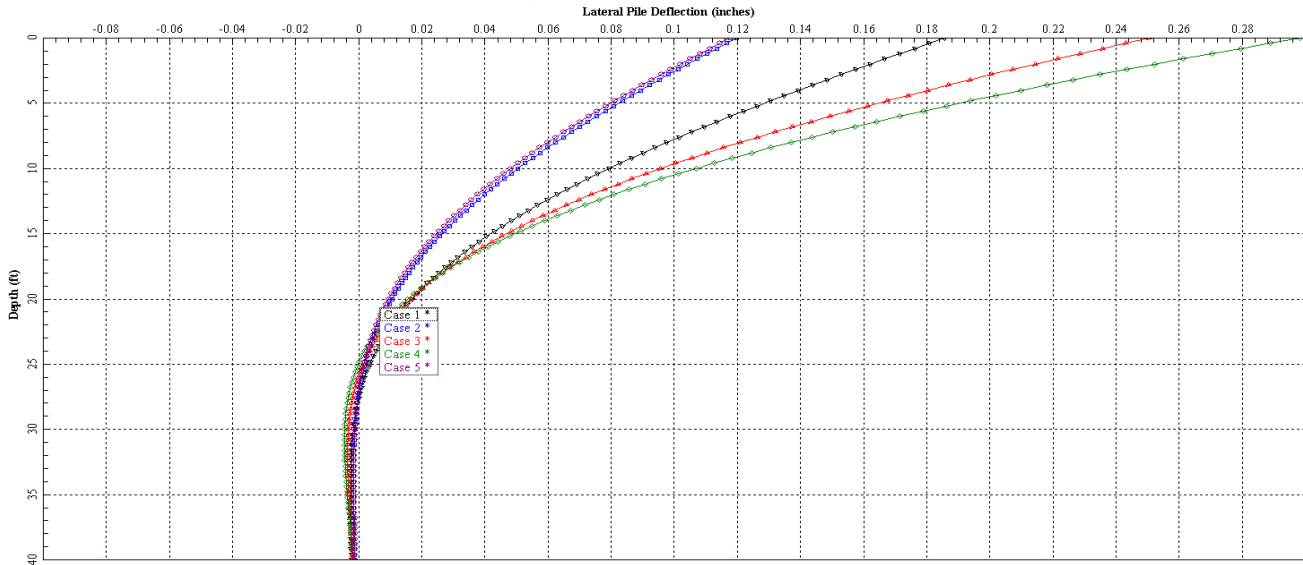
Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	8.00	712.00	16.00	500.00	9.00	18,000	6,001,000	712,000

Case 10 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	12.00	336.00	6.00	62.00	58.00	14,000	1,019,000	336,000

SERVICE CHECK: DEFLECTIONS

Say OK.



STRENGTH: REBAR DESIGN

Design rebar in L-Pile. Note that deflection is NOT a criteria here. Increase rebar to satisfy moment capacities as shown below using:

Strength Limit Sate Loading.
p-y multipliers as appropriate. Enter them in L-Pile.
Round Concrete Shaft (Bored Pile) with reinforcing.

From L-Pile Output:

Shaft Diam = 4 ft
No. of Bars = 18
Bars per Bundle = 1 (enter 1 for single bars)
No. of Bundles = 18
Size = #10
% Steel = 1.26%
Resistance Factor = 0.75 (AASHTO 5.5.4.2)

Cover = 3.5 in
Clearance Between Bars or Bundles = 5.66 in

Load No.	Max Moment in Shaft (lbs*inch)	Max Moment in Shaft (k*ft)	Axial Thrust (kips)	Nominal (Unfactored) Moment Capacity (k*inch)	Factored Moment Capacity (k*ft)	Ratio Prvd/Req	
1	5844482	487	614	33758	2110	4.33	OK!
2	3761226	313	1122	39153	2447	7.81	OK!
3	9362748	780	793	35896	2244	2.88	OK!
4	12571317	1048	802	35995	2250	2.15	OK!
5	4020908	335	442	31554	1972	5.89	OK!

Max Moment in Shaft comes from very tail end of report.

Moment Capacity is midway through report, Summary of Results for Nominal Moment Capacity.

2.1.2 L-Pile Output

LPIle Plus for Windows, Version 2013-07.007

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

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This copy of LPIle is used by:

JDJ
FHU Eng

Serial Number of Security Device: 158124184

This copy of LPIle is licensed for exclusive use by: Felsburg Holt & Ullevig,
Centenn

Use of this program by any entity other than Felsburg Holt & Ullevig, Centenn
is forbidden by the software license agreement.

Files Used for Analysis

Path to file locations: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: PIER - Service.lp7d
Name of output report file: PIER - Service.lp7o
Name of plot output file: PIER - Service.lp7p
Name of runtime message file: PIER - Service.lp7r

Date and Time of Analysis

Date: February 24, 2021 Time: 10:41:20

Problem Title

Project Name: Bel ford PIER - Service

Job Number: 115360

Client:

Engineer: JDJ

Description:

 Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

 Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 40.00 ft

Depth of ground surface below top of pile = 1.00 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	48.0000000
2	40.000000	48.0000000

PIER - Service.Ip7o

Input Structural Properties:

Pile Section No. 1:

Section Type	=	Elastic Pile
Cross-sectional Shape	=	Circular
Section Length	=	40.00000 ft
Top Width	=	48.00000 in
Bottom Width	=	48.00000 in
Top Area	=	1809.55737 Sq. in
Bottom Area	=	1809.55737 Sq. in
Moment of Inertia at Top	=	260576. in ⁴
Moment of Inertia at Bottom	=	260576. in ⁴
Elastic Modulus	=	3865202. lbs/in ²

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 2 layers

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

Distance from top of pile to top of layer	=	1.00000 ft
Distance from top of pile to bottom of layer	=	21.00000 ft
Effective unit weight at top of layer	=	58.00000 pcf
Effective unit weight at bottom of layer	=	58.00000 pcf
Friction angle at top of layer	=	28.00000 deg.
Friction angle at bottom of layer	=	30.00000 deg.
Subgrade k at top of layer	=	25.00000 pci
Subgrade k at bottom of layer	=	25.00000 pci

Layer 2 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	21.00000 ft
Distance from top of pile to bottom of layer	=	100.00000 ft
Effective unit weight at top of layer	=	61.00000 pcf
Effective unit weight at bottom of layer	=	61.00000 pcf
Uniaxial compressive strength at top of layer	=	100.00000 psi
Uniaxial compressive strength at bottom of layer	=	120.00000 psi
Initial modulus of rock at top of layer	=	130.00000 psi
Initial modulus of rock at bottom of layer	=	145.00000 psi
RQD of rock at top of layer	=	10.00000 %
RQD of rock at bottom of layer	=	20.00000 %
k _{rm} of rock at top of layer	=	0.0000500
k _{rm} of rock at bottom of layer	=	0.0000500

PIER - Service.Ip7o
 (Depth of lowest soil layer extends 60.00 ft below pile tip)

 Summary of Soil Properties

Uni axial Layer Num. psi	RQD % or (p-y Curve GSI	Layer Soil Type Criteria)	Rock Mass Rock Emass psi	Layer Depth ft	Effective Unit Wt. pcf	Angle of Friction deg.
1	Sand (Reese, et al.)			1.000	58.000	28.000
--	--	25.000	--	--	--	--
--	--	25.000	--	21.000	58.000	30.000
2	Weak Rock			21.000	61.000	--
100.000	10.000	--	130.000	5.00E-05	61.000	--
120.000	20.000	--	145.000	5.00E-05	61.000	--

 Loading Type

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

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 5

Load No.	Load Compute Type vs. Pile	Length	Condi ti on 1	Condi ti on 2	Axi al Thrust Force, lbs
1	1	V =	26000. lbs	M = 808000. in-lbs	454000.
2	No 1	V =	16000. lbs	M = 641000. in-lbs	786000.
3	No 1	V =	22000. lbs	M = 3662000. in-lbs	718000.
4	No 1	V =	18000. lbs	M = 6001000. in-lbs	712000.
5	No 1	V =	14000. lbs	M = 1019000. in-lbs	336000.

V = perpendicular shear force applied to pile head
 M = bending moment applied to pile head
 y = lateral deflection relative to pile axis
 S = pile slope relative to original pile batter angle
 R = rotational stiffness applied to pile head

PIER - Service.Ip7o

Axial thrust is assumed to be acting axially for all pile batter angles.

 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 26000.0 lbs
 Applied moment at pile head = 808000.0 in-lbs
 Axial thrust load on pile head = 454000.0 lbs

Depth Res.	Soil X Es*h feet lb/inch	Deflect. Spr. y Lat. Load inches lb/inch	Bending Distrib. Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi *	Bending Stiffness lb-in^2	Soil p lb/in
0.000	0.00	0.1857	808000.0000	26000.	-0.000994	325.3098	1.007E+12	
0.000	0.400	0.1809	934963.0000	26000.	-0.000990	337.0035	1.007E+12	
0.000	0.800	0.1762	1061916.0000	26000.	-0.000986	348.6963	1.007E+12	
-10.2890	1.200	0.1715	1188858.0000	25975.	-0.000980	360.3882	1.007E+12	
-30.0227	1.600	0.1668	1315551.0000	25879.	-0.000974	372.0570	1.007E+12	
-48.6395	2.000	0.1621	1441539.0000	25690.	-0.000968	383.6609	1.007E+12	
-66.1514	2.400	0.1575	1566390.0000	25414.	-0.000960	395.1602	1.007E+12	
-82.5720	2.800	0.1529	1689702.0000	25057.	-0.000953	406.5176	1.007E+12	
-97.9158	3.200	0.1484	1811093.0000	24624.	-0.000944	417.6982	1.007E+12	
-112.1991	3.600	0.1438	1930210.0000	24120.	-0.000935	428.6693	1.007E+12	
-125.4392	4.000	0.1394	2046721.0000	23550.	-0.000926	439.4004	1.007E+12	
-137.6547	4.400	0.1350	2160321.0000	22918.	-0.000916	449.8633	1.007E+12	
-148.8654	4.800	0.1306	2270727.0000	22230.	-0.000905	460.0321	1.007E+12	

			PIER - Service Ip7o				
	5. 200	0. 1263	2377680.	21491.	-0. 000894	469. 8829	1. 007E+12
-159.	0922	6048. 0000	0. 000				
	5. 600	0. 1220	2480942.	20706.	-0. 000883	479. 3937	1. 007E+12
-168.	3574	6624. 0000	0. 000				
	6. 000	0. 1178	2580300.	19877.	-0. 000871	488. 5449	1. 007E+12
-176.	6840	7200. 0000	0. 000				
	6. 400	0. 1136	2675560.	19012.	-0. 000858	497. 3187	1. 007E+12
-184.	0960	7776. 0000	0. 000				
	6. 800	0. 1096	2766551.	18112.	-0. 000845	505. 6993	1. 007E+12
-190.	6187	8352. 0000	0. 000				
	7. 200	0. 1055	2853121.	17184.	-0. 000832	513. 6727	1. 007E+12
-196.	2777	8928. 0000	0. 000				
	7. 600	0. 1016	2935140.	16230.	-0. 000818	521. 2269	1. 007E+12
-201.	1000	9504. 0000	0. 000				
	8. 000	0. 0977	3012494.	15255.	-0. 000804	528. 3515	1. 007E+12
-205.	1128	10080.	0. 000				
	8. 400	0. 0938	3085092.	14263.	-0. 000789	535. 0380	1. 007E+12
-208.	3443	10656.	0. 000				
	8. 800	0. 0901	3152857.	13257.	-0. 000774	541. 2794	1. 007E+12
-210.	8232	11232.	0. 000				
	9. 200	0. 0864	3215732.	12241.	-0. 000759	547. 0704	1. 007E+12
-212.	5787	11808.	0. 000				
	9. 600	0. 0828	3273676.	11218.	-0. 000744	552. 4072	1. 007E+12
-213.	6405	12384.	0. 000				
	10. 000	0. 0793	3326663.	10191.	-0. 000728	557. 2876	1. 007E+12
-214.	0387	12960.	0. 000				
	10. 400	0. 0758	3374685.	9164. 4089	-0. 000712	561. 7105	1. 007E+12
-213.	8036	13536.	0. 000				
	10. 800	0. 0724	3417745.	8140. 1624	-0. 000696	565. 6765	1. 007E+12
-212.	9658	14112.	0. 000				
	11. 200	0. 0691	3455863.	7121. 3095	-0. 000680	569. 1874	1. 007E+12
-211.	5562	14688.	0. 000				
	11. 600	0. 0659	3489071.	6110. 5210	-0. 000663	572. 2460	1. 007E+12
-209.	6057	15264.	0. 000				
	12. 000	0. 0628	3517414.	5110. 3190	-0. 000646	574. 8564	1. 007E+12
-207.	1452	15840.	0. 000				
	12. 400	0. 0597	3540947.	4123. 0770	-0. 000629	577. 0239	1. 007E+12
-204.	2057	16416.	0. 000				
	12. 800	0. 0567	3559739.	3151. 0201	-0. 000613	578. 7547	1. 007E+12
-200.	8180	16992.	0. 000				
	13. 200	0. 0538	3573867.	2196. 2256	-0. 000596	580. 0559	1. 007E+12
-197.	0130	17568.	0. 000				
	13. 600	0. 0510	3583418.	1260. 6237	-0. 000579	580. 9357	1. 007E+12
-192.	8211	18144.	0. 000				
	14. 000	0. 0483	3588490.	345. 9988	-0. 000561	581. 4028	1. 007E+12
-188.	2726	18720.	0. 000				
	14. 400	0. 0456	3589187.	-546. 0096	-0. 000544	581. 4669	1. 007E+12
-183.	3975	19296.	0. 000				
	14. 800	0. 0430	3585621.	-1413. 9048	-0. 000527	581. 1385	1. 007E+12
-178.	2255	19872.	0. 000				
	15. 200	0. 0406	3577911.	-2256. 3314	-0. 000510	580. 4284	1. 007E+12
-172.	7856	20448.	0. 000				
	15. 600	0. 0382	3566183.	-3072. 0732	-0. 000493	579. 3483	1. 007E+12
-167.	1068	21024.	0. 000				
	16. 000	0. 0358	3550568.	-3860. 0506	-0. 000476	577. 9101	1. 007E+12
-161.	2172	21600.	0. 000				
	16. 400	0. 0336	3531202.	-4619. 3185	-0. 000459	576. 1264	1. 007E+12
-155.	1445	22176.	0. 000				
	16. 800	0. 0314	3508225.	-5349. 0636	-0. 000443	574. 0101	1. 007E+12
-148.	9159	22752.	0. 000				
	17. 200	0. 0293	3481780.	-6048. 6010	-0. 000426	571. 5744	1. 007E+12
-142.	5580	23328.	0. 000				
	17. 600	0. 0273	3452014.	-6717. 3719	-0. 000409	568. 8329	1. 007E+12

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-136.0966	23904.	0.000				
18.000	0.0254	3419077.	-7354.9400	-0.000393	565.7992	1.007E+12
-129.5568	24480.	0.000				
18.400	0.0236	3383120.	-7960.9882	-0.000377	562.4874	1.007E+12
-122.9633	25056.	0.000				
18.800	0.0218	3344294.	-8535.3154	-0.000361	558.9114	1.007E+12
-116.3397	25632.	0.000				
19.200	0.0201	3302753.	-9077.8326	-0.000345	555.0853	1.007E+12
-109.7091	26208.	0.000				
19.600	0.0185	3258650.	-9588.5595	-0.000329	551.0233	1.007E+12
-103.0937	26784.	0.000				
20.000	0.0169	3212138.	-10068.	-0.000314	546.7394	1.007E+12
-96.5150	27360.	0.000				
20.400	0.0155	3163368.	-10515.	-0.000299	542.2475	1.007E+12
-89.9936	27936.	0.000				
20.800	0.0141	3112493.	-10932.	-0.000284	537.5617	1.007E+12
-83.5493	28512.	0.000				
21.200	0.0127	3059660.	-11556.	-0.000269	532.6956	1.007E+12
-176.7055	66579.	0.000				
21.600	0.0115	3002724.	-12411.	-0.000255	527.4516	1.007E+12
-179.2977	74946.	0.000				
22.000	0.0103	2941626.	-13270.	-0.000240	521.8243	1.007E+12
-178.7244	83322.	0.000				
22.400	0.009176	2876380.	-14120.	-0.000227	515.8149	1.007E+12
-175.3112	91707.	0.000				
22.800	0.008122	2807064.	-14947.	-0.000213	509.4307	1.007E+12
-169.3729	100102.	0.000				
23.200	0.007131	2733817.	-15740.	-0.000200	502.6843	1.007E+12
-161.2126	108508.	0.000				
23.600	0.006204	2656827.	-16490.	-0.000187	495.5933	1.007E+12
-151.1206	116922.	0.000				
24.000	0.005337	2576328.	-17187.	-0.000174	488.1791	1.007E+12
-139.3742	125347.	0.000				
24.400	0.004529	2492591.	-17825.	-0.000162	480.4666	1.007E+12
-126.2370	133781.	0.000				
24.800	0.003779	2405920.	-18396.	-0.000151	472.4838	1.007E+12
-111.9579	142225.	0.000				
25.200	0.003083	2316644.	-18897.	-0.000139	464.2612	1.007E+12
-96.7709	150679.	0.000				
25.600	0.002440	2225114.	-19324.	-0.000129	455.8310	1.007E+12
-80.8950	159142.	0.000				
26.000	0.001848	2131697.	-19673.	-0.000118	447.2270	1.007E+12
-64.5335	167615.	0.000				
26.400	0.001305	2036772.	-19942.	-0.000108	438.4840	1.007E+12
-47.8740	176098.	0.000				
26.800	0.000808	1940722.	-20132.	-9.882E-05	429.6375	1.007E+12
-31.0880	184591.	0.000				
27.200	0.000356	1843936.	-20241.	-8.980E-05	420.7231	1.007E+12
-14.3317	193093.	0.000				
27.600	-5.369E-05	1746800.	-20270.	-8.124E-05	411.7766	1.007E+12
2.2550	201605.	0.000				
28.000	-0.000424	1649699.	-20220.	-7.315E-05	402.8332	1.007E+12
18.5472	210127.	0.000				
28.400	-0.000756	1553007.	-20093.	-6.552E-05	393.9276	1.007E+12
34.4357	218658.	0.000				
28.800	-0.001053	1457093.	-19891.	-5.835E-05	385.0935	1.007E+12
49.8259	227199.	0.000				
29.200	-0.001316	1362312.	-19616.	-5.163E-05	376.3638	1.007E+12
64.6378	235750.	0.000				
29.600	-0.001548	1269005.	-19272.	-4.536E-05	367.7700	1.007E+12
78.8051	244311.	0.000				
30.000	-0.001751	1177502.	-18861.	-3.953E-05	359.3422	1.007E+12
92.2750	252881.	0.000				

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30.400	-0.001928	1088112.	-18388.	-3.413E-05	351.1090	1.007E+12	
105.0073	261461.	0.000					
30.800	-0.002079	1001130.	-17855.	-2.915E-05	343.0977	1.007E+12	
116.9735	270051.	0.000					
31.200	-0.002208	916833.	-17267.	-2.458E-05	335.3336	1.007E+12	
128.1566	278650.	0.000					
31.600	-0.002315	835479.	-16626.	-2.041E-05	327.8406	1.007E+12	
138.5496	287260.	0.000					
32.000	-0.002404	757308.	-15938.	-1.661E-05	320.6408	1.007E+12	
148.1550	295878.	0.000					
32.400	-0.002475	682543.	-15206.	-1.318E-05	313.7547	1.007E+12	
156.9839	304507.	0.000					
32.800	-0.002530	611388.	-14433.	-1.010E-05	307.2011	1.007E+12	
165.0548	313146.	0.000					
33.200	-0.002571	544029.	-13629.	-7.342E-06	300.9971	1.007E+12	
170.1246	317559.	0.000					
33.600	-0.002600	480585.	-12807.	-4.901E-06	295.1537	1.007E+12	
172.1432	317742.	0.000					
34.000	-0.002619	421102.	-11978.	-2.752E-06	289.6750	1.007E+12	
173.4359	317924.	0.000					
34.400	-0.002627	365610.	-11144.	-8.773E-07	284.5640	1.007E+12	
174.0916	318106.	0.000					
34.800	-0.002627	314125.	-10308.	7.424E-07	279.8221	1.007E+12	
174.1933	318289.	0.000					
35.200	-0.002620	266651.	-9472.6488	2.126E-06	275.4496	1.007E+12	
173.8182	318471.	0.000					
35.600	-0.002607	223179.	-8640.1949	3.294E-06	271.4456	1.007E+12	
173.0376	318653.	0.000					
36.000	-0.002588	183691.	-7812.3039	4.263E-06	267.8086	1.007E+12	
171.9169	318835.	0.000					
36.400	-0.002566	148162.	-6990.4658	5.054E-06	264.5363	1.007E+12	
170.5156	319018.	0.000					
36.800	-0.002540	116560.	-6175.8993	5.685E-06	261.6257	1.007E+12	
168.8871	319200.	0.000					
37.200	-0.002511	88848.	-5369.5799	6.174E-06	259.0733	1.007E+12	
167.0793	319382.	0.000					
37.600	-0.002480	64985.	-4572.2681	6.541E-06	256.8755	1.007E+12	
165.1340	319565.	0.000					
38.000	-0.002448	44926.	-3784.5372	6.803E-06	255.0279	1.007E+12	
163.0873	319747.	0.000					
38.400	-0.002415	28624.	-3006.8006	6.978E-06	253.5265	1.007E+12	
160.9696	319929.	0.000					
38.800	-0.002381	16030.	-2239.3396	7.084E-06	252.3665	1.007E+12	
158.8058	320111.	0.000					
39.200	-0.002347	7095.5429	-1482.3297	7.139E-06	251.5436	1.007E+12	
156.6150	320294.	0.000					
39.600	-0.002313	1768.9697	-735.8682	7.161E-06	251.0530	1.007E+12	
154.4107	320476.	0.000					
40.000	-0.002278	0.000	0.000	7.165E-06	250.8901	1.007E+12	
152.2011	160329.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.1857095 inches
 Computed slope at pile head = -0.0009945 radians
 Maximum bending moment = 3589187. inch-lbs
 Maximum shear force = 26000. lbs
 Depth of maximum bending moment = 14.4000000 feet below pile head
 Depth of maximum shear force = 0.8000000 feet below pile head
 Number of iterations = 6

Number of zero deflection points = 1

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 16000.0 lbs
 Applied moment at pile head = 641000.0 in-lbs
 Axial thrust load on pile head = 786000.0 lbs

Depth Res.	Deflect. Soil Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Sti ffness	Soil p
X	y	Moment	lbs	radi ans	psi *	lb-in^2	lb/in
Es*h	Lat. Load	in-lbs					
feet	inches						
lb/inch	lb/inch						
0.00	0.1197	641000.	16000.	-0.000651	493.3987	1.007E+12	
0.000	0.000	0.000					
0.400	0.1165	720252.	16000.	-0.000648	500.6981	1.007E+12	
0.000	0.000	0.000					
0.800	0.1134	799491.	16000.	-0.000645	507.9963	1.007E+12	
0.000	0.000	0.000					
1.200	0.1103	878716.	15984.	-0.000641	515.2932	1.007E+12	
-6.6208	288.0000	0.000					
1.600	0.1073	957772.	15922.	-0.000636	522.5746	1.007E+12	
-19.3106	864.0000	0.000					
2.000	0.1042	1036367.	15800.	-0.000631	529.8134	1.007E+12	
-31.2715	1440.0000	0.000					
2.400	0.1012	1114222.	15623.	-0.000626	536.9841	1.007E+12	
-42.5120	2016.0000	0.000					
2.800	0.0982	1191077.	15394.	-0.000621	544.0628	1.007E+12	
-53.0417	2592.0000	0.000					
3.200	0.0953	1266689.	15116.	-0.000615	551.0270	1.007E+12	
-62.8709	3168.0000	0.000					
3.600	0.0923	1340830.	14792.	-0.000609	557.8556	1.007E+12	
-72.0108	3744.0000	0.000					
4.000	0.0894	1413288.	14426.	-0.000602	564.5292	1.007E+12	
-80.4732	4320.0000	0.000					
4.400	0.0865	1483866.	14021.	-0.000595	571.0297	1.007E+12	
-88.2710	4896.0000	0.000					
4.800	0.0837	1552383.	13580.	-0.000588	577.3404	1.007E+12	
-95.4176	5472.0000	0.000					
5.200	0.0809	1618675.	13107.	-0.000581	583.4461	1.007E+12	
-101.9273	6048.0000	0.000					
5.600	0.0781	1682588.	12603.	-0.000573	589.3327	1.007E+12	
-107.8148	6624.0000	0.000					
6.000	0.0754	1743988.	12073.	-0.000564	594.9879	1.007E+12	
-113.0958	7200.0000	0.000					
6.400	0.0727	1802750.	11519.	-0.000556	600.4001	1.007E+12	
-117.7863	7776.0000	0.000					
6.800	0.0701	1858766.	10944.	-0.000547	605.5594	1.007E+12	
-121.9030	8352.0000	0.000					
7.200	0.0675	1911941.	10350.	-0.000538	610.4569	1.007E+12	
-125.4633	8928.0000	0.000					
7.600	0.0649	1962190.	9740.6418	-0.000529	615.0850	1.007E+12	
-128.4847	9504.0000	0.000					

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8.000	0.0624	2009443.	9117.9134	-0.000520	619.4372	1.007E+12	
-130.9855	10080.	0.000					
8.400	0.0599	2053642.	8484.3863	-0.000510	623.5081	1.007E+12	
-132.9842	10656.	0.000					
8.800	0.0575	2094741.	7842.4249	-0.000500	627.2935	1.007E+12	
-134.4997	11232.	0.000					
9.200	0.0551	2132703.	7194.3025	-0.000490	630.7899	1.007E+12	
-135.5513	11808.	0.000					
9.600	0.0528	2167504.	6542.1992	-0.000480	633.9952	1.007E+12	
-136.1584	12384.	0.000					
10.000	0.0505	2199128.	5888.2010	-0.000469	636.9079	1.007E+12	
-136.3408	12960.	0.000					
10.400	0.0483	2227572.	5234.2990	-0.000459	639.5276	1.007E+12	
-136.1184	13536.	0.000					
10.800	0.0461	2252839.	4582.3884	-0.000448	641.8549	1.007E+12	
-135.5111	14112.	0.000					
11.200	0.0440	2274944.	3934.2681	-0.000437	643.8908	1.007E+12	
-134.5391	14688.	0.000					
11.600	0.0419	2293908.	3291.6403	-0.000426	645.6375	1.007E+12	
-133.2225	15264.	0.000					
12.000	0.0399	2309762.	2656.1106	-0.000415	647.0976	1.007E+12	
-131.5816	15840.	0.000					
12.400	0.0379	2322542.	2029.1876	-0.000404	648.2747	1.007E+12	
-129.6364	16416.	0.000					
12.800	0.0360	2332293.	1412.2836	-0.000393	649.1729	1.007E+12	
-127.4070	16992.	0.000					
13.200	0.0341	2339068.	806.7150	-0.000382	649.7968	1.007E+12	
-124.9133	17568.	0.000					
13.600	0.0323	2342922.	213.7027	-0.000371	650.1518	1.007E+12	
-122.1752	18144.	0.000					
14.000	0.0306	2343919.	-365.6269	-0.000360	650.2436	1.007E+12	
-119.2122	18720.	0.000					
14.400	0.0289	2342127.	-930.2412	-0.000349	650.0786	1.007E+12	
-116.0437	19296.	0.000					
14.800	0.0272	2337620.	-1479.1996	-0.000338	649.6635	1.007E+12	
-112.6890	19872.	0.000					
15.200	0.0256	2330474.	-2011.6531	-0.000326	649.0053	1.007E+12	
-109.1667	20448.	0.000					
15.600	0.0241	2320771.	-2526.8422	-0.000315	648.1117	1.007E+12	
-105.4954	21024.	0.000					
16.000	0.0226	2308596.	-3024.0956	-0.000304	646.9903	1.007E+12	
-101.6935	21600.	0.000					
16.400	0.0212	2294036.	-3502.8283	-0.000293	645.6493	1.007E+12	
-97.7785	22176.	0.000					
16.800	0.0198	2277182.	-3962.5402	-0.000282	644.0970	1.007E+12	
-93.7681	22752.	0.000					
17.200	0.0185	2258127.	-4402.8136	-0.000272	642.3419	1.007E+12	
-89.6792	23328.	0.000					
17.600	0.0172	2236965.	-4823.3117	-0.000261	640.3928	1.007E+12	
-85.5284	23904.	0.000					
18.000	0.0159	2213792.	-5223.7761	-0.000250	638.2585	1.007E+12	
-81.3318	24480.	0.000					
18.400	0.0148	2188706.	-5604.0245	-0.000240	635.9480	1.007E+12	
-77.1051	25056.	0.000					
18.800	0.0136	2161804.	-5963.9489	-0.000229	633.4702	1.007E+12	
-72.8634	25632.	0.000					
19.200	0.0126	2133184.	-6303.5126	-0.000219	630.8342	1.007E+12	
-68.6215	26208.	0.000					
19.600	0.0115	2102944.	-6622.7482	-0.000209	628.0490	1.007E+12	
-64.3934	26784.	0.000					
20.000	0.0106	2071184.	-6921.7549	-0.000199	625.1237	1.007E+12	
-60.1928	27360.	0.000					
20.400	0.009628	2037999.	-7200.6962	-0.000189	622.0673	1.007E+12	

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-56.0328	27936.	0.000					
20.800	0.008742	2003486.	-7459.7969	-0.000180	618.8886	1.007E+12	
-51.9259	28512.	0.000					
21.200	0.007902	1967741.	-7847.4631	-0.000170	615.5963	1.007E+12	
-109.6017	66579.	0.000					
21.600	0.007107	1929436.	-8376.8120	-0.000161	612.0683	1.007E+12	
-110.9603	74946.	0.000					
22.000	0.006356	1888539.	-8907.9000	-0.000152	608.3015	1.007E+12	
-110.3264	83322.	0.000					
22.400	0.005648	1845066.	-9431.6638	-0.000143	604.2975	1.007E+12	
-107.9085	91707.	0.000					
22.800	0.004982	1799074.	-9940.0238	-0.000134	600.0615	1.007E+12	
-103.9082	100102.	0.000					
23.200	0.004358	1750656.	-10426.	-0.000126	595.6020	1.007E+12	
-98.5189	108508.	0.000					
23.600	0.003774	1699936.	-10883.	-0.000118	590.9305	1.007E+12	
-91.9262	116922.	0.000					
24.000	0.003228	1647068.	-11306.	-0.000110	586.0612	1.007E+12	
-84.3068	125347.	0.000					
24.400	0.002721	1592228.	-11690.	-0.000102	581.0102	1.007E+12	
-75.8284	133781.	0.000					
24.800	0.002249	1535611.	-12032.	-9.453E-05	575.7956	1.007E+12	
-66.6495	142225.	0.000					
25.200	0.001813	1477432.	-12329.	-8.735E-05	570.4371	1.007E+12	
-56.9186	150679.	0.000					
25.600	0.001411	1417915.	-12578.	-8.045E-05	564.9554	1.007E+12	
-46.7747	159142.	0.000					
26.000	0.001041	1357295.	-12777.	-7.384E-05	559.3720	1.007E+12	
-36.3465	167615.	0.000					
26.400	0.000702	1295812.	-12926.	-6.752E-05	553.7093	1.007E+12	
-25.7526	176098.	0.000					
26.800	0.000393	1233713.	-13024.	-6.149E-05	547.9898	1.007E+12	
-15.1016	184591.	0.000					
27.200	0.000112	1171244.	-13071.	-5.576E-05	542.2361	1.007E+12	
-4.4917	193093.	0.000					
27.600	-0.000143	1108651.	-13068.	-5.033E-05	536.4710	1.007E+12	
5.9888	201605.	0.000					
28.000	-0.000371	1046175.	-13014.	-4.519E-05	530.7168	1.007E+12	
16.2615	210127.	0.000					
28.400	-0.000576	984056.	-12912.	-4.035E-05	524.9954	1.007E+12	
26.2580	218658.	0.000					
28.800	-0.000759	922523.	-12763.	-3.581E-05	519.3280	1.007E+12	
35.9191	227199.	0.000					
29.200	-0.000920	861802.	-12568.	-3.156E-05	513.7354	1.007E+12	
45.1949	235750.	0.000					
29.600	-0.001062	802106.	-12330.	-2.759E-05	508.2372	1.007E+12	
54.0443	244311.	0.000					
30.000	-0.001185	743641.	-12051.	-2.391E-05	502.8524	1.007E+12	
62.4346	252881.	0.000					
30.400	-0.001291	686602.	-11732.	-2.050E-05	497.5988	1.007E+12	
70.3412	261461.	0.000					
30.800	-0.001382	631170.	-11376.	-1.736E-05	492.4934	1.007E+12	
77.7467	270051.	0.000					
31.200	-0.001458	577519.	-10987.	-1.448E-05	487.5519	1.007E+12	
84.6412	278650.	0.000					
31.600	-0.001521	525807.	-10565.	-1.185E-05	482.7891	1.007E+12	
91.0209	287260.	0.000					
32.000	-0.001572	476183.	-10114.	-9.465E-06	478.2185	1.007E+12	
96.8880	295878.	0.000					
32.400	-0.001612	428783.	-9636.2085	-7.308E-06	473.8528	1.007E+12	
102.2501	304507.	0.000					
32.800	-0.001642	383731.	-9133.7219	-5.372E-06	469.7033	1.007E+12	
107.1193	313146.	0.000					

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33.200	-0.001663	341140.	-8612.5278	-3.645E-06	465.7805	1.007E+12	
110.0448	317559.	0.000					
33.600	-0.001677	301078.	-8082.0014	-2.114E-06	462.0907	1.007E+12	
111.0078	317742.	0.000					
34.000	-0.001684	263568.	-7547.9451	-7.690E-07	458.6360	1.007E+12	
111.5157	317924.	0.000					
34.400	-0.001684	228624.	-7012.4089	4.039E-07	455.4174	1.007E+12	
111.6244	318106.	0.000					
34.800	-0.001680	196246.	-6477.1828	1.416E-06	452.4353	1.007E+12	
111.3864	318289.	0.000					
35.200	-0.001671	166432.	-5943.8147	2.281E-06	449.6893	1.007E+12	
110.8503	318471.	0.000					
35.600	-0.001658	139168.	-5413.6286	3.009E-06	447.1783	1.007E+12	
110.0606	318653.	0.000					
36.000	-0.001642	114438.	-4887.7424	3.613E-06	444.9005	1.007E+12	
109.0586	318835.	0.000					
36.400	-0.001623	92219.	-4367.0867	4.105E-06	442.8541	1.007E+12	
107.8813	319018.	0.000					
36.800	-0.001602	72483.	-3852.4219	4.498E-06	441.0363	1.007E+12	
106.5623	319200.	0.000					
37.200	-0.001580	55202.	-3344.3567	4.802E-06	439.4446	1.007E+12	
105.1315	319382.	0.000					
37.600	-0.001556	40341.	-2843.3656	5.030E-06	438.0759	1.007E+12	
103.6148	319565.	0.000					
38.000	-0.001532	27867.	-2349.8062	5.192E-06	436.9271	1.007E+12	
102.0349	319747.	0.000					
38.400	-0.001506	17744.	-1863.9370	5.301E-06	435.9946	1.007E+12	
100.4106	319929.	0.000					
38.800	-0.001481	9933.6171	-1385.9338	5.367E-06	435.2753	1.007E+12	
98.7574	320111.	0.000					
39.200	-0.001455	4398.4817	-915.9073	5.401E-06	434.7655	1.007E+12	
97.0870	320294.	0.000					
39.600	-0.001429	1100.1514	-453.9195	5.414E-06	434.4617	1.007E+12	
95.4079	320476.	0.000					
40.000	-0.001403	0.000	0.000	5.417E-06	434.3604	1.007E+12	
93.7252	160329.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.1196538 inches
 Computed slope at pile head = -0.0006515 radians
 Maximum bending moment = 2343919. inch-lbs
 Maximum shear force = 16000. lbs
 Depth of maximum bending moment = 14.000000 feet below pile head
 Depth of maximum shear force = 0.000000 feet below pile head
 Number of iterations = 6
 Number of zero deflection points = 1

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 22000.0 lbs
 Applied moment at pile head = 3662000.0 in-lbs
 Axial thrust load on pile head = 718000.0 lbs

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Depth Res.	Soil X	Deflect. Spr. y	Bending Distrib. Load	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
	Es*h	Lat. inches	in-lbs	lbs	radi ans	psi *	lb-in^2	lb/in
	feet							
	lb/inch	lb/inch						
0.000	0.00	0.2506	3662000.	22000.	-0.001559	734.0653	1.007E+12	
0.000	0.400	0.2432	3772944.	22000.	-0.001542	744.2837	1.007E+12	
0.000	0.800	0.2358	3883826.	22000.	-0.001523	754.4963	1.007E+12	
-13.7146	1.200	0.2286	3994644.	21967.	-0.001505	764.7030	1.007E+12	
-39.8522	1.600	0.2214	4105080.	21839.	-0.001485	774.8746	1.007E+12	
-64.2957	2.000	0.2143	4214531.	21589.	-0.001465	784.9554	1.007E+12	
-87.0800	2.400	0.2073	4322431.	21225.	-0.001445	794.8934	1.007E+12	
-108.2411	2.800	0.2004	4428254.	20756.	-0.001424	804.6401	1.007E+12	
-127.8161	3.200	0.1937	4531511.	20190.	-0.001403	814.1503	1.007E+12	
-145.8435	3.600	0.1870	4631748.	19533.	-0.001381	823.3825	1.007E+12	
-162.3625	4.000	0.1804	4728548.	18793.	-0.001359	832.2982	1.007E+12	
-177.4137	4.400	0.1739	4821530.	17978.	-0.001336	840.8622	1.007E+12	
-191.0383	4.800	0.1676	4910346.	17094.	-0.001313	849.0424	1.007E+12	
-203.2786	5.200	0.1613	4994679.	16147.	-0.001289	856.8098	1.007E+12	
-214.1778	5.600	0.1552	5074247.	15145.	-0.001265	864.1383	1.007E+12	
-223.7797	6.000	0.1492	5148796.	14094.	-0.001241	871.0046	1.007E+12	
-232.1287	6.400	0.1433	5218106.	13000.	-0.001216	877.3882	1.007E+12	
-239.2702	6.800	0.1375	5281981.	11869.	-0.001191	883.2713	1.007E+12	
-245.2498	7.200	0.1319	5340256.	10706.	-0.001166	888.6387	1.007E+12	
-250.1136	7.600	0.1263	5392794.	9517.1222	-0.001140	893.4776	1.007E+12	
-253.9081	8.000	0.1209	5439480.	8307.4700	-0.001114	897.7776	1.007E+12	
-256.6802	8.400	0.1156	5480227.	7082.0580	-0.001088	901.5305	1.007E+12	
-258.4767	8.800	0.1105	5514970.	5845.6814	-0.001062	904.7305	1.007E+12	
-259.3448	9.200	0.1054	5543667.	4602.9096	-0.001036	907.3736	1.007E+12	
-259.3316	9.600	0.1005	5566298.	3358.0861	-0.001009	909.4579	1.007E+12	
-258.4842	10.000	0.0957	5582862.	2115.3282	-0.000983	910.9835	1.007E+12	
-256.8493	10.400	0.0911	5593379.	878.5278	-0.000956	911.9522	1.007E+12	
		13536.	0.000					

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10.800	0.0866	5597886.	-348.6478	-0.000929	912.3674	1.007E+12
-254.4738	14112.	0.000				
11.200	0.0822	5596439.	-1562.7548	-0.000903	912.2340	1.007E+12
-251.4041	14688.	0.000				
11.600	0.0779	5589107.	-2760.5709	-0.000876	911.5587	1.007E+12
-247.6860	15264.	0.000				
12.000	0.0737	5575977.	-3939.0936	-0.000850	910.3494	1.007E+12
-243.3651	15840.	0.000				
12.400	0.0697	5557147.	-5095.5376	-0.000823	908.6152	1.007E+12
-238.4865	16416.	0.000				
12.800	0.0658	5532732.	-6227.3322	-0.000797	906.3664	1.007E+12
-233.0946	16992.	0.000				
13.200	0.0621	5502856.	-7332.1181	-0.000770	903.6147	1.007E+12
-227.2329	17568.	0.000				
13.600	0.0585	5467654.	-8407.7443	-0.000744	900.3724	1.007E+12
-220.9446	18144.	0.000				
14.000	0.0549	5427271.	-9452.2640	-0.000718	896.6531	1.007E+12
-214.2719	18720.	0.000				
14.400	0.0516	5381862.	-10464.	-0.000692	892.4708	1.007E+12
-207.2559	19296.	0.000				
14.800	0.0483	5331590.	-11441.	-0.000667	887.8405	1.007E+12
-199.9372	19872.	0.000				
15.200	0.0452	5276624.	-12383.	-0.000642	882.7779	1.007E+12
-192.3551	20448.	0.000				
15.600	0.0421	5217139.	-13287.	-0.000617	877.2992	1.007E+12
-184.5480	21024.	0.000				
16.000	0.0392	5153316.	-14154.	-0.000592	871.4209	1.007E+12
-176.5534	21600.	0.000				
16.400	0.0365	5085341.	-14982.	-0.000568	865.1601	1.007E+12
-168.4073	22176.	0.000				
16.800	0.0338	5013403.	-15770.	-0.000543	858.5343	1.007E+12
-160.1448	22752.	0.000				
17.200	0.0312	4937692.	-16519.	-0.000520	851.5611	1.007E+12
-151.8000	23328.	0.000				
17.600	0.0288	4858403.	-17227.	-0.000496	844.2583	1.007E+12
-143.4053	23904.	0.000				
18.000	0.0265	4775730.	-17896.	-0.000473	836.6438	1.007E+12
-134.9922	24480.	0.000				
18.400	0.0243	4689868.	-18523.	-0.000451	828.7356	1.007E+12
-126.5909	25056.	0.000				
18.800	0.0221	4601013.	-19111.	-0.000429	820.5517	1.007E+12
-118.2302	25632.	0.000				
19.200	0.0201	4509358.	-19659.	-0.000407	812.1100	1.007E+12
-109.9376	26208.	0.000				
19.600	0.0182	4415096.	-20167.	-0.000386	803.4281	1.007E+12
-101.7393	26784.	0.000				
20.000	0.0164	4318417.	-20636.	-0.000365	794.5237	1.007E+12
-93.6601	27360.	0.000				
20.400	0.0147	4219509.	-21066.	-0.000345	785.4139	1.007E+12
-85.7236	27936.	0.000				
20.800	0.0131	4118557.	-21459.	-0.000325	776.1159	1.007E+12
-77.9519	28512.	0.000				
21.200	0.0116	4015742.	-22033.	-0.000305	766.6462	1.007E+12
-161.0598	66579.	0.000				
21.600	0.0102	3909150.	-22801.	-0.000286	756.8287	1.007E+12
-159.1290	74946.	0.000				
22.000	0.008861	3798827.	-23552.	-0.000268	746.6676	1.007E+12
-153.8188	83322.	0.000				
22.400	0.007618	3684897.	-24271.	-0.000250	736.1743	1.007E+12
-145.5410	91707.	0.000				
22.800	0.006458	3567554.	-24943.	-0.000233	725.3666	1.007E+12
-134.6892	100102.	0.000				
23.200	0.005381	3447050.	-25558.	-0.000216	714.2676	1.007E+12

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-121.6379	108508.	0.000					
23.600	0.004382	3323686.	-26106.	-0.000200	702.9054	1.007E+12	
-106.7421	116922.	0.000					
24.000	0.003459	3197808.	-26579.	-0.000185	691.3116	1.007E+12	
-90.3369	125347.	0.000					
24.400	0.002610	3069796.	-26971.	-0.000170	679.5212	1.007E+12	
-72.7366	133781.	0.000					
24.800	0.001830	2940058.	-27276.	-0.000155	667.5719	1.007E+12	
-54.2350	142225.	0.000					
25.200	0.001118	2809022.	-27490.	-0.000142	655.5030	1.007E+12	
-35.1047	150679.	0.000					
25.600	0.000470	2677131.	-27612.	-0.000129	643.3554	1.007E+12	
-15.5974	159142.	0.000					
26.000	-0.000116	2544837.	-27639.	-0.000116	631.1706	1.007E+12	
4.0562	167615.	0.000					
26.400	-0.000645	2412594.	-27573.	-0.000104	618.9906	1.007E+12	
23.6465	176098.	0.000					
26.800	-0.001118	2280856.	-27413.	-9.315E-05	606.8571	1.007E+12	
42.9844	184591.	0.000					
27.200	-0.001539	2150072.	-27161.	-8.259E-05	594.8114	1.007E+12	
61.9010	193093.	0.000					
27.600	-0.001911	2020678.	-26820.	-7.265E-05	582.8938	1.007E+12	
80.2474	201605.	0.000					
28.000	-0.002236	1893100.	-26392.	-6.333E-05	571.1434	1.007E+12	
97.8935	210127.	0.000					
28.400	-0.002519	1767747.	-25882.	-5.460E-05	559.5979	1.007E+12	
114.7283	218658.	0.000					
28.800	-0.002760	1645008.	-25293.	-4.647E-05	548.2932	1.007E+12	
130.6582	227199.	0.000					
29.200	-0.002965	1525252.	-24630.	-3.892E-05	537.2632	1.007E+12	
145.6067	235750.	0.000					
29.600	-0.003134	1408826.	-23898.	-3.192E-05	526.5400	1.007E+12	
159.5134	244311.	0.000					
30.000	-0.003271	1296051.	-23102.	-2.548E-05	516.1531	1.007E+12	
172.3330	252881.	0.000					
30.400	-0.003379	1187227.	-22246.	-1.956E-05	506.1299	1.007E+12	
184.0341	261461.	0.000					
30.800	-0.003459	1082622.	-21338.	-1.415E-05	496.4955	1.007E+12	
194.5986	270051.	0.000					
31.200	-0.003514	982484.	-20381.	-9.231E-06	487.2724	1.007E+12	
204.0199	278650.	0.000					
31.600	-0.003547	887030.	-19382.	-4.776E-06	478.4807	1.007E+12	
212.3025	287260.	0.000					
32.000	-0.003560	796453.	-18345.	-7.645E-07	470.1383	1.007E+12	
219.4602	295878.	0.000					
32.400	-0.003555	710919.	-17277.	2.827E-06	462.2603	1.007E+12	
225.5152	304507.	0.000					
32.800	-0.003533	630570.	-16183.	6.024E-06	454.8598	1.007E+12	
230.4968	313146.	0.000					
33.200	-0.003497	555520.	-15075.	8.850E-06	447.9475	1.007E+12	
231.3556	317559.	0.000					
33.600	-0.003448	485792.	-13972.	1.133E-05	441.5253	1.007E+12	
228.2557	317742.	0.000					
34.000	-0.003388	421315.	-12885.	1.349E-05	435.5868	1.007E+12	
224.4160	317924.	0.000					
34.400	-0.003319	362002.	-11819.	1.536E-05	430.1238	1.007E+12	
219.9330	318106.	0.000					
34.800	-0.003241	307750.	-10775.	1.696E-05	425.1270	1.007E+12	
214.8957	318289.	0.000					
35.200	-0.003156	258444.	-9756.8354	1.830E-05	420.5857	1.007E+12	
209.3853	318471.	0.000					
35.600	-0.003065	213958.	-8765.9684	1.943E-05	416.4884	1.007E+12	
203.4760	318653.	0.000					

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36.000	-0.002969	174157.	-7804.2629	2.036E-05	412.8226	1.007E+12	
197.2347	318835.	0.000					
36.400	-0.002870	138897.	-6873.1687	2.110E-05	409.5750	1.007E+12	
190.7213	319018.	0.000					
36.800	-0.002767	108029.	-5973.8639	2.169E-05	406.7320	1.007E+12	
183.9890	319200.	0.000					
37.200	-0.002661	81398.	-5107.2872	2.214E-05	404.2792	1.007E+12	
177.0846	319382.	0.000					
37.600	-0.002554	58846.	-4274.1688	2.248E-05	402.2021	1.007E+12	
170.0481	319565.	0.000					
38.000	-0.002446	40211.	-3475.0601	2.271E-05	400.4857	1.007E+12	
162.9138	319747.	0.000					
38.400	-0.002336	25329.	-2710.3628	2.287E-05	399.1150	1.007E+12	
155.7100	319929.	0.000					
38.800	-0.002226	14034.	-1980.3565	2.296E-05	398.0747	1.007E+12	
148.4592	320111.	0.000					
39.200	-0.002116	6159.5309	-1285.2255	2.301E-05	397.3494	1.007E+12	
141.1787	320294.	0.000					
39.600	-0.002005	1537.4766	-625.0838	2.303E-05	396.9237	1.007E+12	
133.8803	320476.	0.000					
40.000	-0.001895	0.000	0.000	2.303E-05	396.7821	1.007E+12	
126.5712	160329.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection	=	0.2506439 inches
Computed slope at pile head	=	-0.0015593 radians
Maximum bending moment	=	5597886. inch-lbs
Maximum shear force	=	-27639. lbs
Depth of maximum bending moment	=	10.8000000 feet below pile head
Depth of maximum shear force	=	26.0000000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	1

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	18000.0 lbs
Applied moment at pile head	=	6001000.0 in-lbs
Axial thrust load on pile head	=	712000.0 lbs

Depth Res.	Soil X	Deflect. Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
	Es*h	y	Moment	lbs	radians	psi *	lb-in^2	lb/in
	feet	inches	in-lbs					
	lb/inch	lb/inch						
0.000	0.00	0.2984	6001000.	18000.	-0.001994	946.1798	1.007E+12	
0.000	0.400	0.2889	6094167.	18000.	-0.001965	954.7608	1.007E+12	
0.000	0.800	0.2795	6187234.	18000.	-0.001936	963.3327	1.007E+12	

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0.000	0.000	0.000					
1.200	0.2703	6280201.	17963.	-0.001906	971.8952	1.007E+12	
-15.3191	272.0236	0.000					
1.600	0.2612	6372713.	17814.	-0.001876	980.4159	1.007E+12	
-46.9080	861.9009	0.000					
2.000	0.2523	6464040.	17520.	-0.001846	988.8274	1.007E+12	
-75.6904	1440.0000	0.000					
2.400	0.2435	6553517.	17093.	-0.001815	997.0686	1.007E+12	
-102.2766	2016.0000	0.000					
2.800	0.2349	6640532.	16543.	-0.001783	1005.0830	1.007E+12	
-126.8351	2592.0000	0.000					
3.200	0.2264	6724516.	15880.	-0.001751	1012.8182	1.007E+12	
-149.4214	3168.0000	0.000					
3.600	0.2181	6804948.	15113.	-0.001719	1020.2263	1.007E+12	
-170.0915	3744.0000	0.000					
4.000	0.2099	6881350.	14251.	-0.001687	1027.2632	1.007E+12	
-188.9025	4320.0000	0.000					
4.400	0.2019	6953288.	13304.	-0.001654	1033.8889	1.007E+12	
-205.9123	4896.0000	0.000					
4.800	0.1940	7020368.	12279.	-0.001620	1040.0673	1.007E+12	
-221.1793	5472.0000	0.000					
5.200	0.1863	7082238.	11184.	-0.001587	1045.7657	1.007E+12	
-234.7627	6048.0000	0.000					
5.600	0.1788	7138584.	10029.	-0.001553	1050.9554	1.007E+12	
-246.7224	6624.0000	0.000					
6.000	0.1714	7189129.	8819.6131	-0.001519	1055.6107	1.007E+12	
-257.1186	7200.0000	0.000					
6.400	0.1642	7233633.	7564.0998	-0.001484	1059.7097	1.007E+12	
-266.0119	7776.0000	0.000					
6.800	0.1572	7271890.	6269.3589	-0.001450	1063.2333	1.007E+12	
-273.4634	8352.0000	0.000					
7.200	0.1503	7303728.	4942.1647	-0.001415	1066.1657	1.007E+12	
-279.5342	8928.0000	0.000					
7.600	0.1436	7329007.	3588.9971	-0.001380	1068.4940	1.007E+12	
-284.2856	9504.0000	0.000					
8.000	0.1370	7347616.	2216.0418	-0.001345	1070.2080	1.007E+12	
-287.7791	10080.	0.000					
8.400	0.1307	7359476.	829.1900	-0.001310	1071.3002	1.007E+12	
-290.0759	10656.	0.000					
8.800	0.1245	7364532.	-565.9611	-0.001275	1071.7659	1.007E+12	
-291.2371	11232.	0.000					
9.200	0.1184	7362758.	-1964.1070	-0.001240	1071.6025	1.007E+12	
-291.3237	11808.	0.000					
9.600	0.1126	7354152.	-3360.2346	-0.001205	1070.8099	1.007E+12	
-290.3962	12384.	0.000					
10.000	0.1069	7338735.	-4749.6205	-0.001170	1069.3900	1.007E+12	
-288.5146	12960.	0.000					
10.400	0.1013	7316552.	-6127.8285	-0.001135	1067.3468	1.007E+12	
-285.7387	13536.	0.000					
10.800	0.0960	7287666.	-7490.7068	-0.001100	1064.6863	1.007E+12	
-282.1273	14112.	0.000					
11.200	0.0908	7252161.	-8834.3847	-0.001066	1061.4162	1.007E+12	
-277.7386	14688.	0.000					
11.600	0.0857	7210138.	-10155.	-0.001031	1057.5458	1.007E+12	
-272.6301	15264.	0.000					
12.000	0.0809	7161717.	-11450.	-0.000997	1053.0860	1.007E+12	
-266.8583	15840.	0.000					
12.400	0.0762	7107031.	-12716.	-0.000963	1048.0492	1.007E+12	
-260.4788	16416.	0.000					
12.800	0.0716	7046228.	-13949.	-0.000929	1042.4491	1.007E+12	
-253.5462	16992.	0.000					
13.200	0.0672	6979468.	-15148.	-0.000896	1036.3002	1.007E+12	
-246.1139	17568.	0.000					

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13.600	0.0630	6906925.	-16311.	-0.000863	1029.6187	1.007E+12
-238.2342	18144.	0.000				
14.000	0.0590	6828779.	-17435.	-0.000830	1022.4212	1.007E+12
-229.9580	18720.	0.000				
14.400	0.0551	6745225.	-18518.	-0.000797	1014.7256	1.007E+12
-221.3351	19296.	0.000				
14.800	0.0513	6656460.	-19559.	-0.000766	1006.5501	1.007E+12
-212.4138	19872.	0.000				
15.200	0.0477	6562694.	-20556.	-0.000734	997.9138	1.007E+12
-203.2410	20448.	0.000				
15.600	0.0443	6464138.	-21509.	-0.000703	988.8365	1.007E+12
-193.8621	21024.	0.000				
16.000	0.0410	6361010.	-22417.	-0.000672	979.3380	1.007E+12
-184.3210	21600.	0.000				
16.400	0.0378	6253531.	-23279.	-0.000642	969.4389	1.007E+12
-174.6600	22176.	0.000				
16.800	0.0348	6141927.	-24093.	-0.000613	959.1597	1.007E+12
-164.9199	22752.	0.000				
17.200	0.0319	6026423.	-24862.	-0.000584	948.5214	1.007E+12
-155.1397	23328.	0.000				
17.600	0.0292	5907246.	-25583.	-0.000555	937.5448	1.007E+12
-145.3570	23904.	0.000				
18.000	0.0266	5784624.	-26257.	-0.000528	926.2508	1.007E+12
-135.6073	24480.	0.000				
18.400	0.0241	5658783.	-26885.	-0.000500	914.6605	1.007E+12
-125.9248	25056.	0.000				
18.800	0.0218	5529949.	-27466.	-0.000474	902.7944	1.007E+12
-116.3417	25632.	0.000				
19.200	0.0196	5398345.	-28002.	-0.000448	890.6731	1.007E+12
-106.8884	26208.	0.000				
19.600	0.0175	5264189.	-28493.	-0.000422	878.3170	1.007E+12
-97.5938	26784.	0.000				
20.000	0.0155	5127700.	-28939.	-0.000397	865.7458	1.007E+12
-88.4848	27360.	0.000				
20.400	0.0137	4989088.	-29343.	-0.000373	852.9791	1.007E+12
-79.5865	27936.	0.000				
20.800	0.0119	4848561.	-29704.	-0.000350	840.0361	1.007E+12
-70.9225	28512.	0.000				
21.200	0.0103	4706322.	-30218.	-0.000327	826.9353	1.007E+12
-143.0885	66579.	0.000				
21.600	0.008800	4560708.	-30891.	-0.000305	813.5238	1.007E+12
-137.3939	74946.	0.000				
22.000	0.007388	4411855.	-31528.	-0.000284	799.8140	1.007E+12
-128.2394	83322.	0.000				
22.400	0.006077	4259976.	-32115.	-0.000263	785.8253	1.007E+12
-116.0977	91707.	0.000				
22.800	0.004863	4105352.	-32637.	-0.000243	771.5839	1.007E+12
-101.4172	100102.	0.000				
23.200	0.003743	3948325.	-33083.	-0.000224	757.1211	1.007E+12
-84.6219	108508.	0.000				
23.600	0.002714	3789284.	-33445.	-0.000205	742.4729	1.007E+12
-66.1108	116922.	0.000				
24.000	0.001771	3628657.	-33715.	-0.000188	727.6786	1.007E+12
-46.2577	125347.	0.000				
24.400	0.000912	3466906.	-33887.	-0.000171	712.7808	1.007E+12
-25.4109	133781.	0.000				
24.800	0.000131	3304513.	-33957.	-0.000155	697.8238	1.007E+12
-3.8931	142225.	0.000				
25.200	-0.000573	3141977.	-33923.	-0.000139	682.8536	1.007E+12
17.9985	150679.	0.000				
25.600	-0.001206	2979804.	-33784.	-0.000125	667.9169	1.007E+12
39.9921	159142.	0.000				
26.000	-0.001771	2818503.	-33540.	-0.000111	653.0606	1.007E+12

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61. 8408	167615.	0. 000					
26. 400	-0. 002271	2658582.	-33191.	-9. 788E-05	638. 3313	1. 007E+12	
83. 3226	176098.	0. 000					
26. 800	-0. 002711	2500537.	-32741.	-8. 559E-05	623. 7748	1. 007E+12	
104. 2393	184591.	0. 000					
27. 200	-0. 003093	2344854.	-32192.	-7. 404E-05	609. 4357	1. 007E+12	
124. 4161	193093.	0. 000					
27. 600	-0. 003421	2191998.	-31549.	-6. 323E-05	595. 3572	1. 007E+12	
143. 7011	201605.	0. 000					
28. 000	-0. 003700	2042418.	-30815.	-5. 314E-05	581. 5803	1. 007E+12	
161. 9639	210127.	0. 000					
28. 400	-0. 003932	1896536.	-29997.	-4. 375E-05	568. 1441	1. 007E+12	
179. 0950	218658.	0. 000					
28. 800	-0. 004120	1754749.	-29099.	-3. 505E-05	555. 0850	1. 007E+12	
195. 0047	227199.	0. 000					
29. 200	-0. 004268	1617427.	-28128.	-2. 702E-05	542. 4372	1. 007E+12	
209. 6218	235750.	0. 000					
29. 600	-0. 004379	1484908.	-27090.	-1. 962E-05	530. 2317	1. 007E+12	
222. 8926	244311.	0. 000					
30. 000	-0. 004456	1357501.	-25991.	-1. 285E-05	518. 4970	1. 007E+12	
234. 7795	252881.	0. 000					
30. 400	-0. 004503	1235481.	-24839.	-6. 673E-06	507. 2585	1. 007E+12	
245. 2597	261461.	0. 000					
30. 800	-0. 004520	1119091.	-23640.	-1. 062E-06	496. 5386	1. 007E+12	
254. 3242	270051.	0. 000					
31. 200	-0. 004513	1008543.	-22401.	4. 008E-06	486. 3567	1. 007E+12	
261. 9757	278650.	0. 000					
31. 600	-0. 004482	904014.	-21129.	8. 565E-06	476. 7293	1. 007E+12	
268. 2280	287260.	0. 000					
32. 000	-0. 004431	805650.	-19829.	1. 264E-05	467. 6696	1. 007E+12	
273. 1042	295878.	0. 000					
32. 400	-0. 004361	713566.	-18510.	1. 626E-05	459. 1884	1. 007E+12	
276. 6354	304507.	0. 000					
32. 800	-0. 004274	627844.	-17177.	1. 946E-05	451. 2930	1. 007E+12	
278. 8590	313146.	0. 000					
33. 200	-0. 004174	548536.	-15845.	2. 226E-05	443. 9885	1. 007E+12	
276. 1362	317559.	0. 000					
33. 600	-0. 004061	475582.	-14537.	2. 470E-05	437. 2692	1. 007E+12	
268. 8067	317742.	0. 000					
34. 000	-0. 003937	408813.	-13266.	2. 681E-05	431. 1195	1. 007E+12	
260. 7481	317924.	0. 000					
34. 400	-0. 003803	348045.	-12035.	2. 861E-05	425. 5226	1. 007E+12	
252. 0603	318106.	0. 000					
34. 800	-0. 003662	293079.	-10847.	3. 014E-05	420. 4600	1. 007E+12	
242. 8344	318289.	0. 000					
35. 200	-0. 003514	243703.	-9705. 1182	3. 142E-05	415. 9123	1. 007E+12	
233. 1529	318471.	0. 000					
35. 600	-0. 003360	199695.	-8610. 1350	3. 247E-05	411. 8590	1. 007E+12	
223. 0901	318653.	0. 000					
36. 000	-0. 003202	160824.	-7564. 2094	3. 333E-05	408. 2789	1. 007E+12	
212. 7122	318835.	0. 000					
36. 400	-0. 003040	126851.	-6568. 7134	3. 402E-05	405. 1498	1. 007E+12	
202. 0778	319018.	0. 000					
36. 800	-0. 002876	97532.	-5624. 7553	3. 455E-05	402. 4494	1. 007E+12	
191. 2381	319200.	0. 000					
37. 200	-0. 002709	72617.	-4733. 2140	3. 496E-05	400. 1547	1. 007E+12	
180. 2374	319382.	0. 000					
37. 600	-0. 002540	51854.	-3894. 7717	3. 526E-05	398. 2423	1. 007E+12	
169. 1135	319565.	0. 000					
38. 000	-0. 002370	34986.	-3109. 9447	3. 546E-05	396. 6888	1. 007E+12	
157. 8978	319747.	0. 000					
38. 400	-0. 002200	21756.	-2379. 1122	3. 560E-05	395. 4702	1. 007E+12	
146. 6158	319929.	0. 000					

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38.800	-0.002029	11904.	-1702.5440	3.568E-05	394.5628	1.007E+12	
135.2876	320111.	0.000					
39.200	-0.001857	5167.9163	-1080.4258	3.572E-05	393.9424	1.007E+12	
123.9283	320294.	0.000					
39.600	-0.001686	1287.4146	-512.8824	3.573E-05	393.5850	1.007E+12	
112.5481	320476.	0.000					
40.000	-0.001514	0.000	0.000	3.574E-05	393.4664	1.007E+12	
101.1529	160329.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection	=	0.2984056 inches
Computed slope at pile head	=	-0.0019943 radians
Maximum bending moment	=	7364532. inch-lbs
Maximum shear force	=	-33957. lbs
Depth of maximum bending moment	=	8.8000000 feet below pile head
Depth of maximum shear force	=	24.8000000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	1

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	14000.0 lbs
Applied moment at pile head	=	1019000.0 in-lbs
Axial thrust load on pile head	=	336000.0 lbs

Depth Res.	Soil X	Deflect. Soil Spr.	Bending Distrib. Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	Lat. y	Load	lbs	radians	psi *	lb-in^2	lb/in
lb/inch	lb/inch	lb/inch	in-lbs					
0.000	0.00	0.1177	1019000.	14000.	-0.000673	279.5343	1.007E+12	
		0.000	0.000					
0.000	0.400	0.1145	1087281.	14000.	-0.000668	285.8232	1.007E+12	
		0.000	0.000					
0.000	0.800	0.1113	1155553.	14000.	-0.000662	292.1113	1.007E+12	
		0.000	0.000					
-6.4866	1.200	0.1081	1223817.	13984.	-0.000656	298.3986	1.007E+12	
		288.0000	0.000					
-18.8952	1.600	0.1050	1291921.	13924.	-0.000650	304.6713	1.007E+12	
		864.0000	0.000					
-30.5598	2.000	0.1019	1359581.	13805.	-0.000644	310.9030	1.007E+12	
		1440.0000	0.000					
-41.4915	2.400	0.0988	1426525.	13632.	-0.000638	317.0688	1.007E+12	
		2016.0000	0.000					
-51.7026	2.800	0.0957	1492503.	13408.	-0.000631	323.1456	1.007E+12	
		2592.0000	0.000					
-61.2056	3.200	0.0927	1557278.	13137.	-0.000623	329.1116	1.007E+12	
		3168.0000	0.000					
	3.600	0.0898	1620631.	12822.	-0.000616	334.9467	1.007E+12	

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-70.0141	3744.0000	0.000	0.000				
	4.000	0.0868	1682359.	12467.	-0.000608	340.6320	1.007E+12
-78.1422	4320.0000	0.000	0.000				
	4.400	0.0839	1742273.	12074.	-0.000600	346.1503	1.007E+12
-85.6047	4896.0000	0.000	0.000				
	4.800	0.0811	1800201.	11647.	-0.000591	351.4857	1.007E+12
-92.4170	5472.0000	0.000	0.000				
	5.200	0.0783	1855987.	11188.	-0.000583	356.6237	1.007E+12
-98.5950	6048.0000	0.000	0.000				
	5.600	0.0755	1909486.	10701.	-0.000574	361.5512	1.007E+12
-104.1555	6624.0000	0.000	0.000				
	6.000	0.0727	1960571.	10190.	-0.000564	366.2563	1.007E+12
-109.1155	7200.0000	0.000	0.000				
	6.400	0.0701	2009127.	9655.3677	-0.000555	370.7285	1.007E+12
-113.4926	7776.0000	0.000	0.000				
	6.800	0.0674	2055052.	9101.4538	-0.000545	374.9584	1.007E+12
-117.3049	8352.0000	0.000	0.000				
	7.200	0.0648	2098259.	8530.5519	-0.000535	378.9379	1.007E+12
-120.5709	8928.0000	0.000	0.000				
	7.600	0.0623	2138672.	7945.2389	-0.000525	382.6601	1.007E+12
-123.3095	9504.0000	0.000	0.000				
	8.000	0.0598	2176228.	7348.0002	-0.000515	386.1191	1.007E+12
-125.5399	10080.0000	0.000	0.000				
	8.400	0.0573	2210874.	6741.2283	-0.000504	389.3101	1.007E+12
-127.2817	10656.0000	0.000	0.000				
	8.800	0.0549	2242571.	6127.2212	-0.000494	392.2295	1.007E+12
-128.5546	11232.0000	0.000	0.000				
	9.200	0.0526	2271289.	5508.1818	-0.000483	394.8745	1.007E+12
-129.3785	11808.0000	0.000	0.000				
	9.600	0.0503	2297008.	4886.2162	-0.000472	397.2434	1.007E+12
-129.7738	12384.0000	0.000	0.000				
	10.000	0.0481	2319720.	4263.3339	-0.000461	399.3352	1.007E+12
-129.7605	12960.0000	0.000	0.000				
	10.400	0.0459	2339424.	3641.4463	-0.000450	401.1500	1.007E+12
-129.3593	13536.0000	0.000	0.000				
	10.800	0.0437	2356129.	3022.3673	-0.000439	402.6887	1.007E+12
-128.5904	14112.0000	0.000	0.000				
	11.200	0.0417	2369854.	2407.8122	-0.000428	403.9528	1.007E+12
-127.4742	14688.0000	0.000	0.000				
	11.600	0.0396	2380624.	1799.3989	-0.000416	404.9447	1.007E+12
-126.0313	15264.0000	0.000	0.000				
	12.000	0.0377	2388471.	1198.6470	-0.000405	405.6675	1.007E+12
-124.2820	15840.0000	0.000	0.000				
	12.400	0.0357	2393437.	606.9791	-0.000394	406.1248	1.007E+12
-122.2463	16416.0000	0.000	0.000				
	12.800	0.0339	2395568.	25.7211	-0.000382	406.3211	1.007E+12
-119.9445	16992.0000	0.000	0.000				
	13.200	0.0321	2394917.	-543.8972	-0.000371	406.2611	1.007E+12
-117.3964	17568.0000	0.000	0.000				
	13.600	0.0303	2391543.	-1100.7408	-0.000359	405.9503	1.007E+12
-114.6217	18144.0000	0.000	0.000				
	14.000	0.0286	2385509.	-1643.7685	-0.000348	405.3946	1.007E+12
-111.6398	18720.0000	0.000	0.000				
	14.400	0.0270	2376885.	-2172.0318	-0.000337	404.6003	1.007E+12
-108.4699	19296.0000	0.000	0.000				
	14.800	0.0254	2365743.	-2684.6731	-0.000325	403.5741	1.007E+12
-105.1307	19872.0000	0.000	0.000				
	15.200	0.0239	2352161.	-3180.9246	-0.000314	402.3232	1.007E+12
-101.6408	20448.0000	0.000	0.000				
	15.600	0.0224	2336220.	-3660.1062	-0.000303	400.8549	1.007E+12
-98.0182	21024.0000	0.000	0.000				
	16.000	0.0210	2318001.	-4121.6239	-0.000292	399.1769	1.007E+12
-94.2808	21600.0000	0.000	0.000				

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16.400	0.0196	2297593.	-4564.9678	-0.000281	397.2973	1.007E+12
-90.4458	22176.	0.000				
16.800	0.0183	2275084.	-4989.7101	-0.000270	395.2241	1.007E+12
-86.5301	22752.	0.000				
17.200	0.0170	2250563.	-5395.5029	-0.000259	392.9656	1.007E+12
-82.5502	23328.	0.000				
17.600	0.0158	2224123.	-5782.0758	-0.000248	390.5304	1.007E+12
-78.5219	23904.	0.000				
18.000	0.0146	2195856.	-6149.2339	-0.000238	387.9269	1.007E+12
-74.4607	24480.	0.000				
18.400	0.0135	2165858.	-6496.8553	-0.000228	385.1640	1.007E+12
-70.3816	25056.	0.000				
18.800	0.0124	2134221.	-6824.8885	-0.000217	382.2501	1.007E+12
-66.2989	25632.	0.000				
19.200	0.0114	2101040.	-7133.3498	-0.000207	379.1940	1.007E+12
-62.2266	26208.	0.000				
19.600	0.0104	2066409.	-7422.3209	-0.000197	376.0044	1.007E+12
-58.1780	26784.	0.000				
20.000	0.009503	2030422.	-7691.9464	-0.000188	372.6898	1.007E+12
-54.1659	27360.	0.000				
20.400	0.008626	1993171.	-7942.4308	-0.000178	369.2589	1.007E+12
-50.2025	27936.	0.000				
20.800	0.007795	1954748.	-8174.0357	-0.000169	365.7200	1.007E+12
-46.2995	28512.	0.000				
21.200	0.007008	1915244.	-8518.4462	-0.000159	362.0815	1.007E+12
-97.2048	66579.	0.000				
21.600	0.006265	1873485.	-8986.5091	-0.000150	358.2354	1.007E+12
-97.8214	74946.	0.000				
22.000	0.005565	1829458.	-9453.1294	-0.000141	354.1804	1.007E+12
-96.6037	83322.	0.000				
22.400	0.004907	1783192.	-9909.9850	-0.000133	349.9190	1.007E+12
-93.7527	91707.	0.000				
22.800	0.004290	1734751.	-10350.	-0.000124	345.4575	1.007E+12
-89.4617	100102.	0.000				
23.200	0.003712	1684236.	-10766.	-0.000116	340.8049	1.007E+12
-83.9157	108508.	0.000				
23.600	0.003173	1631774.	-11153.	-0.000108	335.9730	1.007E+12
-77.2917	116922.	0.000				
24.000	0.002671	1577520.	-11506.	-0.000101	330.9759	1.007E+12
-69.7577	125347.	0.000				
24.400	0.002206	1521646.	-11821.	-9.339E-05	325.8297	1.007E+12
-61.4726	133781.	0.000				
24.800	0.001775	1464343.	-12094.	-8.628E-05	320.5520	1.007E+12
-52.5859	142225.	0.000				
25.200	0.001377	1405818.	-12324.	-7.944E-05	315.1616	1.007E+12
-43.2375	150679.	0.000				
25.600	0.001012	1346286.	-12509.	-7.288E-05	309.6785	1.007E+12
-33.5576	159142.	0.000				
26.000	0.000678	1285971.	-12646.	-6.661E-05	304.1233	1.007E+12
-23.6666	167615.	0.000				
26.400	0.000373	1225100.	-12736.	-6.062E-05	298.5169	1.007E+12
-13.6749	176098.	0.000				
26.800	9.577E-05	1163905.	-12777.	-5.493E-05	292.8806	1.007E+12
-3.6830	184591.	0.000				
27.200	-0.000155	1102616.	-12771.	-4.953E-05	287.2356	1.007E+12
6.2182	193093.	0.000				
27.600	-0.000380	1041462.	-12718.	-4.442E-05	281.6031	1.007E+12
15.9478	201605.	0.000				
28.000	-0.000581	980667.	-12619.	-3.960E-05	276.0037	1.007E+12
25.4340	210127.	0.000				
28.400	-0.000760	920451.	-12474.	-3.507E-05	270.4576	1.007E+12
34.6147	218658.	0.000				
28.800	-0.000918	861025.	-12287.	-3.083E-05	264.9843	1.007E+12

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43.4364	227199.	0.000					
29.200	-0.001056	802594.	-12058.	-2.686E-05	259.6025	1.007E+12	
51.8546	235750.	0.000					
29.600	-0.001176	745350.	-11790.	-2.317E-05	254.3302	1.007E+12	
59.8328	244311.	0.000					
30.000	-0.001278	689480.	-11485.	-1.975E-05	249.1843	1.007E+12	
67.3424	252881.	0.000					
30.400	-0.001365	635156.	-11145.	-1.660E-05	244.1809	1.007E+12	
74.3625	261461.	0.000					
30.800	-0.001438	582541.	-10773.	-1.370E-05	239.3348	1.007E+12	
80.8788	270051.	0.000					
31.200	-0.001497	531784.	-10370.	-1.104E-05	234.6600	1.007E+12	
86.8837	278650.	0.000					
31.600	-0.001544	483025.	-9939.6851	-8.622E-06	230.1691	1.007E+12	
92.3755	287260.	0.000					
32.000	-0.001579	436391.	-9484.3258	-6.431E-06	225.8739	1.007E+12	
97.3576	295878.	0.000					
32.400	-0.001605	391996.	-9006.2554	-4.457E-06	221.7850	1.007E+12	
101.8384	304507.	0.000					
32.800	-0.001622	349945.	-8507.8497	-2.689E-06	217.9120	1.007E+12	
105.8306	313146.	0.000					
33.200	-0.001631	310330.	-7994.8685	-1.116E-06	214.2632	1.007E+12	
107.9115	317559.	0.000					
33.600	-0.001633	273198.	-7476.4577	2.748E-07	210.8433	1.007E+12	
108.0930	317742.	0.000					
34.000	-0.001628	238555.	-6958.1689	1.494E-06	207.6525	1.007E+12	
107.8607	317924.	0.000					
34.400	-0.001619	206395.	-6441.8639	2.554E-06	204.6905	1.007E+12	
107.2664	318106.	0.000					
34.800	-0.001604	176705.	-5929.1648	3.467E-06	201.9559	1.007E+12	
106.3582	318289.	0.000					
35.200	-0.001585	149464.	-5421.4711	4.245E-06	199.4469	1.007E+12	
105.1808	318471.	0.000					
35.600	-0.001563	124645.	-4919.9772	4.898E-06	197.1610	1.007E+12	
103.7750	318653.	0.000					
36.000	-0.001538	102216.	-4425.6900	5.438E-06	195.0952	1.007E+12	
102.1780	318835.	0.000					
36.400	-0.001511	82141.	-3939.4455	5.878E-06	193.2462	1.007E+12	
100.4238	319018.	0.000					
36.800	-0.001482	64378.	-3461.9261	6.227E-06	191.6102	1.007E+12	
98.5426	319200.	0.000					
37.200	-0.001451	48886.	-2993.6772	6.497E-06	190.1834	1.007E+12	
96.5611	319382.	0.000					
37.600	-0.001419	35618.	-2535.1234	6.698E-06	188.9613	1.007E+12	
94.5029	319565.	0.000					
38.000	-0.001387	24527.	-2086.5852	6.841E-06	187.9398	1.007E+12	
92.3880	319747.	0.000					
38.400	-0.001354	15565.	-1648.2943	6.937E-06	187.1143	1.007E+12	
90.2332	319929.	0.000					
38.800	-0.001320	8681.3084	-1220.4094	6.995E-06	186.4803	1.007E+12	
88.0522	320111.	0.000					
39.200	-0.001287	3826.3902	-803.0313	7.024E-06	186.0332	1.007E+12	
85.8553	320294.	0.000					
39.600	-0.001253	949.5496	-396.2183	7.036E-06	185.7682	1.007E+12	
83.6501	320476.	0.000					
40.000	-0.001219	0.000	0.000	7.038E-06	185.6808	1.007E+12	
81.4408	160329.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

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Pile-head deflection = 0.1176837 inches
 Computed slope at pile head = -0.0006725 radians
 Maximum bending moment = 2395568. inch-lbs
 Maximum shear force = 14000. lbs
 Depth of maximum bending moment = 12.8000000 feet below pile head
 Depth of maximum shear force = 0.8000000 feet below pile head
 Number of iterations = 6
 Number of zero deflection points = 1

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Case No.	Load Type No.	Maximum Shear in Pile V(lbs)	Pile-head	Pile-head	Axial Loading lbs	Pile-head Deflection inches	Maximum
			Condition 1 V(lbs) or y(inches)	Condition 2 Pile-head or Rotation in-lb, rad., or in-lb/rad. radians			Moment in Pile in-lbs
1	1	V = 26000.	M = 808000.	454000.	0.18570947		
3589187.		26000.	-0.00099446				
2	1	V = 16000.	M = 641000.	786000.	0.11965380		
2343919.		16000.	-0.00065146				
3	1	V = 22000.	M = 3662000.	718000.	0.25064390		
5597886.		-27639.	-0.00155928				
4	1	V = 18000.	M = 6001000.	712000.	0.29840557		
7364532.		-33957.	-0.00199428				
5	1	V = 14000.	M = 1019000.	336000.	0.11768373		
2395568.		14000.	-0.00067252				

The analysis ended normally.

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LPIle Plus for Windows, Version 2013-07.007

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: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: PIER - Strength.lp7d
Name of output report file: PIER - Strength.lp7o
Name of plot output file: PIER - Strength.lp7p
Name of runtime message file: PIER - Strength.lp7r

Date and Time of Analysis

Date: February 24, 2021 Time: 11:10:35

Problem Title

Project Name: Bel ford PIER - Strength

Job Number: 115360

Client:

Engi neer: JDJ

PIER - Strength.Ip7o

Description:

Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 40.00 ft

Depth of ground surface below top of pile = 1.00 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	48.0000000
2	40.000000	48.0000000

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Input Structural Properties:

Pile Section No. 1:

Section Type	=	Drilled Shaft (Bored Pile)
Section Length	=	40.00000 ft
Section Diameter	=	48.00000 in

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 2 layers

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

Distance from top of pile to top of layer	=	1.00000 ft
Distance from top of pile to bottom of layer	=	21.00000 ft
Effective unit weight at top of layer	=	58.00000 pcf
Effective unit weight at bottom of layer	=	58.00000 pcf
Friction angle at top of layer	=	28.00000 deg.
Friction angle at bottom of layer	=	30.00000 deg.
Subgrade k at top of layer	=	25.00000 pci
Subgrade k at bottom of layer	=	25.00000 pci

Layer 2 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	21.00000 ft
Distance from top of pile to bottom of layer	=	100.00000 ft
Effective unit weight at top of layer	=	61.00000 pcf
Effective unit weight at bottom of layer	=	61.00000 pcf
Uniaxial compressive strength at top of layer	=	100.00000 psi
Uniaxial compressive strength at bottom of layer	=	120.00000 psi
Initial modulus of rock at top of layer	=	130.00000 psi
Initial modulus of rock at bottom of layer	=	145.00000 psi
RQD of rock at top of layer	=	10.00000 %
RQD of rock at bottom of layer	=	20.00000 %
k _{rm} of rock at top of layer	=	0.0000500
k _{rm} of rock at bottom of layer	=	0.0000500

(Depth of lowest soil layer extends 60.00 ft below pile tip)

Summary of Soil Properties

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Uni axial Layer Num. psi	RQD % or (p-y Curve GSI	Layer Soil Type kpy Criteria) pci	Rock Mass Rock Emass psi	Layer Depth ft	Effective Unit Wt. pcf	Angle of Friction deg.
1	Sand (Reese, et al.)	25.000	--	1.000	58.000	28.000
--	--	25.000	--	21.000	58.000	30.000
2	Weak Rock	--	130.000	21.000	61.000	--
100.000	10.000	--	130.000	5.00E-05	61.000	--
120.000	20.000	--	145.000	5.00E-05	61.000	--

Loadi ng Type

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

Pi le-head Loadi ng and Pi le-head Fi xi ty Condi ti ons

Number of Loads speci fi ed = 5

Load No.	Load Compute Type	Condi ti on 1	Condi ti on 2	Axi al Thrust Force, lbs
1	1	V = 39000. lbs	M = 1598000. in-lbs	614000.
2	No	V = 23000. lbs	M = 1293000. in-lbs	1122000.
3	No	V = 36000. lbs	M = 6075000. in-lbs	793000.
4	No	V = 30000. lbs	M = 10166000. in-lbs	802000.
5	No	V = 22000. lbs	M = 1805000. in-lbs	442000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	40.0000	ft
Shaft Diameter	=	48.0000	in
Concrete Cover Thickness	=	3.0000	in
Number of Reinforcing Bars	=	18	bars
Yield Stress of Reinforcing Bars	=	60000.	psi
Modulus of Elasticity of Reinforcing Bars	=	29000000.	psi
Gross Area of Shaft	=	1809.55737	sq. in.
Total Area of Reinforcing Steel	=	22.86000	sq. in.
Area Ratio of Steel Reinforcement	=	1.26	percent
Edge-to-Edge Bar Spacing	=	5.80269	in
Maximum Concrete Aggregate Size	=	0.75000	in
Ratio of Bar Spacing to Aggregate Size	=	7.74	
Offset of Center of Rebar Cage from Center of Pile	=	0.0000	in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	7446.371	ki ps
Tensile Load for Cracking of Concrete	=	-819.588	ki ps
Nominal Axial Tensile Capacity	=	-1371.600	ki ps

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.27000	1.27000	20.36500	0.00000
2	1.27000	1.27000	19.13684	6.96524
3	1.27000	1.27000	15.60050	13.09037
4	1.27000	1.27000	10.18250	17.63661
5	1.27000	1.27000	3.53635	20.05561
6	1.27000	1.27000	-3.53635	20.05561
7	1.27000	1.27000	-10.18250	17.63661
8	1.27000	1.27000	-15.60050	13.09037
9	1.27000	1.27000	-19.13684	6.96524
10	1.27000	1.27000	-20.36500	0.00000
11	1.27000	1.27000	-19.13684	-6.96524
12	1.27000	1.27000	-15.60050	-13.09037
13	1.27000	1.27000	-10.18250	-17.63661
14	1.27000	1.27000	-3.53635	-20.05561
15	1.27000	1.27000	3.53635	-20.05561
16	1.27000	1.27000	10.18250	-17.63661
17	1.27000	1.27000	15.60050	-13.09037
18	1.27000	1.27000	19.13684	-6.96524

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

Minimum spacing between any two bars not equal to zero = 5.80269 inches between Bars 17 and 18

Spacing to aggregate size ratio = 7.73692

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Concrete Properties:

Compressive Strength of Concrete	=	4000.00000	psi
Modulus of Elasticity of Concrete	=	3604997.	psi
Modulus of Rupture of Concrete	=	-474.34164	psi
Compression Strain at Peak Stress	=	0.00189	
Tensile Strain at Fracture of Concrete	=	-0.0001154	
Maximum Coarse Aggregate Size	=	0.75000	in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 5

Number	Axial Thrust Force ki ps
1	442.000
2	614.000
3	793.000
4	802.000
5	1122.000

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 318-08 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 318-08, 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 = 442.000 ki ps

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-ki p ksi	Bending Run Stiffness Msg ki p-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.00000625	744.5839327	1191334292.	110.9934503	0.0000694	0.0000394
0.2881910	2.0074063				
0.00001250	1489.1626936	1191330155.	67.5303701	0.0000844	0.0000244
0.3487837	2.4392759				
0.00001875	2233.6809675	1191296516.	53.0576183	0.0000995	0.00009483
0.4089903	2.8719580				
0.00002500	2978.0982043	1191239282.	45.8324274	0.0001146	-0.00005419
0.4688078	3.3054510				
0.00003125	3721.7371511	1190955888.	41.5050666	0.0001297	-0.0000203
0.5282187	3.7396467				
0.00003750	4463.2648389	1190203957.	38.6243846	0.0001448	-0.0000352

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0. 5871876	4. 1743018				
0. 000004375	5201. 9343010	1189013555.	36. 5690877	0. 0001600	-0. 0000500
0. 6456910	4. 6092530				
0. 000005000	5937. 3908830	1187478177.	35. 0290220	0. 0001751	-0. 0000649
0. 7037157	5. 0444082				
0. 000005625	6669. 4539685	1185680706.	33. 8321106	0. 0001903	-0. 0000797
0. 7612539	5. 4797131				
0. 000006250	7398. 0236153	1183683778.	32. 8752193	0. 0002055	-0. 0000945
0. 8183005	5. 9151335				
0. 000006875	8123. 0418705	1181533363.	32. 0927774	0. 0002206	-0. 0001094
0. 8748524	6. 3506475				
0. 000007500	8123. 0418705	1083072249.	28. 5659406	0. 0002142	-0. 0001458
0. 8502748	6. 1608921	C			
0. 000008125	8123. 0418705	999758999.	27. 6984589	0. 0002250	-0. 0001650
0. 8902489	6. 4698992	C			
0. 000008750	8123. 0418705	928347642.	26. 9313625	0. 0002356	-0. 0001844
0. 9292023	6. 7729331	C			
0. 000009375	8123. 0418705	866457800.	26. 2478231	0. 0002461	-0. 0002039
0. 9672620	7. 0708769	C			
0. 0000100	8123. 0418705	812304187.	25. 6335273	0. 0002563	-0. 0002237
1. 0044899	7. 3641229	C			
0. 0000106	8123. 0418705	764521588.	25. 0771741	0. 0002664	-0. 0002436
1. 0409326	7. 6529543	C			
0. 0000113	8123. 0418705	722048166.	24. 5716056	0. 0002764	-0. 0002636
1. 0767023	7. 9381864	C			
0. 0000119	8123. 0418705	684045631.	24. 1099559	0. 0002863	-0. 0002837
1. 1118566	8. 2202161	C			
0. 0000125	8123. 0418705	649843350.	23. 6869087	0. 0002961	-0. 0003039
1. 1464596	-8. 7264956	C			
0. 0000131	8201. 9680860	624911854.	23. 2975949	0. 0003058	-0. 0003242
1. 1805476	-9. 3110029	C			
0. 0000138	8401. 7899696	611039271.	22. 9361207	0. 0003154	-0. 0003446
1. 2140632	-9. 8985219	C			
0. 0000144	8599. 1433162	598201274.	22. 6013818	0. 0003249	-0. 0003651
1. 2471408	-10. 4879990	C			
0. 0000150	8794. 5927797	586306185.	22. 2912017	0. 0003344	-0. 0003856
1. 2798459	-11. 0789272	C			
0. 0000156	8986. 9527547	575164976.	21. 9996841	0. 0003437	-0. 0004063
1. 3120214	-11. 6726431	C			
0. 0000163	9177. 9042402	564794107.	21. 7281723	0. 0003531	-0. 0004269
1. 3438696	-12. 2674988	C			
0. 0000169	9366. 9596263	555079089.	21. 4733109	0. 0003624	-0. 0004476
1. 3753274	-12. 8640484	C			
0. 0000175	9554. 4240663	545967090.	21. 2337402	0. 0003716	-0. 0004684
1. 4064236	-13. 4620768	C			
0. 0000181	9740. 4588458	537404626.	21. 0082290	0. 0003808	-0. 0004892
1. 4371830	-14. 0613996	C			
0. 0000188	9925. 3598995	529352528.	20. 7958503	0. 0003899	-0. 0005101
1. 4676385	-14. 6617563	C			
0. 0000194	10109.	521736677.	20. 5942037	0. 0003990	-0. 0005310
1. 4977191	-15. 2637817	C			
0. 0000200	10292.	514587600.	20. 4054928	0. 0004081	-0. 0005519
1. 5276420	-15. 8656141	C			
0. 0000206	10473.	507763433.	20. 2236646	0. 0004171	-0. 0005729
1. 5570737	-16. 4701706	C			
0. 0000213	10653.	501329290.	20. 0526916	0. 0004261	-0. 0005939
1. 5863403	-17. 0746287	C			
0. 0000219	10833.	495239247.	19. 8909628	0. 0004351	-0. 0006149
1. 6153929	-17. 6794204	C			
0. 0000225	11012.	489411545.	19. 7348486	0. 0004440	-0. 0006360
1. 6440227	-18. 2864112	C			
0. 0000231	11190.	483891341.	19. 5874496	0. 0004530	-0. 0006570
1. 6725003	-18. 8932165	C			

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0. 0000238	11368.	478654334.	19. 4480784	0. 0004619	-0. 0006781
1. 7008254	-19. 4998359	C			
0. 0000244	11544.	473615814.	19. 3123902	0. 0004707	-0. 0006993
1. 7287072	-20. 1089042	C			
0. 0000256	11896.	464248720.	19. 0611590	0. 0004884	-0. 0007416
1. 7839839	-21. 3268261	C			
0. 0000269	12246.	455668550.	18. 8303415	0. 0005061	-0. 0007839
1. 8383319	-22. 5470526	C			
0. 0000281	12594.	447784200.	18. 6180814	0. 0005236	-0. 0008264
1. 8918355	-23. 7688773	C			
0. 0000294	12940.	440524410.	18. 4229756	0. 0005412	-0. 0008688
1. 9445873	-24. 9914776	C			
0. 0000306	13285.	433781359.	18. 2405706	0. 0005586	-0. 0009114
1. 9963741	-26. 2169431	C			
0. 0000319	13628.	427546845.	18. 0732567	0. 0005761	-0. 0009539
2. 0475744	-27. 4416833	C			
0. 0000331	13970.	421731633.	17. 9166642	0. 0005935	-0. 0009965
2. 0979273	-28. 6682544	C			
0. 0000344	14310.	416294286.	17. 7699510	0. 0006108	-0. 0010392
2. 1474726	-29. 8963300	C			
0. 0000356	14650.	411220610.	17. 6342401	0. 0006282	-0. 0010818
2. 1964359	-31. 1236756	C			
0. 0000369	14989.	406469586.	17. 5080332	0. 0006456	-0. 0011244
2. 2447748	-32. 3506969	C			
0. 0000381	15325.	401977454.	17. 3872432	0. 0006629	-0. 0011671
2. 2921550	-33. 5808792	C			
0. 0000394	15662.	397754566.	17. 2747697	0. 0006802	-0. 0012098
2. 3389566	-34. 8103223	C			
0. 0000406	15997.	393775962.	17. 1698493	0. 0006975	-0. 0012525
2. 3851772	-36. 0390212	C			
0. 0000419	16332.	390019662.	17. 0718095	0. 0007149	-0. 0012951
2. 4308141	-37. 2669712	C			
0. 0000431	16666.	386449101.	16. 9780442	0. 0007322	-0. 0013378
2. 4756379	-38. 4966834	C			
0. 0000444	16998.	383056954.	16. 8891469	0. 0007495	-0. 0013805
2. 5197647	-39. 7269289	C			
0. 0000456	17330.	379836848.	16. 8056982	0. 0007668	-0. 0014232
2. 5633103	-40. 9564104	C			
0. 0000469	17661.	376774926.	16. 7272662	0. 0007841	-0. 0014659
2. 6062723	-42. 1851224	C			
0. 0000481	17992.	373858768.	16. 6534639	0. 0008014	-0. 0015086
2. 6486480	-43. 4130593	C			
0. 0000494	18322.	371077214.	16. 5839437	0. 0008188	-0. 0015512
2. 6904348	-44. 6402154	C			
0. 0000506	18651.	368410033.	16. 5168994	0. 0008362	-0. 0015938
2. 7314497	-45. 8687769	C			
0. 0000519	18979.	365853536.	16. 4528011	0. 0008535	-0. 0016365
2. 7717773	-47. 0977671	C			
0. 0000531	19306.	363405302.	16. 3922406	0. 0008708	-0. 0016792
2. 8115175	-48. 3259541	C			
0. 0000544	19633.	361057779.	16. 3349779	0. 0008882	-0. 0017218
2. 8506676	-49. 5533316	C			
0. 0000556	19958.	358804093.	16. 2807944	0. 0009056	-0. 0017644
2. 8892249	-50. 7798933	C			
0. 0000569	20284.	356637973.	16. 2294912	0. 0009231	-0. 0018069
2. 9271867	-52. 0056327	C			
0. 0000581	20608.	354553687.	16. 1808863	0. 0009405	-0. 0018495
2. 9645501	-53. 2305433	C			
0. 0000594	20932.	352545984.	16. 1348131	0. 0009580	-0. 0018920
3. 0013124	-54. 4546184	C			
0. 0000606	21256.	350610046.	16. 0911189	0. 0009755	-0. 0019345
3. 0374706	-55. 6778513	C			
0. 0000619	21578.	348735537.	16. 0484762	0. 0009930	-0. 0019770

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3. 0728719	-56. 9023653	C	346922675.	16. 0075807	0. 0010105	-0. 0020195
0. 0000631	21899.					
3. 1076174	-58. 1267723	C	345169849.	15. 9687429	0. 0010280	-0. 0020620
0. 0000644	22220.					
3. 1417587	-59. 3503028	C	343473548.	15. 9318493	0. 0010455	-0. 0021045
0. 0000656	22540.					
3. 1752928	-60. 0000000	CY	341830524.	15. 8967947	0. 0010631	-0. 0021469
0. 0000669	22860.					
3. 2082166	-60. 0000000	CY	340237766.	15. 8634821	0. 0010807	-0. 0021893
0. 0000681	23179.					
3. 2405272	-60. 0000000	CY	338692479.	15. 8318211	0. 0010983	-0. 0022317
0. 0000694	23497.					
3. 2722213	-60. 0000000	CY	337192064.	15. 8017281	0. 0011160	-0. 0022740
0. 0000706	23814.					
3. 3032959	-60. 0000000	CY	335723955.	15. 7729817	0. 0011337	-0. 0023163
0. 0000719	24130.					
3. 3337298	-60. 0000000	CY	333978492.	15. 7410760	0. 0011511	-0. 0023589
0. 0000731	24422.					
3. 3629715	-60. 0000000	CY	331746787.	15. 7028064	0. 0011679	-0. 0024021
0. 0000744	24674.					
3. 3906419	-60. 0000000	CY	322096950.	15. 5425011	0. 0012337	-0. 0025763
0. 0000794	25566.					
3. 4928711	-60. 0000000	CY	310381278.	15. 3500967	0. 0012952	-0. 0027548
0. 0000844	26188.					
3. 5798146	-60. 0000000	CY	299659220.	15. 1790680	0. 0013566	-0. 0029334
0. 0000894	26782.					
3. 6585716	-60. 0000000	CY	289530578.	15. 0162343	0. 0014172	-0. 0031128
0. 0000944	27324.					
3. 7281276	-60. 0000000	CY	278561012.	14. 8322802	0. 0014740	-0. 0032960
0. 0000994	27682.					
3. 7861301	-60. 0000000	CY	268462523.	14. 6659988	0. 0015308	-0. 0034792
0. 0001044	28021.					
3. 8371859	-60. 0000000	CY	259212093.	14. 5113926	0. 0015872	-0. 0036628
0. 0001094	28351.					
3. 8810075	-60. 0000000	CY	250727749.	14. 3719790	0. 0016438	-0. 0038462
0. 0001144	28677.					
3. 9180893	-60. 0000000	CY	242919245.	14. 2471286	0. 0017008	-0. 0040292
0. 0001194	28998.					
3. 9484334	-60. 0000000	CY	235284221.	14. 1203230	0. 0017562	-0. 0042138
0. 0001244	29263.					
3. 9712538	-60. 0000000	CY	227541439.	13. 9796384	0. 0018086	-0. 0044014
0. 0001294	29438.					
3. 9867153	-60. 0000000	CY	220255994.	13. 8483707	0. 0018609	-0. 0045891
0. 0001344	29597.					
3. 9962641	-60. 0000000	CY	213472683.	13. 7287437	0. 0019134	-0. 0047766
0. 0001394	29753.					
3. 9999557	-60. 0000000	CY	207118708.	13. 6158060	0. 0019658	-0. 0049642
0. 0001444	29903.					
3. 9993285	-60. 0000000	CY	201156220.	13. 5097496	0. 0020180	-0. 0051520
0. 0001494	30048.					
3. 9974633	-60. 0000000	CY	195561283.	13. 4126899	0. 0020706	-0. 0053394
0. 0001544	30190.					
3. 9999990	-60. 0000000	CY	190296598.	13. 3240239	0. 0021235	-0. 0055265
0. 0001594	30329.					
3. 9989539	60. 0000000	CY	185336404.	13. 2426510	0. 0021768	-0. 0057132
0. 0001644	30465.					
3. 9955041	60. 0000000	CY	180645213.	13. 1656978	0. 0022299	-0. 0059001
0. 0001694	30597.					
3. 9994469	60. 0000000	CY	176200150.	13. 0920472	0. 0022829	-0. 0060871
0. 0001744	30725.					
3. 9954389	60. 0000000	CY	171978628.	13. 0234704	0. 0023361	-0. 0062739
0. 0001794	30849.					
3. 9993666	60. 0000000	CY				

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0.0001844	30963.		167932435.	12.9575131	0.0023890	-0.0064610
3.9949772	60.0000000	CY				
0.0001894	31049.		163957447.	12.8880547	0.0024407	-0.0066493
3.9985067	60.0000000	CY				
0.0001944	31110.		160053732.	12.8146219	0.0024908	-0.0068392
3.9999960	60.0000000	CY				
0.0001994	31163.		156304926.	12.7440548	0.0025408	-0.0070292
3.9955131	60.0000000	CY				
0.0002044	31211.		152713412.	12.6731208	0.0025901	-0.0072199
3.9988522	60.0000000	CY				
0.0002094	31256.		149284696.	12.6043029	0.0026390	-0.0074110
3.9999989	60.0000000	CY				
0.0002144	31301.		146010271.	12.5398910	0.0026882	-0.0076018
3.9940611	60.0000000	CY				
0.0002194	31345.		142882780.	12.4790557	0.0027376	-0.0077924
3.9978503	60.0000000	CY				
0.0002244	31388.		139891909.	12.4216338	0.0027871	-0.0079829
3.9997598	60.0000000	CY				
0.0002294	31431.		137027424.	12.3676385	0.0028368	-0.0081732
3.9953893	60.0000000	CY				
0.0002344	31472.		134282042.	12.3167177	0.0028867	-0.0083633
3.9947571	60.0000000	CY				
0.0002394	31513.		131644946.	12.2692209	0.0029369	-0.0085531
3.9981216	60.0000000	CY				
0.0002444	31547.		129091705.	12.2262169	0.0029878	-0.0087422
3.9998147	60.0000000	CY				
0.0002494	31579.		126632522.	12.1828602	0.0030381	-0.0089319
3.9953975	60.0000000	CYT				
0.0002544	31611.		124267525.	12.1419221	0.0030886	-0.0091214
3.9928554	60.0000000	CYT				
0.0002594	31639.		121982569.	12.1050468	0.0031397	-0.0093103
3.9967491	60.0000000	CYT				
0.0002644	31664.		119767846.	12.0731110	0.0031918	-0.0094982
3.9991870	60.0000000	CYT				
0.0002694	31688.		117633731.	12.0428904	0.0032441	-0.0096859
3.9999584	60.0000000	CYT				
0.0002744	31711.		115573642.	12.0148277	0.0032966	-0.0098734
3.9913946	60.0000000	CYT				
0.0003044	31829.		104572916.	11.8831483	0.0036169	-0.0109931
3.9897280	60.0000000	CYT				
0.0003344	31829.		95190673.	11.8383772	0.0039585	-0.0120915
3.9899469	60.0000000	CYT				

Axial Thrust Force = 614.000 ki ps

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-ki p ksi	Bending Run Stiffness Msg ki p-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.00000625	736.8228946	1178916631.	145.4843865	0.0000909	0.0000609
0.3757398	2.6325545				
0.00001250	1473.6502736	1178920219.	84.7762055	0.0001060	0.0000460
0.4356125	3.0644375				
0.00001875	2210.4165053	1178888803.	64.5552497	0.0001210	0.0000310
0.4950989	3.4971417				
0.00002500	2947.0910357	1178836414.	54.4561015	0.0001361	0.0000161
0.5541963	3.9306674				
0.00003125	3683.6433041	1178765857.	48.4056778	0.0001513	0.00001268

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0. 6129018	4. 3650146				
0. 000003750	4419. 9079722	1178642126.	44. 3794166	0. 0001664	-0. 0000136
0. 6712096	4. 8001616				
0. 000004375	5154. 9379922	1178271541.	41. 5085734	0. 0001816	-0. 0000284
0. 7290960	5. 2359503				
0. 000005000	5887. 7938655	1177558773.	39. 3586393	0. 0001968	-0. 0000432
0. 7865354	5. 6722027				
0. 000005625	6617. 9107513	1176517467.	37. 6885548	0. 0002120	-0. 0000580
0. 8435103	6. 1087955				
0. 000006250	7344. 9569817	1175193117.	36. 3539122	0. 0002272	-0. 0000728
0. 9000088	6. 5456466				
0. 000006875	8068. 7391425	1173634784.	35. 2629596	0. 0002424	-0. 0000876
0. 9560233	6. 9827026				
0. 000007500	8789. 1333728	1171884450.	34. 3546007	0. 0002577	-0. 0001023
1. 0115481	7. 4199257				
0. 000008125	8789. 1333728	1081739492.	31. 6793810	0. 0002574	-0. 0001326
1. 0100283	7. 4079042	C			
0. 000008750	8789. 1333728	1004472385.	30. 7491563	0. 0002691	-0. 0001509
1. 0520850	7. 7416984	C			
0. 000009375	8789. 1333728	937507560.	29. 9201570	0. 0002805	-0. 0001695
1. 0930708	8. 0692927	C			
0. 0000100	8789. 1333728	878913337.	29. 1740096	0. 0002917	-0. 0001883
1. 1330240	8. 3908628	C			
0. 0000106	8789. 1333728	827212553.	28. 4992048	0. 0003028	-0. 0002072
1. 1720778	8. 7073674	C			
0. 0000113	8852. 0258197	786846740.	27. 8838533	0. 0003137	-0. 0002263
1. 2102452	9. 0188072	C			
0. 0000119	9097. 4224960	766098737.	27. 3213213	0. 0003244	-0. 0002456
1. 2476539	9. 3261300	C			
0. 0000125	9335. 4589224	746836714.	26. 8043642	0. 0003351	-0. 0002649
1. 2843437	9. 6295820	C			
0. 0000131	9566. 9671321	728911781.	26. 3271911	0. 0003455	-0. 0002845
1. 3203567	9. 9294371	C			
0. 0000138	9792. 7482116	712199870.	25. 8851396	0. 0003559	-0. 0003041
1. 3557378	10. 2259994	C			
0. 0000144	10014.	696596151.	25. 4744364	0. 0003662	-0. 0003238
1. 3905346	10. 5196057	C			
0. 0000150	10230.	682010853.	25. 0920182	0. 0003764	-0. 0003436
1. 4247978	10. 8106280	C			
0. 0000156	10443.	668353224.	24. 7350467	0. 0003865	-0. 0003635
1. 4585626	11. 0993181	C			
0. 0000163	10651.	655464516.	24. 3988323	0. 0003965	-0. 0003835
1. 4917389	11. 3848497	C			
0. 0000169	10857.	643384552.	24. 0842597	0. 0004064	-0. 0004036
1. 5245135	11. 6687846	C			
0. 0000175	11061.	632037933.	23. 7892974	0. 0004163	-0. 0004237
1. 5569067	-12. 1651315	C			
0. 0000181	11261.	621275633.	23. 5094471	0. 0004261	-0. 0004439
1. 5887744	-12. 7466969	C			
0. 0000188	11460.	611173490.	23. 2472629	0. 0004359	-0. 0004641
1. 6203722	-13. 3288007	C			
0. 0000194	11655.	601549095.	22. 9970892	0. 0004456	-0. 0004844
1. 6514528	-13. 9136605	C			
0. 0000200	11850.	592487737.	22. 7619988	0. 0004552	-0. 0005048
1. 6822933	-14. 4988406	C			
0. 0000206	12041.	583829649.	22. 5367903	0. 0004648	-0. 0005252
1. 7126413	-15. 0866322	C			
0. 0000213	12233.	575670394.	22. 3251941	0. 0004744	-0. 0005456
1. 7428139	-15. 6741991	C			
0. 0000219	12421.	567831968.	22. 1209273	0. 0004839	-0. 0005661
1. 7724565	-16. 2647868	C			
0. 0000225	12609.	560416004.	21. 9282151	0. 0004934	-0. 0005866
1. 8019178	-16. 8552396	C			

			PIER - Strength.l p7o			
0. 0000231	12796.		553329273.	21. 7437086	0. 0005028	-0. 0006072
1. 8310233	-17. 4471754	C				
0. 0000238	12981.		546551196.	21. 5669647	0. 0005122	-0. 0006278
1. 8597913	-18. 0404530	C				
0. 0000244	13165.		540112086.	21. 3995874	0. 0005216	-0. 0006484
1. 8883899	-18. 6335166	C				
0. 0000256	13530.		527981630.	21. 0826681	0. 0005402	-0. 0006898
1. 9444914	-19. 8245924	C				
0. 0000269	13891.		516876158.	20. 7928832	0. 0005588	-0. 0007312
1. 9996484	-21. 0174966	C				
0. 0000281	14249.		506619638.	20. 5245963	0. 0005773	-0. 0007727
2. 0537008	-22. 2138761	C				
0. 0000294	14604.		497141853.	20. 2765743	0. 0005956	-0. 0008144
2. 1067928	-23. 4124432	C				
0. 0000306	14956.		488348472.	20. 0463477	0. 0006139	-0. 0008561
2. 1589346	-24. 6131873	C				
0. 0000319	15306.		480176015.	19. 8324770	0. 0006322	-0. 0008978
2. 2101944	-25. 8155041	C				
0. 0000331	15653.		472536514.	19. 6320435	0. 0006503	-0. 0009397
2. 2604801	-27. 0204181	C				
0. 0000344	15999.		465430475.	19. 4469955	0. 0006685	-0. 0009815
2. 3101258	-28. 2245263	C				
0. 0000356	16342.		458722388.	19. 2705525	0. 0006865	-0. 0010235
2. 3586289	-29. 4331606	C				
0. 0000369	16684.		452445809.	19. 1066159	0. 0007046	-0. 0010654
2. 4064794	-30. 6412125	C				
0. 0000381	17025.		446558590.	18. 9539682	0. 0007226	-0. 0011074
2. 4536763	-31. 8486688	C				
0. 0000394	17363.		440965708.	18. 8072780	0. 0007405	-0. 0011495
2. 4997817	-33. 0603893	C				
0. 0000406	17700.		435699022.	18. 6702966	0. 0007585	-0. 0011915
2. 5452603	-34. 2713067	C				
0. 0000419	18037.		430729190.	18. 5421587	0. 0007765	-0. 0012335
2. 5901090	-35. 4814159	C				
0. 0000431	18372.		426007099.	18. 4201515	0. 0007944	-0. 0012756
2. 6341168	-36. 6931479	C				
0. 0000444	18705.		421511264.	18. 3036812	0. 0008122	-0. 0013178
2. 6772822	-37. 9066001	C				
0. 0000456	19037.		417245892.	18. 1942093	0. 0008301	-0. 0013599
2. 7198221	-39. 1192367	C				
0. 0000469	19368.		413192433.	18. 0911799	0. 0008480	-0. 0014020
2. 7617334	-40. 3310521	C				
0. 0000481	19699.		409332157.	17. 9938889	0. 0008660	-0. 0014440
2. 8029904	-41. 5423286	C				
0. 0000494	20028.		405621895.	17. 8990891	0. 0008838	-0. 0014862
2. 8432742	-42. 7570917	C				
0. 0000506	20355.		402080628.	17. 8095389	0. 0009016	-0. 0015284
2. 8829329	-43. 9710206	C				
0. 0000519	20682.		398696037.	17. 7248628	0. 0009195	-0. 0015705
2. 9219637	-45. 1841093	C				
0. 0000531	21009.		395456958.	17. 6447210	0. 0009374	-0. 0016126
2. 9603635	-46. 3963516	C				
0. 0000544	21334.		392353255.	17. 5688045	0. 0009553	-0. 0016547
2. 9981294	-47. 6077412	C				
0. 0000556	21659.		389368819.	17. 4960120	0. 0009732	-0. 0016968
3. 0351632	-48. 8195956	C				
0. 0000569	21982.		386488887.	17. 4252975	0. 0009911	-0. 0017389
3. 0713692	-50. 0332997	C				
0. 0000581	22304.		383720268.	17. 3581427	0. 0010089	-0. 0017811
3. 1069432	-51. 2461306	C				
0. 0000594	22625.		381055837.	17. 2943266	0. 0010269	-0. 0018231
3. 1418821	-52. 4580812	C				
0. 0000606	22946.		378489055.	17. 2336468	0. 0010448	-0. 0018652

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3. 1761827	-53. 6691445	C	376013911.	17. 1759173	0. 0010628	-0. 0019072
0. 0000619	23266.					
3. 2098418	-54. 8793133	C	373624867.	17. 1209667	0. 0010808	-0. 0019492
0. 0000631	23585.					
3. 2428564	-56. 0885802	C	371316817.	17. 0686372	0. 0010988	-0. 0019912
0. 0000644	23904.					
3. 2752230	-57. 2969378	C	369080027.	17. 0180114	0. 0011168	-0. 0020332
0. 0000656	24221.					
3. 3068490	-58. 5058469	C	366909073.	16. 9687603	0. 0011348	-0. 0020752
0. 0000669	24537.					
3. 3377098	-59. 7157603	C	364806691.	16. 9217927	0. 0011528	-0. 0021172
0. 0000681	24852.					
3. 3679226	-60. 0000000	CY	362769086.	16. 8769893	0. 0011708	-0. 0021592
0. 0000694	25167.					
3. 3974838	-60. 0000000	CY	360792730.	16. 8342392	0. 0011889	-0. 0022011
0. 0000706	25481.					
3. 4263902	-60. 0000000	CY	358874338.	16. 7934397	0. 0012070	-0. 0022430
0. 0000719	25794.					
3. 4546382	-60. 0000000	CY	357010850.	16. 7544946	0. 0012252	-0. 0022848
0. 0000731	26106.					
3. 4822243	-60. 0000000	CY	355188661.	16. 7171660	0. 0012433	-0. 0023267
0. 0000744	26417.					
3. 5091284	-60. 0000000	CY	345288944.	16. 5387476	0. 0013128	-0. 0024972
0. 0000794	27407.					
3. 6052580	-60. 0000000	CY	333859981.	16. 3411196	0. 0013788	-0. 0026712
0. 0000844	28169.					
3. 6868949	-60. 0000000	CY	321786497.	16. 1399674	0. 0014425	-0. 0028475
0. 0000894	28760.					
3. 7566942	-60. 0000000	CY	310881690.	15. 9591159	0. 0015061	-0. 0030239
0. 0000944	29339.					
3. 8176161	-60. 0000000	CY	300076390.	15. 7792043	0. 0015681	-0. 0032019
0. 0000994	29820.					
3. 8684585	-60. 0000000	CY	288953514.	15. 5923444	0. 0016275	-0. 0033825
0. 0001044	30160.					
3. 9094078	-60. 0000000	CY	278742840.	15. 4175869	0. 0016863	-0. 0035637
0. 0001094	30487.					
3. 9424662	-60. 0000000	CY	269381916.	15. 2614308	0. 0017455	-0. 0037445
0. 0001144	30811.					
3. 9681964	-60. 0000000	CY	260762665.	15. 1216247	0. 0018051	-0. 0039249
0. 0001194	31129.					
3. 9864520	-60. 0000000	CY	252757677.	14. 9893088	0. 0018643	-0. 0041057
0. 0001244	31437.					
3. 9969805	-60. 0000000	CY	245032178.	14. 8606922	0. 0019226	-0. 0042874
0. 0001294	31701.					
3. 9983442	-60. 0000000	CY	237229106.	14. 7243272	0. 0019786	-0. 0044714
0. 0001344	31878.					
3. 9999778	-60. 0000000	CY	229812491.	14. 5934743	0. 0020340	-0. 0046560
0. 0001394	32030.					
3. 9995701	-60. 0000000	CY	222858038.	14. 4693679	0. 0020890	-0. 0048410
0. 0001444	32175.					
3. 9982187	-60. 0000000	CY	216346777.	14. 3559845	0. 0021444	-0. 0050256
0. 0001494	32317.					
3. 9977413	60. 0000000	CY	210234334.	14. 2524034	0. 0022002	-0. 0052098
0. 0001544	32455.					
3. 9995722	60. 0000000	CY	204485145.	14. 1573522	0. 0022563	-0. 0053937
0. 0001594	32590.					
3. 9971110	60. 0000000	CY	199045968.	14. 0640139	0. 0023118	-0. 0055782
0. 0001644	32718.					
3. 9999198	60. 0000000	CY	193910879.	13. 9782922	0. 0023676	-0. 0057624
0. 0001694	32844.					
3. 9975010	60. 0000000	CY	189058820.	13. 8990635	0. 0024236	-0. 0059464
0. 0001744	32967.					
3. 9999500	60. 0000000	CY				

PIER - Strength.l p7o						
0. 0001794	33088.		184462364.	13. 8261745	0. 0024801	-0. 0061299
3. 9969658	60. 0000000	CY				
0. 0001844	33207.		180105887.	13. 7586024	0. 0025367	-0. 0063133
3. 9998018	60. 0000000	CY				
0. 0001894	33323.		175961003.	13. 6957802	0. 0025936	-0. 0064964
3. 9952088	60. 0000000	CY				
0. 0001944	33431.		171994211.	13. 6329128	0. 0026499	-0. 0066801
3. 9990267	60. 0000000	CY				
0. 0001994	33514.		168093411.	13. 5645662	0. 0027044	-0. 0068656
3. 9985219	60. 0000000	CY				
0. 0002044	33579.		164302699.	13. 4957590	0. 0027582	-0. 0070518
3. 9959494	60. 0000000	CY				
0. 0002094	33629.		160617641.	13. 4256319	0. 0028110	-0. 0072390
3. 9989862	60. 0000000	CY				
0. 0002144	33670.		157062561.	13. 3612200	0. 0028643	-0. 0074257
3. 9998462	60. 0000000	CY				
0. 0002194	33707.		153650903.	13. 3024418	0. 0029182	-0. 0076118
3. 9938940	60. 0000000	CY				
0. 0002244	33744.		150388920.	13. 2469364	0. 0029723	-0. 0077977
3. 9977396	60. 0000000	CY				
0. 0002294	33774.		147244024.	13. 1977274	0. 0030272	-0. 0079828
3. 9997439	60. 0000000	CYT				
0. 0002344	33799.		144208319.	13. 1490695	0. 0030818	-0. 0081682
3. 9955190	60. 0000000	CYT				
0. 0002394	33823.		141295832.	13. 1033851	0. 0031366	-0. 0083534
3. 9943331	60. 0000000	CYT				
0. 0002444	33846.		138498252.	13. 0606125	0. 0031917	-0. 0085383
3. 9978694	60. 0000000	CYT				
0. 0002494	33866.		135804072.	13. 0214575	0. 0032472	-0. 0087228
3. 9997266	60. 0000000	CYT				
0. 0002544	33886.		133212573.	12. 9847322	0. 0033030	-0. 0089070
3. 9960589	60. 0000000	CYT				
0. 0002594	33905.		130717857.	12. 9502910	0. 0033590	-0. 0090910
3. 9921543	60. 0000000	CYT				
0. 0002644	33924.		128316018.	12. 9176528	0. 0034151	-0. 0092749
3. 9962938	60. 0000000	CYT				
0. 0002694	33942.		126001854.	12. 8867267	0. 0034714	-0. 0094586
3. 9989085	60. 0000000	CYT				
0. 0002744	33960.		123770539.	12. 8574289	0. 0035278	-0. 0096422
3. 9999745	60. 0000000	CYT				
0. 0003044	33960.		111571390.	12. 7606117	0. 0038840	-0. 0107260
3. 9920396	60. 0000000	CYT				

Axial Thrust Force = 793.000 ki ps

Bendi ng Max Concrete Curvature Stress rad/i n. ksi	Bendi ng Max Steel Moment Stress i n-ki p ksi	Bendi ng Run Sti ffness Msg ki p-i n2	Depth to N Axis i n	Max Comp Strain i n/i n	Max Tens Strain i n/i n
0. 000000625	728. 6550048	1165848008.	181. 7833243	0. 0001136	0. 0000836
0. 4667494	3. 2904728				
0. 000001250	1457. 3246695	1165859736.	102. 9260696	0. 0001287	0. 0000687
0. 5258643	3. 7223700				
0. 000001875	2185. 9324766	1165830654.	76. 6555982	0. 0001437	0. 0000537
0. 5845929	4. 1550982				
0. 000002500	2914. 4475167	1165779007.	63. 5318238	0. 0001588	0. 0000388
0. 6429321	4. 5886572				
0. 000003125	3642. 8388736	1165708440.	55. 6667297	0. 0001740	0. 0000240

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0. 7008792	5. 0230474				
0. 000003750	4371. 0756223	1165620166.	50. 4309773	0. 0001891	0. 000009116
0. 7584313	5. 4582688				
0. 000004375	5099. 1213995	1165513463.	46. 6977005	0. 0002043	-0. 000005698
0. 8155853	5. 8943208				
0. 000005000	5826. 5976691	1165319534.	43. 9030741	0. 0002195	-0. 0000205
0. 8723309	6. 3311457				
0. 000005625	6552. 6174039	1164909761.	41. 7332779	0. 0002347	-0. 0000353
0. 9286459	6. 7685910				
0. 000006250	7276. 4792362	1164236678.	40. 0001153	0. 0002500	-0. 0000500
0. 9845108	7. 2065209				
0. 000006875	7997. 7156616	1163304096.	38. 5839985	0. 0002653	-0. 0000647
1. 0399112	7. 6448347				
0. 000007500	8716. 0140559	1162135207.	37. 4053235	0. 0002805	-0. 0000795
1. 0948366	8. 0834579				
0. 000008125	9431. 1695399	1160759328.	36. 4090703	0. 0002958	-0. 0000942
1. 1492792	8. 5223372				
0. 000008750	10143.	1159205308.	35. 5559981	0. 0003111	-0. 0001089
1. 2032336	8. 9614345				
0. 000009375	10143.	1081924954.	33. 3304914	0. 0003125	-0. 0001375
1. 2075173	8. 9964774	C			
0. 0000100	10143.	1014304645.	32. 4627329	0. 0003246	-0. 0001554
1. 2498932	9. 3445925	C			
0. 0000106	10143.	954639666.	31. 6767278	0. 0003366	-0. 0001734
1. 2911910	9. 6864416	C			
0. 0000113	10143.	901604129.	30. 9626548	0. 0003483	-0. 0001917
1. 3315763	10. 0232661	C			
0. 0000119	10215.	860185765.	30. 3079617	0. 0003599	-0. 0002101
1. 3710137	10. 3546542	C			
0. 0000125	10493.	839447872.	29. 7069874	0. 0003713	-0. 0002287
1. 4096563	10. 6817829	C			
0. 0000131	10762.	819950996.	29. 1523791	0. 0003826	-0. 0002474
1. 4475294	11. 0047743	C			
0. 0000138	11022.	801591710.	28. 6383501	0. 0003938	-0. 0002662
1. 4846687	11. 3238421	C			
0. 0000144	11274.	784282993.	28. 1601815	0. 0004048	-0. 0002852
1. 5211116	11. 6392256	C			
0. 0000150	11519.	767950641.	27. 7140033	0. 0004157	-0. 0003043
1. 5568979	11. 9511914	C			
0. 0000156	11758.	752530523.	27. 2966290	0. 0004265	-0. 0003235
1. 5920698	12. 2600350	C			
0. 0000163	11992.	737966480.	26. 9054291	0. 0004372	-0. 0003428
1. 6266718	12. 5660835	C			
0. 0000169	12221.	724208685.	26. 5382327	0. 0004478	-0. 0003622
1. 6607512	12. 8696977	C			
0. 0000175	12446.	711182293.	26. 1925312	0. 0004584	-0. 0003816
1. 6943174	13. 1709096	C			
0. 0000181	12665.	698771020.	25. 8648295	0. 0004688	-0. 0004012
1. 7273025	13. 4690510	C			
0. 0000188	12882.	687035110.	25. 5560768	0. 0004792	-0. 0004208
1. 7598776	13. 7656168	C			
0. 0000194	13095.	675886886.	25. 2638192	0. 0004895	-0. 0004405
1. 7920084	14. 0602585	C			
0. 0000200	13305.	665239347.	24. 9854200	0. 0004997	-0. 0004603
1. 8236314	14. 3523436	C			
0. 0000206	13513.	655171851.	24. 7229492	0. 0005099	-0. 0004801
1. 8549658	14. 6438641	C			
0. 0000213	13716.	645480939.	24. 4705759	0. 0005200	-0. 0005000
1. 8857230	14. 9320923	C			
0. 0000219	13920.	636323930.	24. 2328066	0. 0005301	-0. 0005199
1. 9162703	15. 2204367	C			
0. 0000225	14119.	627496571.	24. 0035735	0. 0005401	-0. 0005399
1. 9462758	15. 5057318	C			

		PIER - Strength.l p7o			
0. 0000231	14318.	619135163.	23. 78711114	0. 0005501	-0. 0005599
1. 9760902	-16. 0768183	C			
0. 0000238	14513.	611071627.	23. 5781632	0. 0005600	-0. 0005800
2. 0054107	-16. 6552401	C			
0. 0000244	14708.	603392249.	23. 3796674	0. 0005699	-0. 0006001
2. 0344982	-17. 2338475	C			
0. 0000256	15091.	588930342.	23. 0058805	0. 0005895	-0. 0006405
2. 0915937	-18. 3954051	C			
0. 0000269	15470.	575614883.	22. 6622459	0. 0006090	-0. 0006810
2. 1474894	-19. 5605621	C			
0. 0000281	15843.	563315482.	22. 3453657	0. 0006285	-0. 0007215
2. 2022511	-20. 7288110	C			
0. 0000294	16211.	551851601.	22. 0493771	0. 0006477	-0. 0007623
2. 2556914	-21. 9022371	C			
0. 0000306	16575.	541237339.	21. 7762249	0. 0006669	-0. 0008031
2. 3082133	-23. 0768401	C			
0. 0000319	16935.	531302812.	21. 5200929	0. 0006860	-0. 0008440
2. 3595512	-24. 2555140	C			
0. 0000331	17293.	522044448.	21. 2820551	0. 0007050	-0. 0008850
2. 4099885	-25. 4353757	C			
0. 0000344	17646.	513343309.	21. 0579570	0. 0007239	-0. 0009261
2. 4593333	-26. 6185990	C			
0. 0000356	17998.	505210864.	20. 8495781	0. 0007428	-0. 0009672
2. 5078996	-27. 8018295	C			
0. 0000369	18346.	497511393.	20. 6512355	0. 0007615	-0. 0010085
2. 5553036	-28. 9894349	C			
0. 0000381	18692.	490293969.	20. 4667048	0. 0007803	-0. 0010497
2. 6020194	-30. 1761494	C			
0. 0000394	19036.	483456420.	20. 2914311	0. 0007990	-0. 0010910
2. 6477287	-31. 3656721	C			
0. 0000406	19378.	476985316.	20. 1257725	0. 0008176	-0. 0011324
2. 6925629	-32. 5565741	C			
0. 0000419	19718.	470880086.	19. 9707358	0. 0008363	-0. 0011737
2. 7367143	-33. 7465876	C			
0. 0000431	20056.	465062159.	19. 8223868	0. 0008548	-0. 0012152
2. 7798751	-34. 9394775	C			
0. 0000444	20392.	459529509.	19. 6815628	0. 0008734	-0. 0012566
2. 8222006	-36. 1334388	C			
0. 0000456	20727.	454281537.	19. 5491279	0. 0008919	-0. 0012981
2. 8638484	-37. 3265100	C			
0. 0000469	21060.	449288288.	19. 4239012	0. 0009105	-0. 0013395
2. 9047616	-38. 5193841	C			
0. 0000481	21391.	444490429.	19. 3024183	0. 0009289	-0. 0013811
2. 9446351	-39. 7161123	C			
0. 0000494	21721.	439918686.	19. 1877121	0. 0009474	-0. 0014226
2. 9838353	-40. 9119446	C			
0. 0000506	22050.	435556178.	19. 0792848	0. 0009659	-0. 0014641
3. 0223589	-42. 1068748	C			
0. 0000519	22378.	431387648.	18. 9766869	0. 0009844	-0. 0015056
3. 0602024	-43. 3008965	C			
0. 0000531	22704.	427366616.	18. 8767418	0. 0010028	-0. 0015472
3. 0970661	-44. 4982696	C			
0. 0000544	23028.	423508801.	18. 7814256	0. 0010212	-0. 0015888
3. 1331960	-45. 6955893	C			
0. 0000556	23352.	419809413.	18. 6909637	0. 0010397	-0. 0016303
3. 1686495	-46. 8919890	C			
0. 0000569	23675.	416257893.	18. 6050403	0. 0010582	-0. 0016718
3. 2034232	-48. 0874614	C			
0. 0000581	23997.	412844581.	18. 5233668	0. 0010767	-0. 0017133
3. 2375137	-49. 2819997	C			
0. 0000594	24317.	409548340.	18. 4444467	0. 0010951	-0. 0017549
3. 2707850	-50. 4777183	C			
0. 0000606	24636.	406359380.	18. 3678319	0. 0011135	-0. 0017965

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3. 3032123	-51. 6751054	C	403285761.	18. 2948439	0. 0011320	-0. 0018380
0. 0000619	24953.					
3. 3349589	-52. 8715394	C	400320525.	18. 2252714	0. 0011505	-0. 0018795
0. 0000631	25270.					
3. 3660213	-54. 0670123	C	397457248.	18. 1589198	0. 0011690	-0. 0019210
0. 0000644	25586.					
3. 3963959	-55. 2615164	C	394689995.	18. 0956093	0. 0011875	-0. 0019625
0. 0000656	25902.					
3. 4260790	-56. 4550434	C	392013276.	18. 0351734	0. 0012061	-0. 0020039
0. 0000669	26216.					
3. 4550669	-57. 6475853	C	389415142.	17. 9766066	0. 0012247	-0. 0020453
0. 0000681	26529.					
3. 4832674	-58. 8408165	C	386887994.	17. 9193740	0. 0012432	-0. 0020868
0. 0000694	26840.					
3. 5106388	-60. 0000000	CY	384438165.	17. 8646628	0. 0012617	-0. 0021283
0. 0000706	27151.					
3. 5373159	-60. 0000000	CY	382061520.	17. 8123459	0. 0012803	-0. 0021697
0. 0000719	27461.					
3. 5632948	-60. 0000000	CY	379754203.	17. 7623048	0. 0012989	-0. 0022111
0. 0000731	27770.					
3. 5885716	-60. 0000000	CY	377512616.	17. 7144292	0. 0013175	-0. 0022525
0. 0000744	28078.					
3. 6131424	-60. 0000000	CY	368116102.	17. 5282510	0. 0013913	-0. 0024187
0. 0000794	29219.					
3. 7029667	-60. 0000000	CY	356717767.	17. 3214355	0. 0014615	-0. 0025885
0. 0000844	30098.					
3. 7773512	-60. 0000000	CY	343881180.	17. 1010310	0. 0015284	-0. 0027616
0. 0000894	30734.					
3. 8382461	-60. 0000000	CY	331754129.	16. 8943834	0. 0015944	-0. 0029356
0. 0000944	31309.					
3. 8887934	-60. 0000000	CY	320700876.	16. 7100065	0. 0016606	-0. 0031094
0. 0000994	31870.					
3. 9299810	-60. 0000000	CY	309366106.	16. 5199765	0. 0017243	-0. 0032857
0. 0001044	32290.					
3. 9606668	-60. 0000000	CY	298213687.	16. 3283021	0. 0017859	-0. 0034641
0. 0001094	32617.					
3. 9819778	-60. 0000000	CY	287982991.	16. 1571627	0. 0018480	-0. 0036420
0. 0001144	32938.					
3. 9951406	-60. 0000000	CY	278530998.	15. 9999624	0. 0019100	-0. 0038200
0. 0001194	33250.					
3. 9999727	-60. 0000000	CY	269761260.	15. 8554552	0. 0019720	-0. 0039980
0. 0001244	33552.					
3. 9999838	-60. 0000000	CY	261615817.	15. 7260140	0. 0020346	-0. 0041754
0. 0001294	33847.					
3. 9999454	-60. 0000000	CY	253861365.	15. 6046252	0. 0020969	-0. 0043531
0. 0001344	34113.					
3. 9997420	-60. 0000000	CY	246015503.	15. 4687808	0. 0021560	-0. 0045340
0. 0001394	34288.					
3. 9988944	60. 0000000	CY	238483156.	15. 3376068	0. 0022144	-0. 0047156
0. 0001444	34431.					
3. 9968356	60. 0000000	CY	231430649.	15. 2177874	0. 0022732	-0. 0048968
0. 0001494	34570.					
3. 9999374	60. 0000000	CY	224807015.	15. 1075011	0. 0023322	-0. 0050778
0. 0001544	34705.					
3. 9985672	60. 0000000	CY	218553384.	14. 9999890	0. 0023906	-0. 0052594
0. 0001594	34832.					
3. 9977733	60. 0000000	CY	212661479.	14. 9012564	0. 0024494	-0. 0054406
0. 0001644	34956.					
3. 9990787	60. 0000000	CY	207104141.	14. 8101133	0. 0025085	-0. 0056215
0. 0001694	35078.					
3. 9960991	60. 0000000	CY	201850932.	14. 7260681	0. 0025679	-0. 0058021
0. 0001744	35198.					
3. 9989974	60. 0000000	CY				

PIER - Strength.l p7o						
0. 0001794	35315.		196879755.	14. 6482295	0. 0026275	-0. 0059825
3. 9970512	60. 0000000	CY				
0. 0001844	35427.		192147125.	14. 5716245	0. 0026866	-0. 0061634
3. 9981671	60. 0000000	CY				
0. 0001894	35537.		187655343.	14. 4996501	0. 0027459	-0. 0063441
3. 9999825	60. 0000000	CY				
0. 0001944	35636.		183337745.	14. 4378122	0. 0028063	-0. 0065237
3. 9960104	60. 0000000	CY				
0. 0001994	35733.		179223901.	14. 3808627	0. 0028672	-0. 0067028
3. 9993559	60. 0000000	CY				
0. 0002044	35817.		175250882.	14. 3306724	0. 0029288	-0. 0068812
3. 9960777	60. 0000000	CY				
0. 0002094	35888.		171407580.	14. 2843330	0. 0029908	-0. 0070592
3. 9970485	60. 0000000	CY				
0. 0002144	35942.		167658480.	14. 2350759	0. 0030516	-0. 0072384
3. 9996367	60. 0000000	CYT				
0. 0002194	35980.		164009305.	14. 1864375	0. 0031121	-0. 0074179
3. 9953195	60. 0000000	CYT				
0. 0002244	36005.		160467292.	14. 1348001	0. 0031715	-0. 0075985
3. 9958133	60. 0000000	CYT				
0. 0002294	36026.		157061283.	14. 0824854	0. 0032302	-0. 0077798
3. 9988234	60. 0000000	CYT				
0. 0002344	36045.		153793878.	14. 0326731	0. 0032889	-0. 0079611
3. 9999853	60. 0000000	CYT				
0. 0002394	36064.		150658046.	13. 9861593	0. 0033479	-0. 0081421
3. 9920315	60. 0000000	CYT				
0. 0002444	36082.		147648322.	13. 9422092	0. 0034071	-0. 0083229
3. 9955813	60. 0000000	CYT				
0. 0002494	36099.		144757201.	13. 9006505	0. 0034665	-0. 0085035
3. 9985635	60. 0000000	CYT				
0. 0002544	36116.		141977766.	13. 8613307	0. 0035260	-0. 0086840
3. 9999160	60. 0000000	CYT				
0. 0002594	36131.		139301964.	13. 8244842	0. 0035857	-0. 0088643
3. 9941356	60. 0000000	CYT				
0. 0002644	36147.		136725153.	13. 7896957	0. 0036457	-0. 0090443
3. 9926839	60. 0000000	CYT				
0. 0002694	36158.		134229698.	13. 7593494	0. 0037064	-0. 0092236
3. 9966367	60. 0000000	CYT				
0. 0002744	36167.		131817657.	13. 7318709	0. 0037677	-0. 0094023
3. 9991035	60. 0000000	CYT				
0. 0003044	36167.		118825363.	13. 8762398	0. 0042236	-0. 0103864
3. 9939530	60. 0000000	CYT				

Axial Thrust Force = 802.000 ki ps

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-ki p ksi	Bending Run Stiffness Msg ki p-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0. 000000625	728. 2418211	1165186914.	183. 6195524	0. 0001148	0. 0000848
0. 4713224	3. 3237544				
0. 000001250	1456. 4988172	1165199054.	103. 8442039	0. 0001298	0. 0000698
0. 5303991	3. 7556524				
0. 000001875	2184. 6939193	1165170090.	77. 2677102	0. 0001449	0. 0000549
0. 5890893	4. 1883817				
0. 000002500	2912. 7961998	1165118480.	63. 9909314	0. 0001600	0. 0000400
0. 6473902	4. 6219425				
0. 000003125	3640. 7747245	1165047912.	56. 0340401	0. 0001751	0. 0000251

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0. 7052989	5. 0563349				
0. 000003750	4368. 5985499	1164959613.	50. 7370940	0. 0001903	0. 0000103
0. 7628126	5. 4915590				
0. 000004375	5096. 2341810	1164853527.	46. 9601150	0. 0002055	-0. 000004549
0. 8199283	5. 9276146				
0. 000005000	5823. 3593738	1164671875.	44. 1327842	0. 0002207	-0. 0000193
0. 8766368	6. 3644537				
0. 000005625	6549. 1044672	1164285239.	41. 9376420	0. 0002359	-0. 0000341
0. 9329165	6. 8019279				
0. 000006250	7272. 7498689	1163639979.	40. 1842732	0. 0002512	-0. 0000488
0. 9887477	7. 2398995				
0. 000006875	7993. 8137336	1162736543.	38. 7516783	0. 0002664	-0. 0000636
1. 0441157	7. 6782659				
0. 000007500	8711. 9716572	1161596221.	37. 5593124	0. 0002817	-0. 0000783
1. 0990095	8. 1169505				
0. 000008125	9427. 0088297	1160247241.	36. 5515037	0. 0002970	-0. 0000930
1. 1534213	8. 5558981				
0. 000008750	10139.	1158718175.	35. 6885495	0. 0003123	-0. 0001077
1. 2073452	8. 9950695				
0. 000009375	10139.	1081470297.	33. 4929852	0. 0003140	-0. 0001360
1. 2129130	9. 0406554	C			
0. 0000100	10139.	1013878403.	32. 6194821	0. 0003262	-0. 0001538
1. 2554028	9. 3900497	C			
0. 0000106	10139.	954238497.	31. 8291873	0. 0003382	-0. 0001718
1. 2968418	9. 7334183	C			
0. 0000113	10139.	901225248.	31. 1090677	0. 0003500	-0. 0001900
1. 3372790	10. 0710333	C			
0. 0000119	10265.	864442303.	30. 4514424	0. 0003616	-0. 0002084
1. 3768689	10. 4040655	C			
0. 0000125	10545.	843629271.	29. 8458363	0. 0003731	-0. 0002269
1. 4155765	10. 7321157	C			
0. 0000131	10816.	824064765.	29. 2871435	0. 0003844	-0. 0002456
1. 4535185	11. 0560690	C			
0. 0000138	11078.	805644196.	28. 7695083	0. 0003956	-0. 0002644
1. 4907303	11. 3761414	C			
0. 0000144	11332.	788279589.	28. 2881550	0. 0004066	-0. 0002834
1. 5272498	11. 6925746	C			
0. 0000150	11578.	771895935.	27. 8391667	0. 0004176	-0. 0003024
1. 5631169	12. 0056375	C			
0. 0000156	11819.	756428426.	27. 4193183	0. 0004284	-0. 0003216
1. 5983739	12. 3156286	C			
0. 0000163	12055.	741820324.	27. 0259476	0. 0004392	-0. 0003408
1. 6330655	12. 6228779	C			
0. 0000169	12285.	728005617.	26. 6565001	0. 0004498	-0. 0003602
1. 6672197	12. 9275748	C			
0. 0000175	12510.	714850387.	26. 3069810	0. 0004604	-0. 0003796
1. 7007621	13. 2289928	C			
0. 0000181	12731.	702406858.	25. 9778427	0. 0004708	-0. 0003992
1. 7338462	13. 5284536	C			
0. 0000188	12950.	690640181.	25. 6678668	0. 0004813	-0. 0004187
1. 7665253	13. 8264027	C			
0. 0000194	13163.	679368558.	25. 3720671	0. 0004916	-0. 0004384
1. 7986122	14. 1210803	C			
0. 0000200	13374.	668696466.	25. 0927914	0. 0005019	-0. 0004581
1. 8303442	14. 4146191	C			
0. 0000206	13582.	658517719.	24. 8271315	0. 0005121	-0. 0004779
1. 8616342	14. 7061781	C			
0. 0000213	13787.	648806369.	24. 5741555	0. 0005222	-0. 0004978
1. 8925044	14. 9959234	C			
0. 0000219	13990.	639553807.	24. 3336557	0. 0005323	-0. 0005177
1. 9230178	15. 2844129	C			
0. 0000225	14191.	630701106.	24. 1038110	0. 0005423	-0. 0005377
1. 9531240	15. 5711367	C			

		PIER - Strength.l p7o			
0. 0000231	14389.	622247611.	23. 8847057	0. 0005523	-0. 0005577
1. 9828931	-16. 0113692	C			
0. 0000238	14586.	614167148.	23. 6755283	0. 0005623	-0. 0005777
2. 0123302	-16. 5881798	C			
0. 0000244	14781.	606403326.	23. 4746029	0. 0005722	-0. 0005978
2. 0413719	-17. 1667400	C			
0. 0000256	15166.	591851720.	23. 0986287	0. 0005919	-0. 0006381
2. 0985498	-18. 3264815	C			
0. 0000269	15546.	578454409.	22. 7531584	0. 0006115	-0. 0006785
2. 1545346	-19. 4897071	C			
0. 0000281	15919.	566020418.	22. 4323726	0. 0006309	-0. 0007191
2. 2092021	-20. 6578461	C			
0. 0000294	16288.	554490009.	22. 1350879	0. 0006502	-0. 0007598
2. 2627357	-21. 8292220	C			
0. 0000306	16654.	543800403.	21. 8603110	0. 0006695	-0. 0008005
2. 3153087	-23. 0021612	C			
0. 0000319	17014.	533770785.	21. 6015679	0. 0006885	-0. 0008415
2. 3665972	-24. 1802009	C			
0. 0000331	17373.	524458460.	21. 3627793	0. 0007076	-0. 0008824
2. 4171307	-25. 3578300	C			
0. 0000344	17726.	515664657.	21. 1359636	0. 0007265	-0. 0009235
2. 4663832	-26. 5408365	C			
0. 0000356	18078.	507461339.	20. 9258642	0. 0007455	-0. 0009645
2. 5149310	-27. 7230165	C			
0. 0000369	18427.	499704862.	20. 7263981	0. 0007643	-0. 0010057
2. 5623594	-28. 9090581	C			
0. 0000381	18773.	492409701.	20. 5395426	0. 0007831	-0. 0010469
2. 6089734	-30. 0956181	C			
0. 0000394	19118.	485536964.	20. 3642689	0. 0008018	-0. 0010882
2. 6547918	-31. 2825003	C			
0. 0000406	19459.	478996422.	20. 1965121	0. 0008205	-0. 0011295
2. 6995218	-32. 4732341	C			
0. 0000419	19800.	472825868.	20. 0395039	0. 0008392	-0. 0011708
2. 7435685	-33. 6630773	C			
0. 0000431	20138.	466979353.	19. 8914312	0. 0008578	-0. 0012122
2. 7868397	-34. 8531288	C			
0. 0000444	20474.	461387725.	19. 7488067	0. 0008764	-0. 0012536
2. 8290579	-36. 0469042	C			
0. 0000456	20809.	456083978.	19. 6146717	0. 0008949	-0. 0012951
2. 8705978	-37. 2397874	C			
0. 0000469	21143.	451044933.	19. 4883512	0. 0009135	-0. 0013365
2. 9114560	-38. 4317725	C			
0. 0000481	21474.	446218056.	19. 3668960	0. 0009320	-0. 0013780
2. 9513842	-39. 6261257	C			
0. 0000494	21804.	441598051.	19. 2507028	0. 0009505	-0. 0014195
2. 9904729	-40. 8217498	C			
0. 0000506	22133.	437189631.	19. 1408636	0. 0009690	-0. 0014610
3. 0288844	-42. 0164695	C			
0. 0000519	22461.	432977371.	19. 0369234	0. 0009875	-0. 0015025
3. 0666152	-43. 2102782	C			
0. 0000531	22787.	428938581.	18. 9377286	0. 0010061	-0. 0015439
3. 1035829	-44. 4043117	C			
0. 0000544	23112.	425040434.	18. 8411584	0. 0010245	-0. 0015855
3. 1395966	-45. 6013982	C			
0. 0000556	23435.	421302499.	18. 7495006	0. 0010429	-0. 0016271
3. 1749333	-46. 7975617	C			
0. 0000569	23757.	417714094.	18. 6624355	0. 0010614	-0. 0016686
3. 2095895	-47. 9927952	C			
0. 0000581	24079.	414265455.	18. 5796711	0. 0010799	-0. 0017101
3. 2435617	-49. 1870918	C			
0. 0000594	24400.	410947636.	18. 5009398	0. 0010985	-0. 0017515
3. 2768465	-50. 3804441	C			
0. 0000606	24719.	407733253.	18. 4240482	0. 0011170	-0. 0017930

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3. 3092320	-51. 5762701	C	404628035.	18. 3500743	0. 0011354	-0. 0018346
0. 0000619	25036.					
3. 3408556	-52. 7724352	C	401632417.	18. 2795568	0. 0011539	-0. 0018761
0. 0000631	25353.					
3. 3717941	-53. 9676362	C	398739907.	18. 2122986	0. 0011724	-0. 0019176
0. 0000644	25669.					
3. 4020439	-55. 1618649	C	395944506.	18. 1481177	0. 0011910	-0. 0019590
0. 0000656	25984.					
3. 4316014	-56. 3551134	C	393240658.	18. 0868458	0. 0012096	-0. 0020004
0. 0000669	26298.					
3. 4604628	-57. 5473732	C	390623218.	18. 0283271	0. 0012282	-0. 0020418
0. 0000681	26611.					
3. 4886244	-58. 7386361	C	388079111.	17. 9713694	0. 0012468	-0. 0020832
0. 0000694	26923.					
3. 5159752	-59. 9310010	C	385604611.	17. 9158917	0. 0012653	-0. 0021247
0. 0000706	27233.					
3. 5425200	-60. 0000000	CY	383204121.	17. 8628368	0. 0012839	-0. 0021661
0. 0000719	27543.					
3. 5683656	-60. 0000000	CY	380873741.	17. 8120849	0. 0013025	-0. 0022075
0. 0000731	27851.					
3. 5935081	-60. 0000000	CY	378609834.	17. 7635242	0. 0013212	-0. 0022488
0. 0000744	28159.					
3. 6179435	-60. 0000000	CY	369218530.	17. 5760458	0. 0013951	-0. 0024149
0. 0000794	29307.					
3. 7073351	-60. 0000000	CY	357809749.	17. 3695499	0. 0014656	-0. 0025844
0. 0000844	30190.					
3. 7813948	-60. 0000000	CY	344961452.	17. 1478713	0. 0015326	-0. 0027574
0. 0000894	30831.					
3. 8417968	-60. 0000000	CY	332783584.	16. 9411152	0. 0015988	-0. 0029312
0. 0000944	31406.					
3. 8918904	-60. 0000000	CY	321683543.	16. 7551303	0. 0016650	-0. 0031050
0. 0000994	31967.					
3. 9324746	-60. 0000000	CY	310373068.	16. 5665733	0. 0017291	-0. 0032809
0. 0001044	32395.					
3. 9626856	-60. 0000000	CY	299170322.	16. 3734903	0. 0017909	-0. 0034591
0. 0001094	32722.					
3. 9833574	-60. 0000000	CY	288890863.	16. 2007832	0. 0018530	-0. 0036370
0. 0001144	33042.					
3. 9958501	-60. 0000000	CY	279408555.	16. 0444639	0. 0019153	-0. 0038147
0. 0001194	33354.					
3. 9998787	-60. 0000000	CY	270596305.	15. 8986488	0. 0019774	-0. 0039926
0. 0001244	33655.					
3. 9995067	-60. 0000000	CY	262411874.	15. 7680033	0. 0020400	-0. 0041700
0. 0001294	33950.					
3. 9999973	-60. 0000000	CY	254636695.	15. 6460133	0. 0021024	-0. 0043476
0. 0001344	34217.					
3. 9998967	60. 0000000	CY	246813264.	15. 5130842	0. 0021621	-0. 0045279
0. 0001394	34400.					
3. 9992869	60. 0000000	CY	239247962.	15. 3808010	0. 0022206	-0. 0047094
0. 0001444	34541.					
3. 9975358	60. 0000000	CY	232166032.	15. 2598604	0. 0022794	-0. 0048906
0. 0001494	34680.					
3. 9999984	60. 0000000	CY	225517597.	15. 1494078	0. 0023387	-0. 0050713
0. 0001544	34814.					
3. 9990394	60. 0000000	CY	219246112.	15. 0429778	0. 0023975	-0. 0052525
0. 0001594	34942.					
3. 9956252	60. 0000000	CY	213330243.	14. 9432492	0. 0024563	-0. 0054337
0. 0001644	35066.					
3. 9994694	60. 0000000	CY	207749236.	14. 8512812	0. 0025154	-0. 0056146
0. 0001694	35188.					
3. 9956945	60. 0000000	CY	202475000.	14. 7663455	0. 0025749	-0. 0057951
0. 0001744	35307.					
3. 9994136	60. 0000000	CY				

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0.0001794	35423.		197482585.	14.6878074	0.0026346	-0.0059754
3.9948254	60.0000000	CY				
0.0001844	35537.		192741238.	14.6133838	0.0026943	-0.0061557
3.9987995	60.0000000	CY				
0.0001894	35646.		188227324.	14.5410721	0.0027537	-0.0063363
3.9987789	60.0000000	CY				
0.0001944	35743.		183886379.	14.4791872	0.0028144	-0.0065156
3.9970149	60.0000000	CY				
0.0001994	35839.		179756742.	14.4215272	0.0028753	-0.0066947
3.9997183	60.0000000	CY				
0.0002044	35921.		175758690.	14.3723136	0.0029373	-0.0068727
3.9934095	60.0000000	CY				
0.0002094	35995.		171917054.	14.3265995	0.0029996	-0.0070504
3.9979800	60.0000000	CY				
0.0002144	36047.		168150833.	14.2771347	0.0030607	-0.0072293
3.9999097	60.0000000	CYT				
0.0002194	36088.		164503079.	14.2294037	0.0031216	-0.0074084
3.9926339	60.0000000	CYT				
0.0002244	36114.		160953582.	14.1794388	0.0031815	-0.0075885
3.9970748	60.0000000	CYT				
0.0002294	36136.		157542397.	14.1287139	0.0032408	-0.0077692
3.9994683	60.0000000	CYT				
0.0002344	36155.		154262683.	14.0783841	0.0032996	-0.0079504
3.9977739	60.0000000	CYT				
0.0002394	36173.		151115597.	14.0312697	0.0033587	-0.0081313
3.9930394	60.0000000	CYT				
0.0002444	36191.		148095448.	13.9866724	0.0034180	-0.0083120
3.9969802	60.0000000	CYT				
0.0002494	36208.		145194165.	13.9445271	0.0034774	-0.0084926
3.9993083	60.0000000	CYT				
0.0002544	36224.		142404847.	13.9046798	0.0035370	-0.0086730
3.9992532	60.0000000	CYT				
0.0002594	36240.		139719082.	13.8674369	0.0035969	-0.0088531
3.9906427	60.0000000	CYT				
0.0002644	36254.		137132460.	13.8323042	0.0036569	-0.0090331
3.9945845	60.0000000	CYT				
0.0002694	36264.		134622447.	13.8027150	0.0037181	-0.0092119
3.9979199	60.0000000	CYT				
0.0002744	36273.		132202251.	13.7747572	0.0037794	-0.0093906
3.9996950	60.0000000	CYT				
0.0003044	36273.		119172050.	13.9227861	0.0042377	-0.0103723
3.9960636	60.0000000	CYT				

Axial Thrust Force = 1122.000 ki ps

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.00000625	713.3895091	1141423215.	249.6244928	0.0001560	0.0001260
0.6337398	4.5200939				
0.00001250	1426.8127307	1141450185.	136.8474176	0.0001711	0.0001111
0.6914386	4.9520189				
0.00001875	2140.1727216	1141425452.	99.2706786	0.0001861	0.0000961
0.7487507	5.3847932				
0.00002500	2853.4378861	1141375154.	80.4940250	0.0002012	0.0000812
0.8056730	5.8184168				
0.00003125	3566.5766212	1141304519.	69.2374070	0.0002164	0.0000664

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0. 8622026	6. 2528900				
0. 000003750	4279. 5573141	1141215284.	61. 7408085	0. 0002315	0. 0000515
0. 9183367	6. 6882129				
0. 000004375	4992. 3483402	1141108192.	56. 3927942	0. 0002467	0. 0000367
0. 9740722	7. 1243858				
0. 000005000	5704. 9180599	1140983612.	52. 3876469	0. 0002619	0. 0000219
1. 0294062	7. 5614088				
0. 000005625	6417. 2348171	1140841745.	49. 2777459	0. 0002772	0. 000007187
1. 0843358	7. 9992823				
0. 000006250	7129. 2584629	1140681354.	46. 7945116	0. 0002925	-0. 000007534
1. 1388579	8. 4380052				
0. 000006875	7840. 6787447	1140462363.	44. 7668003	0. 0003078	-0. 0000222
1. 1929637	8. 8775308				
0. 000007500	8550. 8408600	1140112115.	43. 0802184	0. 0003231	-0. 0000369
1. 2466369	9. 3177475				
0. 000008125	9259. 1769680	1139591011.	41. 6555956	0. 0003385	-0. 0000515
1. 2998623	9. 7585497				
0. 000008750	9965. 2499711	1138885711.	40. 4364504	0. 0003538	-0. 0000662
1. 3526275	10. 1998493				
0. 000009375	10669.	1137998466.	39. 3814279	0. 0003692	-0. 0000808
1. 4049222	10. 6415757				
0. 0000100	11369.	1136938766.	38. 4595573	0. 0003846	-0. 0000954
1. 4567384	11. 0836717				
0. 0000106	12067.	1135719672.	37. 6471928	0. 0004000	-0. 0001100
1. 5080694	11. 5260913				
0. 0000113	12067.	1072624134.	35. 9934746	0. 0004049	-0. 0001351
1. 5240287	11. 6645711	C			
0. 0000119	12067.	1016170232.	35. 1906924	0. 0004179	-0. 0001521
1. 5665980	12. 0361447	C			
0. 0000125	12067.	965361721.	34. 4523899	0. 0004307	-0. 0001693
1. 6081506	12. 4019914	C			
0. 0000131	12409.	945422923.	33. 7712918	0. 0004432	-0. 0001868
1. 6487859	12. 7628479	C			
0. 0000138	12744.	926808400.	33. 1393770	0. 0004557	-0. 0002043
1. 6885085	13. 1186266	C			
0. 0000144	13066.	908930414.	32. 5522792	0. 0004679	-0. 0002221
1. 7274271	13. 4701814	C			
0. 0000150	13376.	891760232.	32. 0047407	0. 0004801	-0. 0002399
1. 7657700	13. 8176622	C			
0. 0000156	13676.	875273172.	31. 4923936	0. 0004921	-0. 0002579
1. 8029672	14. 1612408	C			
0. 0000163	13966.	859463216.	31. 0118285	0. 0005039	-0. 0002761
1. 8396624	14. 5012242	C			
0. 0000169	14248.	844321468.	30. 5601646	0. 0005157	-0. 0002943
1. 8756993	14. 8379305	C			
0. 0000175	14522.	829817844.	30. 1346474	0. 0005274	-0. 0003126
1. 9111051	15. 1715335	C			
0. 0000181	14789.	815923741.	29. 7329172	0. 0005389	-0. 0003311
1. 9459072	15. 5022146	C			
0. 0000188	15049.	802621100.	29. 3531138	0. 0005504	-0. 0003496
1. 9801426	15. 8302557	C			
0. 0000194	15304.	789895029.	28. 9937105	0. 0005618	-0. 0003682
2. 0138527	16. 1559911	C			
0. 0000200	15553.	777636847.	28. 6515628	0. 0005730	-0. 0003870
2. 0469705	16. 4787065	C			
0. 0000206	15796.	765867578.	28. 3260698	0. 0005842	-0. 0004058
2. 0795624	16. 7989805	C			
0. 0000213	16036.	754623026.	28. 0172487	0. 0005954	-0. 0004246
2. 1117269	17. 1177296	C			
0. 0000219	16270.	743771860.	27. 7217661	0. 0006064	-0. 0004436
2. 1433475	17. 4337455	C			
0. 0000225	16500.	733354200.	27. 4398529	0. 0006174	-0. 0004626
2. 1745176	17. 7479040	C			

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0. 0000231	16728.		723371862.	27. 1712028	0. 0006283	-0. 0004817
2. 2052940	18. 0607380	C				
0. 0000238	16951.		713707092.	26. 9126999	0. 0006392	-0. 0005008
2. 2355417	18. 3708220	C				
0. 0000244	17172.		704477671.	26. 6668408	0. 0006500	-0. 0005200
2. 2654907	18. 6804732	C				
0. 0000256	17603.		686933960.	26. 2027032	0. 0006714	-0. 0005586
2. 3240287	19. 2935336	C				
0. 0000269	18023.		670611781.	25. 7740196	0. 0006927	-0. 0005973
2. 3810020	19. 9005763	C				
0. 0000281	18433.		655402406.	25. 3769657	0. 0007137	-0. 0006363
2. 4365073	20. 5023375	C				
0. 0000294	18836.		641212862.	25. 0084704	0. 0007346	-0. 0006754
2. 4906440	21. 0996408	C				
0. 0000306	19231.		627962830.	24. 6660821	0. 0007554	-0. 0007146
2. 5435153	21. 6934143	C				
0. 0000319	19619.		615501196.	24. 3451618	0. 0007760	-0. 0007540
2. 5950126	22. 2822090	C				
0. 0000331	20001.		603802979.	24. 0449484	0. 0007965	-0. 0007935
2. 6452957	22. 8676285	C				
0. 0000344	20379.		592849095.	23. 7652907	0. 0008169	-0. 0008331
2. 6945561	-23. 9197258	C				
0. 0000356	20750.		582451585.	23. 4998919	0. 0008372	-0. 0008728
2. 7424497	-25. 0637244	C				
0. 0000369	21119.		572705280.	23. 2526662	0. 0008574	-0. 0009126
2. 7894638	-26. 2075300	C				
0. 0000381	21481.		563424214.	23. 0170610	0. 0008775	-0. 0009525
2. 8351816	-27. 3564118	C				
0. 0000394	21841.		554701677.	22. 7972893	0. 0008976	-0. 0009924
2. 8800967	-28. 5042952	C				
0. 0000406	22196.		546351719.	22. 5862114	0. 0009176	-0. 0010324
2. 9236971	-29. 6578695	C				
0. 0000419	22549.		538473627.	22. 3886155	0. 0009375	-0. 0010725
2. 9665112	-30. 8103749	C				
0. 0000431	22897.		530952157.	22. 1999204	0. 0009574	-0. 0011126
3. 0082238	-31. 9660745	C				
0. 0000444	23243.		523788733.	22. 0207908	0. 0009772	-0. 0011528
3. 0489795	-33. 1231447	C				
0. 0000456	23588.		516993695.	21. 8522803	0. 0009970	-0. 0011930
3. 0889544	-34. 2791515	C				
0. 0000469	23927.		510450158.	21. 6891067	0. 0010167	-0. 0012333
3. 1277321	-35. 4401207	C				
0. 0000481	24265.		504217266.	21. 5348142	0. 0010364	-0. 0012736
3. 1657042	-36. 6005248	C				
0. 0000494	24602.		498277974.	21. 3890755	0. 0010561	-0. 0013139
3. 2029006	-37. 7598673	C				
0. 0000506	24935.		492549922.	21. 2478494	0. 0010757	-0. 0013543
3. 2389975	-38. 9231512	C				
0. 0000519	25266.		487062067.	21. 1132669	0. 0010953	-0. 0013947
3. 2742427	-40. 0866790	C				
0. 0000531	25596.		481812319.	20. 9857083	0. 0011149	-0. 0014351
3. 3087170	-41. 2491430	C				
0. 0000544	25925.		476776199.	20. 8641965	0. 0011345	-0. 0014755
3. 3423695	-42. 4113200	C				
0. 0000556	26249.		471895467.	20. 7455365	0. 0011540	-0. 0015160
3. 3749390	-43. 5777063	C				
0. 0000569	26573.		467210721.	20. 6327417	0. 0011735	-0. 0015565
3. 4067416	-44. 7430215	C				
0. 0000581	26895.		462709146.	20. 5254385	0. 0011930	-0. 0015970
3. 4377732	-45. 9072576	C				
0. 0000594	27216.		458379008.	20. 4232848	0. 0012126	-0. 0016374
3. 4680292	-47. 0704064	C				
0. 0000606	27534.		454174868.	20. 3234512	0. 0012321	-0. 0016779

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3. 4972759	-48. 2368824	C	450113096.	20. 2275040	0. 0012516	-0. 0017184
0. 0000619	27851.					
3. 5256825	-49. 4036223	C	446195376.	20. 1359581	0. 0012711	-0. 0017589
0. 0000631	28166.					
3. 5533168	-50. 5692615	C	442413164.	20. 0485621	0. 0012906	-0. 0017994
0. 0000644	28480.					
3. 5801744	-51. 7337905	C	438758565.	19. 9650835	0. 0013102	-0. 0018398
0. 0000656	28794.					
3. 6062506	-52. 8972003	C	435209706.	19. 8840748	0. 0013297	-0. 0018803
0. 0000669	29105.					
3. 6314349	-54. 0618723	C	431757198.	19. 8050749	0. 0013492	-0. 0019208
0. 0000681	29413.					
3. 6557052	-55. 2284486	C	428413693.	19. 7294892	0. 0013687	-0. 0019613
0. 0000694	29721.					
3. 6791962	-56. 3938838	C	425173261.	19. 6571412	0. 0013883	-0. 0020017
0. 0000706	30028.					
3. 7019033	-57. 5581674	C	422030380.	19. 5878671	0. 0014079	-0. 0020421
0. 0000719	30333.					
3. 7238216	-58. 7212892	C	418979907.	19. 5215143	0. 0014275	-0. 0020825
0. 0000731	30638.					
3. 7449463	-59. 8832386	C	416017038.	19. 4579404	0. 0014472	-0. 0021228
0. 0000744	30941.					
3. 7652726	-60. 0000000	CY	404881099.	19. 2208754	0. 0015257	-0. 0022843
0. 0000794	32137.					
3. 8379494	-60. 0000000	CY	393729206.	19. 0036919	0. 0016034	-0. 0024466
0. 0000844	33221.					
3. 8967288	-60. 0000000	CY	381227974.	18. 7772138	0. 0016782	-0. 0026118
0. 0000894	34072.					
3. 9407831	-60. 0000000	CY	367703982.	18. 5439244	0. 0017501	-0. 0027799
0. 0000944	34702.					
3. 9716364	-60. 0000000	CY	354770226.	18. 3232501	0. 0018209	-0. 0029491
0. 0000994	35255.					
3. 9910453	-60. 0000000	CY	342945062.	18. 1267999	0. 0018920	-0. 0031180
0. 0001044	35795.					
3. 9995797	-60. 0000000	CY	331565699.	17. 9405736	0. 0019623	-0. 0032877
0. 0001094	36265.					
3. 9999914	-60. 0000000	CY	319867369.	17. 7438950	0. 0020295	-0. 0034605
0. 0001144	36585.					
3. 9981386	-60. 0000000	CY	308989102.	17. 5667485	0. 0020970	-0. 0036330
0. 0001194	36886.					
3. 9975070	-60. 0000000	CY	298874693.	17. 4025041	0. 0021644	-0. 0038056
0. 0001244	37173.					
3. 9971687	60. 0000000	CY	289467331.	17. 2529342	0. 0022321	-0. 0039779
0. 0001294	37450.					
3. 9986589	60. 0000000	CY	280706679.	17. 1184868	0. 0023003	-0. 0041497
0. 0001344	37720.					
3. 9999693	60. 0000000	CY	272513281.	16. 9950056	0. 0023687	-0. 0043213
0. 0001394	37982.					
3. 9995794	60. 0000000	CY	264743698.	16. 8762879	0. 0024365	-0. 0044935
0. 0001444	38222.					
3. 9983070	60. 0000000	CY	257117067.	16. 7554298	0. 0025028	-0. 0046672
0. 0001494	38407.					
3. 9977673	60. 0000000	CY	249668315.	16. 6339941	0. 0025679	-0. 0048421
0. 0001544	38543.					
3. 9994385	60. 0000000	CY	242613500.	16. 5183518	0. 0026326	-0. 0050174
0. 0001594	38667.					
3. 9963591	60. 0000000	CY	235889800.	16. 4119279	0. 0026977	-0. 0051923
0. 0001644	38774.					
3. 9996747	60. 0000000	CY	229524347.	16. 3157462	0. 0027635	-0. 0053665
0. 0001694	38876.					
3. 9962518	60. 0000000	CY	223433744.	16. 2334853	0. 0028307	-0. 0055393
0. 0001744	38961.					
3. 9996314	60. 0000000	CY				

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0.0001794	39043.		217660949.	16.1584347	0.0028984 -0.0057116
3.9953805	60.0000000	CY			
0.0001844	39119.		212169959.	16.0909213	0.0029668 -0.0058832
3.9992541	60.0000000	CY			
0.0001894	39190.		206945177.	16.0243619	0.0030346 -0.0060554
3.9962087	60.0000000	CYT			
0.0001944	39259.		201974758.	15.9622102	0.0031027 -0.0062273
3.9979052	60.0000000	CYT			
0.0001994	39326.		197246470.	15.9044405	0.0031709 -0.0063991
3.9999405	60.0000000	CYT			
0.0002044	39391.		192737371.	15.8513948	0.0032396 -0.0065704
3.9946333	60.0000000	CYT			
0.0002094	39454.		188436636.	15.8021281	0.0033086 -0.0067414
3.9986267	60.0000000	CYT			
0.0002144	39511.		184307559.	15.7590693	0.0033784 -0.0069116
3.9999908	60.0000000	CYT			
0.0002194	39562.		180338459.	15.7219103	0.0034490 -0.0070810
3.9945812	60.0000000	CYT			
0.0002244	39611.		176540936.	15.6874581	0.0035199 -0.0072501
3.9985634	60.0000000	CYT			
0.0002294	39650.		172859116.	15.6609048	0.0035922 -0.0074178
3.9999996	60.0000000	CYT			
0.0002344	39682.		169310275.	15.6369087	0.0036649 -0.0075851
3.9932266	60.0000000	CYT			
0.0002394	39713.		165903613.	15.6151254	0.0037379 -0.0077521
3.9977987	60.0000000	CYT			
0.0002444	39726.		162561726.	15.5896931	0.0038097 -0.0079203
3.9998384	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 ki ps	Nominal Mom. Cap. i n-ki p	Max. Comp. Strain
1	442.000	31554.604	0.00300000
2	614.000	33758.942	0.00300000
3	793.000	35896.538	0.00300000
4	802.000	35995.448	0.00300000
5	1122.000	39153.815	0.00300000

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

In ACI 318-08, 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 318-08, 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 (Factored) Load	Resistance Bending Factor	Nominal Bending Stiffness	Nominal Moment Capacity	Ultimate (Factored) Axial Thrust	Ultimate Moment
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Capacity No. in-kip	at Ult. for Moment	Mom. Cap. kip-in ²	in-kip	ki ps
1	0.65		31554.604	287.300
20510.492		355182482.211		
2	0.65		33758.942	399.100
21943.312		386829965.771		
3	0.65		35896.538	515.450
23332.749		420028326.701		
4	0.65		35995.448	521.300
23397.040		421740713.598		
5	0.65		39153.815	729.300
25449.979		484140178.340		
1	0.70		31554.604	309.400
22088.223		345891525.188		
2	0.70		33758.942	429.800
23631.259		373290097.674		
3	0.70		35896.538	555.100
25127.576		401655254.065		
4	0.70		35995.448	561.400
25196.813		403110263.729		
5	0.70		39153.815	785.400
27407.670		455849152.620		
1	0.75		31554.604	331.500
23665.953		337892810.588		
2	0.75		33758.942	460.500
25319.207		361811378.287		
3	0.75		35896.538	594.750
26922.404		386240820.055		
4	0.75		35995.448	601.500
26996.586		387492272.394		
5	0.75		39153.815	841.500
29365.361		432294934.615		

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 39000.0 lbs
 Applied moment at pile head = 1598000.0 in-lbs
 Axial thrust load on pile head = 614000.0 lbs

Depth Res.	Soil Es*h feet lb/inch	Deflect. Spr. y inches lb/inch	Bending Distrib. Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi *	Bending Stiffness lb-in ²	Soil p lb/in
0.000	0.00	0.2704	1598000.	39000.	-0.001430	0.000	1.179E+12	
	0.400	0.2636	1789406.	39000.	-0.001423	0.000	1.179E+12	

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0.000	0.000	0.000	0.000	1980790.	39000.	-0.001416	0.000	1.179E+12
0.800	0.2568	0.000	0.000	2172151.	38964.	-0.001407	0.000	1.179E+12
1.200	0.2500	0.000	0.000	2363140.	38823.	-0.001398	0.000	1.179E+12
-15.0003	288.0000	0.000	0.000	2553091.	38547.	-0.001388	0.000	1.179E+12
1.600	0.2433	0.000	0.000	2741377.	38145.	-0.001377	0.000	1.179E+12
-43.7888	864.0000	0.2366	0.000	2927405.	37624.	-0.001366	0.000	1.179E+12
2.000	0.2299	0.000	0.000	3110618.	36991.	-0.001353	0.000	1.179E+12
-70.9751	1440.0000	0.000	0.000	3290497.	36254.	-0.001340	0.000	1.179E+12
2.400	0.2234	0.000	0.000	3466556.	35419.	-0.001327	0.000	1.179E+12
-96.5774	2016.0000	0.000	0.000	3638344.	34495.	-0.001312	0.000	1.179E+12
2.800	0.2234	0.000	0.000	3805444.	33488.	-0.001297	0.000	1.179E+12
-120.6155	2592.0000	0.2168	0.000	3967471.	32404.	-0.001281	0.000	1.179E+12
3.200	0.2104	0.000	0.000	4124075.	31251.	-0.001265	0.000	1.179E+12
-143.1113	3168.0000	0.000	0.000	4274936.	30035.	-0.001248	0.000	1.179E+12
3.600	0.2104	0.000	0.000	4419765.	28762.	-0.001230	0.000	1.179E+12
-164.0880	3744.0000	0.2040	0.000	4558304.	27439.	-0.001212	0.000	1.179E+12
4.000	0.2040	0.000	0.000	4690325.	26072.	-0.001193	0.000	1.178E+12
-183.5707	4320.0000	0.1976	0.000	4815628.	24666.	-0.001173	0.000	1.178E+12
4.400	0.1976	0.000	0.000	4934039.	23228.	-0.001154	0.000	1.178E+12
-201.5862	4896.0000	0.000	0.000	5045415.	21762.	-0.001133	0.000	1.178E+12
4.800	0.1914	0.000	0.000	5149635.	20274.	-0.001112	0.000	1.178E+12
-218.1625	5472.0000	0.1852	0.000	5246605.	18770.	-0.001091	0.000	1.178E+12
5.200	0.1852	0.000	0.000	5336257.	17253.	-0.001070	0.000	1.178E+12
-233.3296	6048.0000	0.1791	0.000	5418541.	15729.	-0.001048	0.000	1.178E+12
5.600	0.1791	0.000	0.000	5493436.	14203.	-0.001026	0.000	1.178E+12
-247.1184	6624.0000	0.1730	0.000	5560936.	12678.	-0.001003	0.000	1.178E+12
6.000	0.1730	0.000	0.000	5621060.	11159.	-0.000980	0.000	1.178E+12
-259.5615	7200.0000	0.1671	0.000	5673844.	9649.9797	-0.000957	0.000	1.178E+12
6.400	0.1671	0.000	0.000	5719342.	8154.0150	-0.000934	0.000	1.178E+12
-270.6927	7776.0000	0.1612	0.000	5757628.	6674.9135	-0.000911	0.000	1.178E+12
6.800	0.1612	0.000	0.000	5788789.	5215.9648	-0.000887	0.000	1.178E+12
-280.5470	8352.0000	0.1555	0.000	0.000				
7.200	0.1555	0.000	0.000					
-289.1605	8928.0000	0.1498	0.000					
7.600	0.1498	0.000	0.000					
-296.5706	9504.0000	0.1442	0.000					
8.000	0.1442	0.000	0.000					
-302.8153	10080.	0.1387	0.000					
8.400	0.1387	0.000	0.000					
-307.9336	10656.	0.1333	0.000					
8.800	0.1333	0.000	0.000					
-311.9655	11232.	0.1280	0.000					
9.200	0.1280	0.000	0.000					
-314.9514	11808.	0.1228	0.000					
9.600	0.1228	0.000	0.000					
-316.9325	12384.	0.1178	0.000					
10.000	0.1178	0.000	0.000					
-317.9506	12960.	0.1128	0.000					
10.400	0.1128	0.000	0.000					
-318.0477	13536.	0.1079	0.000					
10.800	0.1079	0.000	0.000					
-317.2663	14112.	0.1032	0.000					
11.200	0.1032	0.000	0.000					
-315.6492	14688.	0.0985	0.000					
11.600	0.0985	0.000	0.000					
-313.2392	15264.	0.0940	0.000					
12.000	0.0940	0.000	0.000					
-310.0794	15840.	0.0895	0.000					
12.400	0.0895	0.000	0.000					
-306.2129	16416.	0.0852	0.000					
12.800	0.0852	0.000	0.000					
-301.6824	16992.	0.000	0.000					

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13. 200	0. 0810	5812930.	3780. 2527	-0. 000863	0. 000	1. 178E+12
-296. 5309	17568.	0. 000				
13. 600	0. 0769	5830170.	2370. 6561	-0. 000840	0. 000	1. 178E+12
-290. 8010	18144.	0. 000				
14. 000	0. 0730	5840639.	989. 8505	-0. 000816	0. 000	1. 178E+12
-284. 5347	18720.	0. 000				
14. 400	0. 0691	5844482.	-359. 6909	-0. 000792	0. 000	1. 178E+12
-277. 7742	19296.	0. 000				
14. 800	0. 0654	5841855.	-1675. 6945	-0. 000768	0. 000	1. 178E+12
-270. 5607	19872.	0. 000				
15. 200	0. 0617	5832924.	-2956. 0849	-0. 000745	0. 000	1. 178E+12
-262. 9353	20448.	0. 000				
15. 600	0. 0582	5817865.	-4198. 9816	-0. 000721	0. 000	1. 178E+12
-254. 9383	21024.	0. 000				
16. 000	0. 0548	5796863.	-5402. 6965	-0. 000697	0. 000	1. 178E+12
-246. 6095	21600.	0. 000				
16. 400	0. 0515	5770109.	-6565. 7305	-0. 000674	0. 000	1. 178E+12
-237. 9880	22176.	0. 000				
16. 800	0. 0483	5737802.	-7686. 7706	-0. 000650	0. 000	1. 178E+12
-229. 1120	22752.	0. 000				
17. 200	0. 0453	5700148.	-8764. 6858	-0. 000627	0. 000	1. 178E+12
-220. 0192	23328.	0. 000				
17. 600	0. 0423	5657356.	-9798. 5231	-0. 000604	0. 000	1. 178E+12
-210. 7463	23904.	0. 000				
18. 000	0. 0395	5609640.	-10788.	-0. 000581	0. 000	1. 178E+12
-201. 3291	24480.	0. 000				
18. 400	0. 0367	5557219.	-11731.	-0. 000558	0. 000	1. 178E+12
-191. 8026	25056.	0. 000				
18. 800	0. 0341	5500311.	-12629.	-0. 000535	0. 000	1. 178E+12
-182. 2008	25632.	0. 000				
19. 200	0. 0316	5439140.	-13480.	-0. 000513	0. 000	1. 178E+12
-172. 5566	26208.	0. 000				
19. 600	0. 0292	5373927.	-14285.	-0. 000491	0. 000	1. 178E+12
-162. 9022	26784.	0. 000				
20. 000	0. 0269	5304897.	-15044.	-0. 000469	0. 000	1. 178E+12
-153. 2686	27360.	0. 000				
20. 400	0. 0247	5232272.	-15757.	-0. 000448	0. 000	1. 178E+12
-143. 6856	27936.	0. 000				
20. 800	0. 0226	5156273.	-16424.	-0. 000427	0. 000	1. 178E+12
-134. 1821	28512.	0. 000				
21. 200	0. 0206	5077121.	-17431.	-0. 000406	0. 000	1. 178E+12
-285. 6223	66579.	0. 000				
21. 600	0. 0187	4991327.	-18817.	-0. 000385	0. 000	1. 178E+12
-291. 8692	74946.	0. 000				
22. 000	0. 0169	4898749.	-20221.	-0. 000365	0. 000	1. 178E+12
-293. 2261	83322.	0. 000				
22. 400	0. 0152	4799356.	-21621.	-0. 000345	0. 000	1. 178E+12
-290. 1583	91707.	0. 000				
22. 800	0. 0136	4693220.	-22997.	-0. 000326	0. 000	1. 178E+12
-283. 1166	100102.	0. 000				
23. 200	0. 0121	4580505.	-24331.	-0. 000307	0. 000	1. 179E+12
-272. 5368	108508.	0. 000				
23. 600	0. 0106	4461455.	-25606.	-0. 000289	0. 000	1. 179E+12
-258. 8378	116922.	0. 000				
24. 000	0. 009283	4336389.	-26809.	-0. 000271	0. 000	1. 179E+12
-242. 4209	125347.	0. 000				
24. 400	0. 008025	4205684.	-27928.	-0. 000254	0. 000	1. 179E+12
-223. 6690	133781.	0. 000				
24. 800	0. 006849	4069777.	-28952.	-0. 000237	0. 000	1. 179E+12
-202. 9456	142225.	0. 000				
25. 200	0. 005753	3929144.	-29872.	-0. 000220	0. 000	1. 179E+12
-180. 5938	150679.	0. 000				
25. 600	0. 004733	3784303.	-30682.	-0. 000205	0. 000	1. 179E+12

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-156.9362	159142.	0.000					
26.000	0.003788	3635801.	-31376.	-0.000190	0.000	1.179E+12	
-132.2739	167615.	0.000					
26.400	0.002913	3484208.	-31950.	-0.000175	0.000	1.179E+12	
-106.8863	176098.	0.000					
26.800	0.002107	3330111.	-32401.	-0.000161	0.000	1.179E+12	
-81.0310	184591.	0.000					
27.200	0.001366	3174106.	-32728.	-0.000148	0.000	1.179E+12	
-54.9432	193093.	0.000					
27.600	0.000687	3016798.	-32929.	-0.000135	0.000	1.179E+12	
-28.8363	201605.	0.000					
28.000	6.628E-05	2858789.	-33005.	-0.000123	0.000	1.179E+12	
-2.9015	210127.	0.000					
28.400	-0.000498	2700678.	-32957.	-0.000112	0.000	1.179E+12	
22.6916	218658.	0.000					
28.800	-0.001010	2543059.	-32788.	-0.000101	0.000	1.179E+12	
47.7947	227199.	0.000					
29.200	-0.001472	2386509.	-32500.	-9.138E-05	0.000	1.179E+12	
72.2806	235750.	0.000					
29.600	-0.001887	2231597.	-32096.	-8.197E-05	0.000	1.179E+12	
96.0422	244311.	0.000					
30.000	-0.002259	2078870.	-31580.	-7.320E-05	0.000	1.179E+12	
118.9920	252881.	0.000					
30.400	-0.002590	1928861.	-30956.	-6.504E-05	0.000	1.179E+12	
141.0612	261461.	0.000					
30.800	-0.002883	1782078.	-30228.	-5.748E-05	0.000	1.179E+12	
162.1990	270051.	0.000					
31.200	-0.003142	1639011.	-29401.	-5.052E-05	0.000	1.179E+12	
182.3712	278650.	0.000					
31.600	-0.003368	1500126.	-28480.	-4.413E-05	0.000	1.179E+12	
201.5596	287260.	0.000					
32.000	-0.003565	1365866.	-27468.	-3.829E-05	0.000	1.179E+12	
219.7605	295878.	0.000					
32.400	-0.003736	1236654.	-26372.	-3.300E-05	0.000	1.179E+12	
236.9837	304507.	0.000					
32.800	-0.003882	1112887.	-25196.	-2.821E-05	0.000	1.179E+12	
253.2510	313146.	0.000					
33.200	-0.004006	994942.	-23952.	-2.392E-05	0.000	1.179E+12	
265.0608	317559.	0.000					
33.600	-0.004112	883092.	-22662.	-2.010E-05	0.000	1.179E+12	
272.1706	317742.	0.000					
34.000	-0.004199	777501.	-21342.	-1.672E-05	0.000	1.179E+12	
278.1452	317924.	0.000					
34.400	-0.004272	678310.	-19995.	-1.376E-05	0.000	1.179E+12	
283.1196	318106.	0.000					
34.800	-0.004331	585634.	-18626.	-1.118E-05	0.000	1.179E+12	
287.2204	318289.	0.000					
35.200	-0.004379	499569.	-17239.	-8.973E-06	0.000	1.179E+12	
290.5663	318471.	0.000					
35.600	-0.004418	420192.	-15838.	-7.100E-06	0.000	1.179E+12	
293.2678	318653.	0.000					
36.000	-0.004448	347567.	-14425.	-5.537E-06	0.000	1.179E+12	
295.4266	318835.	0.000					
36.400	-0.004471	281744.	-13003.	-4.256E-06	0.000	1.179E+12	
297.1363	319018.	0.000					
36.800	-0.004488	222765.	-11573.	-3.229E-06	0.000	1.179E+12	
298.4816	319200.	0.000					
37.200	-0.004502	170659.	-10138.	-2.428E-06	0.000	1.179E+12	
299.5386	319382.	0.000					
37.600	-0.004512	125453.	-8698.3492	-1.825E-06	0.000	1.179E+12	
300.3745	319565.	0.000					
38.000	-0.004519	87166.	-7254.9356	-1.393E-06	0.000	1.179E+12	
301.0478	319747.	0.000					

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38.400	-0.004525	55814.	-5808.5611	-1.102E-06	0.000	1.179E+12	
301.6082	319929.	0.000					
38.800	-0.004530	31410.	-4359.6702	-9.240E-07	0.000	1.179E+12	
302.0963	320111.	0.000					
39.200	-0.004534	13966.	-2908.5340	-8.316E-07	0.000	1.179E+12	
302.5438	320294.	0.000					
39.600	-0.004538	3492.8274	-1455.2929	-7.961E-07	0.000	1.179E+12	
302.9734	320476.	0.000					
40.000	-0.004542	0.000	0.000	-7.889E-07	0.000	1.179E+12	
303.3987	160329.	0.000					

* 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	=	0.2704458 inches
Computed slope at pile head	=	-0.0014303 radians
Maximum bending moment	=	5844482. inch-lbs
Maximum shear force	=	39000. lbs
Depth of maximum bending moment	=	14.4000000 feet below pile head
Depth of maximum shear force	=	0.8000000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	1

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	23000.0 lbs
Applied moment at pile head	=	1293000.0 in-lbs
Axial thrust load on pile head	=	1122000.0 lbs

Depth Res.	Soil X	Deflect. Spr.	Bending Distrib. Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	Lat. Load	in-lbs	lbs	radians	psi *	lb-in^2	lb/in
lb/inch	lb/inch							
0.000	0.00	0.1739	1293000.000	23000.	-0.000948	0.000	1.141E+12	
0.000	0.400	0.1694	1408491.000	23000.	-0.000942	0.000	1.141E+12	
0.000	0.800	0.1649	1523950.000	23000.	-0.000936	0.000	1.141E+12	
0.000	1.200	0.1604	1639375.000	22977.	-0.000930	0.000	1.141E+12	
-9.6237	288.0000		0.000					
	1.600	0.1559	1754540.000	22886.	-0.000922	0.000	1.141E+12	

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-28.0709	864.0000	0.000					
2.000	0.1515	1869020.	22710.	-0.000915	0.000	1.141E+12	
-45.4619	1440.0000	0.000					
2.400	0.1472	1982409.	22453.	-0.000907	0.000	1.141E+12	
-61.8104	2016.0000	0.000					
2.800	0.1428	2094329.	22119.	-0.000898	0.000	1.141E+12	
-77.1312	2592.0000	0.000					
3.200	0.1385	2204425.	21714.	-0.000889	0.000	1.141E+12	
-91.4403	3168.0000	0.000					
3.600	0.1343	2312364.	21244.	-0.000880	0.000	1.141E+12	
-104.7546	3744.0000	0.000					
4.000	0.1301	2417838.	20711.	-0.000870	0.000	1.141E+12	
-117.0920	4320.0000	0.000					
4.400	0.1260	2520558.	20122.	-0.000859	0.000	1.141E+12	
-128.4716	4896.0000	0.000					
4.800	0.1219	2620262.	19480.	-0.000848	0.000	1.141E+12	
-138.9132	5472.0000	0.000					
5.200	0.1178	2716706.	18790.	-0.000837	0.000	1.141E+12	
-148.4377	6048.0000	0.000					
5.600	0.1138	2809668.	18057.	-0.000826	0.000	1.141E+12	
-157.0670	6624.0000	0.000					
6.000	0.1099	2898948.	17285.	-0.000814	0.000	1.141E+12	
-164.8234	7200.0000	0.000					
6.400	0.1060	2984364.	16477.	-0.000801	0.000	1.141E+12	
-171.7303	7776.0000	0.000					
6.800	0.1022	3065757.	15638.	-0.000788	0.000	1.141E+12	
-177.8119	8352.0000	0.000					
7.200	0.0984	3142983.	14772.	-0.000775	0.000	1.141E+12	
-183.0929	8928.0000	0.000					
7.600	0.0947	3215919.	13882.	-0.000762	0.000	1.141E+12	
-187.5985	9504.0000	0.000					
8.000	0.0911	3284460.	12973.	-0.000748	0.000	1.141E+12	
-191.3549	10080.0000	0.000					
8.400	0.0876	3348518.	12047.	-0.000734	0.000	1.141E+12	
-194.3883	10656.0000	0.000					
8.800	0.0841	3408022.	11108.	-0.000720	0.000	1.141E+12	
-196.7258	11232.0000	0.000					
9.200	0.0806	3462916.	10160.	-0.000706	0.000	1.141E+12	
-198.3945	11808.0000	0.000					
9.600	0.0773	3513160.	9205.2516	-0.000691	0.000	1.141E+12	
-199.4221	12384.0000	0.000					
10.000	0.0740	3558730.	8247.0306	-0.000676	0.000	1.141E+12	
-199.8366	12960.0000	0.000					
10.400	0.0708	3599616.	7288.2242	-0.000661	0.000	1.141E+12	
-199.6660	13536.0000	0.000					
10.800	0.0677	3635819.	6331.5728	-0.000646	0.000	1.141E+12	
-198.9387	14112.0000	0.000					
11.200	0.0646	3667356.	5379.6807	-0.000631	0.000	1.141E+12	
-197.6830	14688.0000	0.000					
11.600	0.0616	3694256.	4435.0157	-0.000615	0.000	1.141E+12	
-195.9274	15264.0000	0.000					
12.000	0.0587	3716558.	3499.9090	-0.000600	0.000	1.141E+12	
-193.7003	15840.0000	0.000					
12.400	0.0559	3734313.	2576.5557	-0.000584	0.000	1.141E+12	
-191.0302	16416.0000	0.000					
12.800	0.0531	3747582.	1667.0147	-0.000568	0.000	1.141E+12	
-187.9453	16992.0000	0.000					
13.200	0.0504	3756436.	773.2093	-0.000552	0.000	1.141E+12	
-184.4736	17568.0000	0.000					
13.600	0.0478	3760955.	-103.0712	-0.000537	0.000	1.141E+12	
-180.6432	18144.0000	0.000					
14.000	0.0453	3761226.	-960.1712	-0.000521	0.000	1.141E+12	
-176.4818	18720.0000	0.000					

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14. 400	0. 0428	3757346.	-1796. 5670	-0. 000505	0. 000	1. 141E+12
-172. 0165	19296.	0. 000				
14. 800	0. 0404	3749417.	-2610. 8655	-0. 000489	0. 000	1. 141E+12
-167. 2745	19872.	0. 000				
15. 200	0. 0381	3737550.	-3401. 8021	-0. 000473	0. 000	1. 141E+12
-162. 2824	20448.	0. 000				
15. 600	0. 0359	3721859.	-4168. 2392	-0. 000458	0. 000	1. 141E+12
-157. 0664	21024.	0. 000				
16. 000	0. 0337	3702465.	-4909. 1638	-0. 000442	0. 000	1. 141E+12
-151. 6522	21600.	0. 000				
16. 400	0. 0316	3679493.	-5623. 6851	-0. 000427	0. 000	1. 141E+12
-146. 0650	22176.	0. 000				
16. 800	0. 0296	3653072.	-6311. 0324	-0. 000411	0. 000	1. 141E+12
-140. 3297	22752.	0. 000				
17. 200	0. 0277	3623336.	-6970. 5520	-0. 000396	0. 000	1. 141E+12
-134. 4702	23328.	0. 000				
17. 600	0. 0258	3590419.	-7601. 7050	-0. 000381	0. 000	1. 141E+12
-128. 5102	23904.	0. 000				
18. 000	0. 0240	3554460.	-8204. 0638	-0. 000366	0. 000	1. 141E+12
-122. 4726	24480.	0. 000				
18. 400	0. 0223	3515598.	-8777. 3095	-0. 000351	0. 000	1. 141E+12
-116. 3798	25056.	0. 000				
18. 800	0. 0206	3473976.	-9321. 2288	-0. 000336	0. 000	1. 141E+12
-110. 2533	25632.	0. 000				
19. 200	0. 0191	3429735.	-9835. 7105	-0. 000322	0. 000	1. 141E+12
-104. 1141	26208.	0. 000				
19. 600	0. 0176	3383017.	-10321.	-0. 000307	0. 000	1. 141E+12
-97. 9825	26784.	0. 000				
20. 000	0. 0161	3333965.	-10776.	-0. 000293	0. 000	1. 141E+12
-91. 8780	27360.	0. 000				
20. 400	0. 0147	3282721.	-11203.	-0. 000279	0. 000	1. 141E+12
-85. 8195	27936.	0. 000				
20. 800	0. 0134	3229425.	-11600.	-0. 000266	0. 000	1. 141E+12
-79. 8250	28512.	0. 000				
21. 200	0. 0122	3174216.	-12198.	-0. 000252	0. 000	1. 141E+12
-169. 1768	66579.	0. 000				
21. 600	0. 0110	3115038.	-13017.	-0. 000239	0. 000	1. 141E+12
-172. 0454	74946.	0. 000				
22. 000	0. 009904	3051826.	-13842.	-0. 000226	0. 000	1. 141E+12
-171. 9198	83322.	0. 000				
22. 400	0. 008851	2984583.	-14661.	-0. 000213	0. 000	1. 141E+12
-169. 0980	91707.	0. 000				
22. 800	0. 007858	2913377.	-15460.	-0. 000201	0. 000	1. 141E+12
-163. 8682	100102.	0. 000				
23. 200	0. 006923	2838329.	-16229.	-0. 000189	0. 000	1. 141E+12
-156. 5080	108508.	0. 000				
23. 600	0. 006046	2759611.	-16958.	-0. 000177	0. 000	1. 141E+12
-147. 2837	116922.	0. 000				
24. 000	0. 005225	2677437.	-17639.	-0. 000165	0. 000	1. 141E+12
-136. 4498	125347.	0. 000				
24. 400	0. 004458	2592059.	-18265.	-0. 000154	0. 000	1. 141E+12
-124. 2485	133781.	0. 000				
24. 800	0. 003743	2503759.	-18829.	-0. 000144	0. 000	1. 141E+12
-110. 9088	142225.	0. 000				
25. 200	0. 003079	2412848.	-19327.	-0. 000133	0. 000	1. 141E+12
-96. 6467	150679.	0. 000				
25. 600	0. 002463	2319654.	-19755.	-0. 000123	0. 000	1. 141E+12
-81. 6642	159142.	0. 000				
26. 000	0. 001894	2224527.	-20110.	-0. 000114	0. 000	1. 141E+12
-66. 1495	167615.	0. 000				
26. 400	0. 001370	2127826.	-20389.	-0. 000105	0. 000	1. 141E+12
-50. 2767	176098.	0. 000				
26. 800	0. 000889	2029917.	-20592.	-9. 593E-05	0. 000	1. 141E+12

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-34. 2056	184591.	0. 000					
27. 200	0. 000449	1931175.	-20718.	-8. 760E-05	0. 000	1. 141E+12	
-18. 0818	193093.	0. 000					
27. 600	4. 849E-05	1831972.	-20766.	-7. 969E-05	0. 000	1. 141E+12	
-2. 0366	201605.	0. 000					
28. 000	-0. 000316	1732681.	-20738.	-7. 219E-05	0. 000	1. 141E+12	
13. 8128	210127.	0. 000					
28. 400	-0. 000645	1633669.	-20634.	-6. 512E-05	0. 000	1. 141E+12	
29. 3629	218658.	0. 000					
28. 800	-0. 000941	1535296.	-20457.	-5. 845E-05	0. 000	1. 141E+12	
44. 5237	227199.	0. 000					
29. 200	-0. 001206	1437915.	-20208.	-5. 220E-05	0. 000	1. 141E+12	
59. 2187	235750.	0. 000					
29. 600	-0. 001442	1341865.	-19889.	-4. 636E-05	0. 000	1. 141E+12	
73. 3839	244311.	0. 000					
30. 000	-0. 001651	1247476.	-19505.	-4. 091E-05	0. 000	1. 141E+12	
86. 9675	252881.	0. 000					
30. 400	-0. 001835	1155062.	-19056.	-3. 586E-05	0. 000	1. 141E+12	
99. 9294	261461.	0. 000					
30. 800	-0. 001995	1064925.	-18547.	-3. 119E-05	0. 000	1. 141E+12	
112. 2408	270051.	0. 000					
31. 200	-0. 002134	977349.	-17980.	-2. 690E-05	0. 000	1. 141E+12	
123. 8831	278650.	0. 000					
31. 600	-0. 002253	892605.	-17359.	-2. 297E-05	0. 000	1. 141E+12	
134. 8473	287260.	0. 000					
32. 000	-0. 002354	810948.	-16687.	-1. 939E-05	0. 000	1. 141E+12	
145. 1335	295878.	0. 000					
32. 400	-0. 002439	732617.	-15967.	-1. 614E-05	0. 000	1. 141E+12	
154. 7498	304507.	0. 000					
32. 800	-0. 002509	657834.	-15203.	-1. 322E-05	0. 000	1. 141E+12	
163. 7116	313146.	0. 000					
33. 200	-0. 002566	586809.	-14403.	-1. 060E-05	0. 000	1. 141E+12	
169. 7769	317559.	0. 000					
33. 600	-0. 002611	519682.	-13580.	-8. 273E-06	0. 000	1. 141E+12	
172. 8501	317742.	0. 000					
34. 000	-0. 002646	456525.	-12745.	-6. 220E-06	0. 000	1. 141E+12	
175. 2319	317924.	0. 000					
34. 400	-0. 002671	397396.	-11900.	-4. 425E-06	0. 000	1. 141E+12	
177. 0057	318106.	0. 000					
34. 800	-0. 002688	342336.	-11047.	-2. 869E-06	0. 000	1. 141E+12	
178. 2494	318289.	0. 000					
35. 200	-0. 002698	291374.	-10190.	-1. 537E-06	0. 000	1. 141E+12	
179. 0360	318471.	0. 000					
35. 600	-0. 002703	244532.	-9329. 3039	-4. 099E-07	0. 000	1. 141E+12	
179. 4329	318653.	0. 000					
36. 000	-0. 002702	201817.	-8467. 8592	5. 286E-07	0. 000	1. 141E+12	
179. 5023	318835.	0. 000					
36. 400	-0. 002698	163234.	-7606. 7313	1. 296E-06	0. 000	1. 141E+12	
179. 3009	319018.	0. 000					
36. 800	-0. 002690	128779.	-6747. 0968	1. 910E-06	0. 000	1. 141E+12	
178. 8801	319200.	0. 000					
37. 200	-0. 002679	98442.	-5889. 8990	2. 388E-06	0. 000	1. 141E+12	
178. 2857	319382.	0. 000					
37. 600	-0. 002667	72210.	-5035. 8737	2. 747E-06	0. 000	1. 141E+12	
177. 5582	319565.	0. 000					
38. 000	-0. 002653	50068.	-4185. 5757	3. 004E-06	0. 000	1. 141E+12	
176. 7326	319747.	0. 000					
38. 400	-0. 002638	31996.	-3339. 4045	3. 176E-06	0. 000	1. 141E+12	
175. 8387	319929.	0. 000					
38. 800	-0. 002623	17975.	-2497. 6304	3. 281E-06	0. 000	1. 141E+12	
174. 9005	320111.	0. 000					
39. 200	-0. 002607	7983. 6564	-1660. 4204	3. 336E-06	0. 000	1. 141E+12	
173. 9370	320294.	0. 000					

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39.600	-0.002591	1999.3351	-827.8642	3.357E-06	0.000	1.141E+12
172.9614	320476.	0.000				
40.000	-0.002574	0.000	0.000	3.361E-06	0.000	1.141E+12
171.9820	160329.	0.000				

* 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	=	0.1739190 inches
Computed slope at pile head	=	-0.0009480 radians
Maximum bending moment	=	3761226. inch-lbs
Maximum shear force	=	23000. lbs
Depth of maximum bending moment	=	14.0000000 feet below pile head
Depth of maximum shear force	=	0.8000000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	1

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	36000.0 lbs
Applied moment at pile head	=	6075000.0 in-lbs
Axial thrust load on pile head	=	793000.0 lbs

Depth Res.	Soil	Deflect. Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	y Lat. Load	Moment	lbs	radians	psi *	lb-in^2	lb/in
lb/inch	lb/inch	in-lbs						
0.000	0.00	0.3844	6075000.000	36000.	-0.002323	0.000	1.165E+12	
0.000	0.400	0.3733	6256595.000	36000.	-0.002298	0.000	1.165E+12	
0.000	0.800	0.3623	6438092.000	36000.	-0.002272	0.000	1.165E+12	
-16.4023	1.200	0.3515	6619488.000	35961.	-0.002245	0.000	1.165E+12	
-50.3304	1.600	0.3408	6800403.000	35800.	-0.002217	0.000	1.165E+12	
-85.3602	2.000	0.3302	6980051.000	35475.	-0.002189	0.000	1.164E+12	
-121.0157	2.400	0.3198	7157623.000	34980.	-0.002159	0.000	1.164E+12	
	2.800	0.3095	7332294.000	34313.	-0.002130	0.000	1.164E+12	

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-156.	8214	2432.4699	0.000					
	3.200	0.2993	7503237.	33473.	-0.002099	0.000	1.164E+12	
-192.	9142	3093.7794	0.000					
	3.600	0.2893	7669618.	32469.	-0.002068	0.000	1.164E+12	
-225.	6581	3744.0000	0.000					
	4.000	0.2795	7830679.	31324.	-0.002036	0.000	1.164E+12	
-251.	5104	4320.0000	0.000					
	4.400	0.2698	7985822.	30060.	-0.002003	0.000	1.163E+12	
-275.	1570	4896.0000	0.000					
	4.800	0.2602	8134500.	28687.	-0.001970	0.000	1.163E+12	
-296.	6573	5472.0000	0.000					
	5.200	0.2509	8276215.	27217.	-0.001936	0.000	1.163E+12	
-316.	0720	6048.0000	0.000					
	5.600	0.2416	8410519.	25658.	-0.001902	0.000	1.163E+12	
-333.	4630	6624.0000	0.000					
	6.000	0.2326	8537006.	24020.	-0.001867	0.000	1.162E+12	
-348.	8934	7200.0000	0.000					
	6.400	0.2237	8655322.	22313.	-0.001831	0.000	1.162E+12	
-362.	4273	7776.0000	0.000					
	6.800	0.2150	8765151.	20545.	-0.001795	0.000	1.162E+12	
-374.	1298	8352.0000	0.000					
	7.200	0.2065	8866222.	18726.	-0.001759	0.000	1.162E+12	
-384.	0666	8928.0000	0.000					
	7.600	0.1981	8958304.	16862.	-0.001722	0.000	1.162E+12	
-392.	3045	9504.0000	0.000					
	8.000	0.1900	9041207.	14963.	-0.001685	0.000	1.161E+12	
-398.	9106	10080.	0.000					
	8.400	0.1820	9114778.	13036.	-0.001647	0.000	1.161E+12	
-403.	9525	10656.	0.000					
	8.800	0.1741	9178897.	11089.	-0.001609	0.000	1.161E+12	
-407.	4984	11232.	0.000					
	9.200	0.1665	9233483.	9127.9034	-0.001571	0.000	1.161E+12	
-409.	6164	11808.	0.000					
	9.600	0.1591	9278487.	7159.9240	-0.001533	0.000	1.161E+12	
-410.	3750	12384.	0.000					
	10.000	0.1518	9313889.	5191.4017	-0.001495	0.000	1.161E+12	
-409.	8426	12960.	0.000					
	10.400	0.1447	9339703.	3228.3696	-0.001456	0.000	1.161E+12	
-408.	0875	13536.	0.000					
	10.800	0.1378	9355966.	1276.5333	-0.001417	0.000	1.161E+12	
-405.	1777	14112.	0.000					
	11.200	0.1311	9362748.	-658.7274	-0.001379	0.000	1.161E+12	
-401.	1810	14688.	0.000					
	11.600	0.1246	9360138.	-2572.3568	-0.001340	0.000	1.161E+12	
-396.	1646	15264.	0.000					
	12.000	0.1182	9348254.	-4459.6206	-0.001301	0.000	1.161E+12	
-390.	1953	15840.	0.000					
	12.400	0.1121	9327233.	-6316.1036	-0.001263	0.000	1.161E+12	
-383.	3392	16416.	0.000					
	12.800	0.1061	9297232.	-8137.7053	-0.001224	0.000	1.161E+12	
-375.	6615	16992.	0.000					
	13.200	0.1003	9258430.	-9920.6370	-0.001186	0.000	1.161E+12	
-367.	2267	17568.	0.000					
	13.600	0.0947	9211022.	-11661.	-0.001148	0.000	1.161E+12	
-358.	0982	18144.	0.000					
	14.000	0.0893	9155218.	-13357.	-0.001110	0.000	1.161E+12	
-348.	3384	18720.	0.000					
	14.400	0.0841	9091244.	-15004.	-0.001072	0.000	1.161E+12	
-338.	0087	19296.	0.000					
	14.800	0.0790	9019339.	-16601.	-0.001035	0.000	1.162E+12	
-327.	1691	19872.	0.000					
	15.200	0.0741	8939755.	-18144.	-0.000997	0.000	1.162E+12	
-315.	8783	20448.	0.000					

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15. 600	0. 0695	8852752.	-19632.	-0. 000961	0. 000	1. 162E+12
-304. 1937	21024.	0. 000				
16. 000	0. 0649	8758601.	-21063.	-0. 000924	0. 000	1. 162E+12
-292. 1713	21600.	0. 000				
16. 400	0. 0606	8657581.	-22436.	-0. 000888	0. 000	1. 162E+12
-279. 8655	22176.	0. 000				
16. 800	0. 0564	8549977.	-23749.	-0. 000853	0. 000	1. 162E+12
-267. 3293	22752.	0. 000				
17. 200	0. 0524	8436079.	-25002.	-0. 000818	0. 000	1. 163E+12
-254. 6139	23328.	0. 000				
17. 600	0. 0485	8316182.	-26193.	-0. 000783	0. 000	1. 163E+12
-241. 7689	23904.	0. 000				
18. 000	0. 0449	8190584.	-27323.	-0. 000749	0. 000	1. 163E+12
-228. 8423	24480.	0. 000				
18. 400	0. 0414	8059585.	-28390.	-0. 000716	0. 000	1. 163E+12
-215. 8803	25056.	0. 000				
18. 800	0. 0380	7923486.	-29395.	-0. 000683	0. 000	1. 163E+12
-202. 9273	25632.	0. 000				
19. 200	0. 0348	7782586.	-30338.	-0. 000650	0. 000	1. 164E+12
-190. 0258	26208.	0. 000				
19. 600	0. 0318	7637187.	-31220.	-0. 000618	0. 000	1. 164E+12
-177. 2166	26784.	0. 000				
20. 000	0. 0289	7487584.	-32040.	-0. 000587	0. 000	1. 164E+12
-164. 5388	27360.	0. 000				
20. 400	0. 0261	7334073.	-32800.	-0. 000557	0. 000	1. 164E+12
-152. 0293	27936.	0. 000				
20. 800	0. 0235	7176944.	-33500.	-0. 000527	0. 000	1. 164E+12
-139. 7233	28512.	0. 000				
21. 200	0. 0211	7016483.	-34537.	-0. 000497	0. 000	1. 164E+12
-292. 1871	66579.	0. 000				
21. 600	0. 0187	6849180.	-35940.	-0. 000469	0. 000	1. 165E+12
-292. 7008	74946.	0. 000				
22. 000	0. 0166	6675025.	-37333.	-0. 000441	0. 000	1. 165E+12
-287. 5176	83322.	0. 000				
22. 400	0. 0145	6494142.	-38688.	-0. 000414	0. 000	1. 165E+12
-277. 2672	91707.	0. 000				
22. 800	0. 0126	6306768.	-39984.	-0. 000388	0. 000	1. 165E+12
-262. 5542	100102.	0. 000				
23. 200	0. 0108	6113247.	-41200.	-0. 000362	0. 000	1. 165E+12
-243. 9570	108508.	0. 000				
23. 600	0. 009115	5914008.	-42318.	-0. 000337	0. 000	1. 165E+12
-222. 0261	116922.	0. 000				
24. 000	0. 007555	5709562.	-43324.	-0. 000313	0. 000	1. 165E+12
-197. 2841	125347.	0. 000				
24. 400	0. 006108	5500480.	-44206.	-0. 000290	0. 000	1. 165E+12
-170. 2243	133781.	0. 000				
24. 800	0. 004769	5287391.	-44954.	-0. 000268	0. 000	1. 165E+12
-141. 3102	142225.	0. 000				
25. 200	0. 003535	5070962.	-45559.	-0. 000247	0. 000	1. 166E+12
-110. 9753	150679.	0. 000				
25. 600	0. 002402	4851898.	-46017.	-0. 000226	0. 000	1. 166E+12
-79. 6223	159142.	0. 000				
26. 000	0. 001364	4630922.	-46322.	-0. 000207	0. 000	1. 166E+12
-47. 6232	167615.	0. 000				
26. 400	0. 000418	4408777.	-46473.	-0. 000188	0. 000	1. 166E+12
-15. 3193	176098.	0. 000				
26. 800	-0. 000442	4186210.	-46469.	-0. 000170	0. 000	1. 166E+12
16. 9787	184591.	0. 000				
27. 200	-0. 001218	3963969.	-46311.	-0. 000154	0. 000	1. 166E+12
48. 9907	193093.	0. 000				
27. 600	-0. 001916	3742794.	-46000.	-0. 000138	0. 000	1. 166E+12
80. 4662	201605.	0. 000				
28. 000	-0. 002540	3523414.	-45540.	-0. 000123	0. 000	1. 166E+12

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111.	1840	210127.	0.000				
	28.400	-0.003094	3306541.	-44935.	-0.000109	0.000	1.166E+12
140.	9516	218658.	0.000				
	28.800	-0.003583	3092863.	-44190.	-9.551E-05	0.000	1.166E+12
169.	6039	227199.	0.000				
	29.200	-0.004011	2883045.	-43310.	-8.321E-05	0.000	1.166E+12
197.	0025	235750.	0.000				
	29.600	-0.004382	2677720.	-42302.	-7.176E-05	0.000	1.166E+12
223.	0345	244311.	0.000				
	30.000	-0.004700	2477492.	-41172.	-6.115E-05	0.000	1.166E+12
247.	6110	252881.	0.000				
	30.400	-0.004969	2282931.	-39929.	-5.135E-05	0.000	1.166E+12
270.	6662	261461.	0.000				
	30.800	-0.005193	2094569.	-38578.	-4.233E-05	0.000	1.166E+12
292.	1554	270051.	0.000				
	31.200	-0.005375	1912907.	-37128.	-3.409E-05	0.000	1.166E+12
312.	0539	278650.	0.000				
	31.600	-0.005520	1738403.	-35586.	-2.657E-05	0.000	1.166E+12
330.	3552	287260.	0.000				
	32.000	-0.005630	1571484.	-33960.	-1.975E-05	0.000	1.166E+12
347.	0693	295878.	0.000				
	32.400	-0.005710	1412537.	-32258.	-1.361E-05	0.000	1.166E+12
362.	2212	304507.	0.000				
	32.800	-0.005761	1261913.	-30486.	-8.106E-06	0.000	1.166E+12
375.	8488	313146.	0.000				
	33.200	-0.005788	1119930.	-28665.	-3.203E-06	0.000	1.166E+12
382.	8960	317559.	0.000				
	33.600	-0.005792	986750.	-26826.	1.134E-06	0.000	1.166E+12
383.	4010	317742.	0.000				
	34.000	-0.005777	862388.	-24988.	4.940E-06	0.000	1.166E+12
382.	6148	317924.	0.000				
	34.400	-0.005744	746829.	-23156.	8.253E-06	0.000	1.166E+12
380.	6979	318106.	0.000				
	34.800	-0.005697	640029.	-21336.	1.111E-05	0.000	1.166E+12
377.	8000	318289.	0.000				
	35.200	-0.005638	541923.	-19531.	1.354E-05	0.000	1.166E+12
374.	0592	318471.	0.000				
	35.600	-0.005567	452428.	-17746.	1.559E-05	0.000	1.166E+12
369.	6029	318653.	0.000				
	36.000	-0.005488	371441.	-15984.	1.728E-05	0.000	1.166E+12
364.	5474	318835.	0.000				
	36.400	-0.005402	298847.	-14248.	1.866E-05	0.000	1.166E+12
358.	9980	319018.	0.000				
	36.800	-0.005309	234520.	-12539.	1.976E-05	0.000	1.166E+12
353.	0493	319200.	0.000				
	37.200	-0.005212	178323.	-10859.	2.061E-05	0.000	1.166E+12
346.	7852	319382.	0.000				
	37.600	-0.005111	130114.	-9210.3185	2.125E-05	0.000	1.166E+12
340.	2790	319565.	0.000				
	38.000	-0.005008	89743.	-7593.0233	2.170E-05	0.000	1.166E+12
333.	5940	319747.	0.000				
	38.400	-0.004903	57056.	-6008.1191	2.200E-05	0.000	1.166E+12
326.	7828	319929.	0.000				
	38.800	-0.004797	31897.	-4456.1078	2.218E-05	0.000	1.166E+12
319.	8885	320111.	0.000				
	39.200	-0.004690	14108.	-2937.3095	2.228E-05	0.000	1.166E+12
312.	9441	320294.	0.000				
	39.600	-0.004583	3529.3226	-1451.9086	2.232E-05	0.000	1.166E+12
305.	9729	320476.	0.000				
	40.000	-0.004476	0.000	0.000	2.232E-05	0.000	1.166E+12
298.	9890	160329.	0.000				

* This analysis computed pile response using nonlinear moment-curvature

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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 = 0.3843691 inches
 Computed slope at pile head = -0.0023231 radians
 Maximum bending moment = 9362748. inch-lbs
 Maximum shear force = -46473. lbs
 Depth of maximum bending moment = 11.2000000 feet below pile head
 Depth of maximum shear force = 26.4000000 feet below pile head
 Number of iterations = 6
 Number of zero deflection points = 1

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 30000.0 lbs
 Applied moment at pile head = 10166000.0 in-lbs
 Axial thrust load on pile head = 802000.0 lbs

Depth Res.	Soil	Deflect. Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	y Lat.	Load Moment	lbs	radians	psi *	lb-in^2	lb/in
lb/inch	lb/inch	lb/inch	in-lbs					
0.000	0.00	0.5705	10166000.000	30000.	-0.004082	0.000	1.107E+12	
0.000	0.400	0.5510	10325628.000	30000.	-0.004037	0.000	1.107E+12	
0.000	0.800	0.5318	10485084.000	30000.	-0.003985	0.000	8.480E+11	
0.000	1.200	0.5128	10644311.000	29957.	-0.003925	0.000	8.363E+11	
-18.0965	169.3972	0.4941	10802886.000	29780.	-0.003863	0.000	8.250E+11	
-55.5376	539.5449	0.4757	10959940.000	29420.	-0.003799	0.000	8.137E+11	
-94.2052	950.5841	0.4576	11114574.000	28874.	-0.003734	0.000	8.030E+11	
-133.5736	1401.0894	0.4398	11265875.000	28138.	-0.003666	0.000	7.926E+11	
-173.1169	1889.2001	0.4224	11412925.000	27211.	-0.003597	0.000	7.827E+11	
-212.8313	2418.4629	0.4053	11554802.000	26094.	-0.003526	0.000	7.734E+11	
-252.6160	2991.6484	0.3886	11690582.000	24788.	-0.003454	0.000	7.645E+11	

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-291.6496	3602.8434	0.000					
4.400	0.3722	11819360.	23297.	-0.003380	0.000	7.564E+11	
-329.5144	4250.0088	0.000					
4.800	0.3561	11940257.	21629.	-0.003304	0.000	7.488E+11	
-365.8027	4930.5899	0.000					
5.200	0.3404	12052432.	19789.	-0.003227	0.000	7.420E+11	
-400.7814	5650.7934	0.000					
5.600	0.3251	12155073.	17785.	-0.003148	0.000	7.357E+11	
-434.3394	6412.1330	0.000					
6.000	0.3102	12247401.	15625.	-0.003068	0.000	7.302E+11	
-465.3270	7200.0000	0.000					
6.400	0.2957	12328697.	13359.	-0.002987	0.000	7.254E+11	
-479.0086	7776.0000	0.000					
6.800	0.2815	12398644.	11034.	-0.002905	0.000	7.212E+11	
-489.8834	8352.0000	0.000					
7.200	0.2678	12456986.	8662.3975	-0.002822	0.000	7.179E+11	
-498.1008	8928.0000	0.000					
7.600	0.2544	12503531.	6257.8098	-0.002739	0.000	7.152E+11	
-503.8108	9504.0000	0.000					
8.000	0.2415	12538145.	3831.4716	-0.002654	0.000	7.132E+11	
-507.1635	10080.	0.000					
8.400	0.2290	12560750.	1394.3377	-0.002570	0.000	7.119E+11	
-508.3090	10656.	0.000					
8.800	0.2168	12571317.	-1043.3553	-0.002485	0.000	7.113E+11	
-507.3965	11232.	0.000					
9.200	0.2051	12569866.	-3472.0845	-0.002400	0.000	7.114E+11	
-504.5740	11808.	0.000					
9.600	0.1938	12556464.	-5883.0332	-0.002316	0.000	7.122E+11	
-499.9880	12384.	0.000					
10.000	0.1829	12531217.	-8268.0823	-0.002231	0.000	7.136E+11	
-493.7825	12960.	0.000					
10.400	0.1724	12494268.	-10620.	-0.002147	0.000	7.157E+11	
-486.0992	13536.	0.000					
10.800	0.1623	12445797.	-12931.	-0.002064	0.000	7.185E+11	
-477.0768	14112.	0.000					
11.200	0.1526	12386014.	-15197.	-0.001981	0.000	7.220E+11	
-466.8505	14688.	0.000					
11.600	0.1433	12315158.	-17411.	-0.001899	0.000	7.262E+11	
-455.5519	15264.	0.000					
12.000	0.1343	12233493.	-19568.	-0.001818	0.000	7.310E+11	
-443.3081	15840.	0.000					
12.400	0.1258	12141304.	-21664.	-0.001738	0.000	7.365E+11	
-430.2424	16416.	0.000					
12.800	0.1176	12038898.	-23697.	-0.001660	0.000	7.428E+11	
-416.4731	16992.	0.000					
13.200	0.1099	11926597.	-25661.	-0.001583	0.000	7.496E+11	
-402.1136	17568.	0.000					
13.600	0.1025	11804738.	-27556.	-0.001507	0.000	7.573E+11	
-387.2724	18144.	0.000					
14.000	0.0954	11673667.	-29378.	-0.001433	0.000	7.656E+11	
-372.0524	18720.	0.000					
14.400	0.0887	11533743.	-31127.	-0.001361	0.000	7.748E+11	
-356.5515	19296.	0.000					
14.800	0.0823	11385329.	-32800.	-0.001290	0.000	7.846E+11	
-340.8617	19872.	0.000					
15.200	0.0763	11228793.	-34399.	-0.001222	0.000	7.951E+11	
-325.0696	20448.	0.000					
15.600	0.0706	11064506.	-35921.	-0.001155	0.000	8.065E+11	
-309.2563	21024.	0.000					
16.000	0.0652	10892841.	-37368.	-0.001090	0.000	8.185E+11	
-293.4972	21600.	0.000					
16.400	0.0601	10714168.	-38739.	-0.001027	0.000	8.312E+11	
-277.8624	22176.	0.000					

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16. 800	0. 0554	10528854.	-40036.	-0. 000966	0. 000	8. 448E+11
-262. 4166	22752.	0. 000				
17. 200	0. 0509	10337265.	-41259.	-0. 000907	0. 000	8. 594E+11
-247. 2188	23328.	0. 000				
17. 600	0. 0467	10139757.	-42410.	-0. 000856	0. 000	1. 104E+12
-232. 3226	23904.	0. 000				
18. 000	0. 0426	9936726.	-43489.	-0. 000814	0. 000	1. 159E+12
-217. 4932	24480.	0. 000				
18. 400	0. 0388	9728527.	-44498.	-0. 000773	0. 000	1. 160E+12
-202. 7335	25056.	0. 000				
18. 800	0. 0352	9515501.	-45436.	-0. 000733	0. 000	1. 160E+12
-188. 0922	25632.	0. 000				
19. 200	0. 0318	9297990.	-46304.	-0. 000694	0. 000	1. 160E+12
-173. 6152	26208.	0. 000				
19. 600	0. 0286	9076330.	-47103.	-0. 000656	0. 000	1. 161E+12
-159. 3461	26784.	0. 000				
20. 000	0. 0255	8850856.	-47834.	-0. 000619	0. 000	1. 161E+12
-145. 3260	27360.	0. 000				
20. 400	0. 0226	8621891.	-48499.	-0. 000583	0. 000	1. 162E+12
-131. 5933	27936.	0. 000				
20. 800	0. 0199	8389758.	-49098.	-0. 000548	0. 000	1. 162E+12
-118. 1838	28512.	0. 000				
21. 200	0. 0173	8154769.	-49959.	-0. 000514	0. 000	1. 162E+12
-240. 6337	66579.	0. 000				
21. 600	0. 0150	7914105.	-51098.	-0. 000481	0. 000	1. 163E+12
-233. 6121	74946.	0. 000				
22. 000	0. 0127	7667934.	-52189.	-0. 000449	0. 000	1. 163E+12
-221. 0195	83322.	0. 000				
22. 400	0. 0107	7416548.	-53208.	-0. 000418	0. 000	1. 163E+12
-203. 5693	91707.	0. 000				
22. 800	0. 008724	7160355.	-54133.	-0. 000387	0. 000	1. 164E+12
-181. 9403	100102.	0. 000				
23. 200	0. 006935	6899855.	-54946.	-0. 000358	0. 000	1. 164E+12
-156. 7759	108508.	0. 000				
23. 600	0. 005283	6635634.	-55631.	-0. 000331	0. 000	1. 164E+12
-128. 6837	116922.	0. 000				
24. 000	0. 003762	6368343.	-56176.	-0. 000304	0. 000	1. 164E+12
-98. 2347	125347.	0. 000				
24. 400	0. 002367	6098688.	-56570.	-0. 000278	0. 000	1. 165E+12
-65. 9630	133781.	0. 000				
24. 800	0. 001092	5827416.	-56806.	-0. 000253	0. 000	1. 165E+12
-32. 3660	142225.	0. 000				
25. 200	-6. 678E-05	5555305.	-56878.	-0. 000230	0. 000	1. 165E+12
2. 0963	150679.	0. 000				
25. 600	-0. 001116	5283155.	-56784.	-0. 000208	0. 000	1. 165E+12
37. 0004	159142.	0. 000				
26. 000	-0. 002061	5011774.	-56523.	-0. 000186	0. 000	1. 165E+12
71. 9597	167615.	0. 000				
26. 400	-0. 002906	4741971.	-56094.	-0. 000166	0. 000	1. 165E+12
106. 6237	176098.	0. 000				
26. 800	-0. 003658	4474550.	-55501.	-0. 000147	0. 000	1. 165E+12
140. 6772	184591.	0. 000				
27. 200	-0. 004321	4210298.	-54746.	-0. 000130	0. 000	1. 165E+12
173. 8399	193093.	0. 000				
27. 600	-0. 004901	3949985.	-53835.	-0. 000113	0. 000	1. 165E+12
205. 8652	201605.	0. 000				
28. 000	-0. 005403	3694353.	-52773.	-9. 696E-05	0. 000	1. 165E+12
236. 5390	210127.	0. 000				
28. 400	-0. 005832	3444112.	-51568.	-8. 225E-05	0. 000	1. 165E+12
265. 6788	218658.	0. 000				
28. 800	-0. 006193	3199937.	-50226.	-6. 856E-05	0. 000	1. 165E+12
293. 1320	227199.	0. 000				
29. 200	-0. 006490	2962466.	-48758.	-5. 587E-05	0. 000	1. 165E+12

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318.	7742	235750.	0.000				
	29.600	-0.006729	2732292.	-47171.	-4.414E-05	0.000	1.165E+12
342.	5084	244311.	0.000				
	30.000	-0.006914	2509966.	-45475.	-3.334E-05	0.000	1.165E+12
364.	2622	252881.	0.000				
	30.400	-0.007049	2295993.	-43679.	-2.344E-05	0.000	1.165E+12
383.	9869	261461.	0.000				
	30.800	-0.007139	2090831.	-41793.	-1.441E-05	0.000	1.165E+12
401.	6553	270051.	0.000				
	31.200	-0.007188	1894890.	-39828.	-6.196E-06	0.000	1.165E+12
417.	2597	278650.	0.000				
	31.600	-0.007199	1708532.	-37792.	1.226E-06	0.000	1.165E+12
430.	8101	287260.	0.000				
	32.000	-0.007176	1532073.	-35697.	7.901E-06	0.000	1.165E+12
442.	3320	295878.	0.000				
	32.400	-0.007123	1365781.	-33551.	1.387E-05	0.000	1.165E+12
451.	8648	304507.	0.000				
	32.800	-0.007043	1209878.	-31364.	1.918E-05	0.000	1.165E+12
459.	4593	313146.	0.000				
	33.200	-0.006939	1064542.	-29159.	2.386E-05	0.000	1.165E+12
459.	0551	317559.	0.000				
	33.600	-0.006814	929766.	-26975.	2.797E-05	0.000	1.165E+12
451.	0406	317742.	0.000				
	34.000	-0.006670	805367.	-24832.	3.154E-05	0.000	1.165E+12
441.	7990	317924.	0.000				
	34.400	-0.006511	691134.	-22736.	3.462E-05	0.000	1.165E+12
431.	4911	318106.	0.000				
	34.800	-0.006338	586832.	-20692.	3.726E-05	0.000	1.165E+12
420.	2648	318289.	0.000				
	35.200	-0.006153	492204.	-18704.	3.948E-05	0.000	1.165E+12
408.	2556	318471.	0.000				
	35.600	-0.005959	406974.	-16774.	4.133E-05	0.000	1.165E+12
395.	5861	318653.	0.000				
	36.000	-0.005756	330852.	-14907.	4.285E-05	0.000	1.165E+12
382.	3674	318835.	0.000				
	36.400	-0.005548	263534.	-13105.	4.407E-05	0.000	1.165E+12
368.	6986	319018.	0.000				
	36.800	-0.005333	204707.	-11369.	4.504E-05	0.000	1.165E+12
354.	6673	319200.	0.000				
	37.200	-0.005115	154048.	-9700.6151	4.578E-05	0.000	1.165E+12
340.	3504	319382.	0.000				
	37.600	-0.004894	111228.	-8101.8203	4.632E-05	0.000	1.165E+12
325.	8141	319565.	0.000				
	38.000	-0.004670	75914.	-6573.1915	4.671E-05	0.000	1.165E+12
311.	1145	319747.	0.000				
	38.400	-0.004445	47766.	-5115.4015	4.696E-05	0.000	1.165E+12
296.	2979	319929.	0.000				
	38.800	-0.004220	26444.	-3728.9234	4.712E-05	0.000	1.165E+12
281.	4013	320111.	0.000				
	39.200	-0.003993	11606.	-2414.0742	4.720E-05	0.000	1.165E+12
266.	4526	320294.	0.000				
	39.600	-0.003766	2905.9475	-1171.0569	4.723E-05	0.000	1.165E+12
251.	4713	320476.	0.000				
	40.000	-0.003540	0.000	0.000	4.723E-05	0.000	1.165E+12
236.	4690	160329.	0.000				

* 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

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bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 4:

Pile-head deflection = 0.5705216 inches
 Computed slope at pile head = -0.0040817 radians
 Maximum bending moment = 12571317. inch-lbs
 Maximum shear force = -56878. lbs
 Depth of maximum bending moment = 8.8000000 feet below pile head
 Depth of maximum shear force = 25.2000000 feet below pile head
 Number of iterations = 19
 Number of zero deflection points = 1

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 22000.0 lbs
 Applied moment at pile head = 1805000.0 in-lbs
 Axial thrust load on pile head = 442000.0 lbs

Depth Res.	Soil X	Deflect. Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	y Lat.	Load Moment	lbs	radians	psi *	lb-in^2	lb/in
	lb/inch	lb/inch	in-lbs					
0.000	0.00	0.1763	1805000.000	22000.	-0.000985	0.000	1.191E+12	
0.000	0.400	0.1716	1912683.000	22000.	-0.000978	0.000	1.191E+12	
0.000	0.800	0.1669	2020349.000	22000.	-0.000970	0.000	1.191E+12	
0.000	1.200	0.1623	2127999.000	21977.	-0.000962	0.000	1.191E+12	
-9.7373	288.0000	0.1577	2235405.000	21885.	-0.000953	0.000	1.191E+12	
-28.3848	864.0000	0.1531	2342139.000	21707.	-0.000944	0.000	1.191E+12	
-45.9425	1440.0000	0.1486	2447794.000	21447.	-0.000934	0.000	1.191E+12	
-62.4267	2016.0000	0.1442	2551990.000	21110.	-0.000924	0.000	1.191E+12	
-77.8548	2592.0000	0.1398	2654370.000	20702.	-0.000913	0.000	1.191E+12	
-92.2453	3168.0000	0.1354	2754603.000	20227.	-0.000903	0.000	1.191E+12	
-105.6174	3744.0000	0.1311	2852378.000	19690.	-0.000891	0.000	1.191E+12	
-117.9914	4320.0000	0.1269	2947410.000	19097.	-0.000880	0.000	1.191E+12	
-129.3884	4896.0000	0.1227	3039436.000	18450.	-0.000867	0.000	1.191E+12	
-139.8304	5472.0000	0.1185	3128215.000	17756.	-0.000855	0.000	1.191E+12	

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-149.3400	6048.0000	0.000					
5.600	0.1144	3213526.	17019.	-0.000842	0.000	1.191E+12	
-157.9409	6624.0000	0.000					
6.000	0.1104	3295170.	16242.	-0.000829	0.000	1.191E+12	
-165.6573	7200.0000	0.000					
6.400	0.1065	3372969.	15431.	-0.000816	0.000	1.191E+12	
-172.5141	7776.0000	0.000					
6.800	0.1026	3446765.	14588.	-0.000802	0.000	1.191E+12	
-178.5369	8352.0000	0.000					
7.200	0.0988	3516418.	13719.	-0.000788	0.000	1.191E+12	
-183.7519	8928.0000	0.000					
7.600	0.0950	3581808.	12826.	-0.000774	0.000	1.191E+12	
-188.1858	9504.0000	0.000					
8.000	0.0914	3642830.	11914.	-0.000759	0.000	1.191E+12	
-191.8656	10080.	0.000					
8.400	0.0878	3699402.	10986.	-0.000744	0.000	1.191E+12	
-194.8189	10656.	0.000					
8.800	0.0842	3751452.	10045.	-0.000729	0.000	1.191E+12	
-197.0737	11232.	0.000					
9.200	0.0808	3798931.	9095.5206	-0.000714	0.000	1.191E+12	
-198.6583	11808.	0.000					
9.600	0.0774	3841799.	8139.6981	-0.000699	0.000	1.191E+12	
-199.6011	12384.	0.000					
10.000	0.0740	3880036.	7180.8217	-0.000683	0.000	1.191E+12	
-199.9308	12960.	0.000					
10.400	0.0708	3913634.	6221.7646	-0.000667	0.000	1.191E+12	
-199.6763	13536.	0.000					
10.800	0.0676	3942597.	5265.2616	-0.000652	0.000	1.191E+12	
-198.8666	14112.	0.000					
11.200	0.0646	3966945.	4313.9085	-0.000636	0.000	1.191E+12	
-197.5306	14688.	0.000					
11.600	0.0615	3986707.	3370.1618	-0.000620	0.000	1.191E+12	
-195.6972	15264.	0.000					
12.000	0.0586	4001927.	2436.3393	-0.000603	0.000	1.191E+12	
-193.3955	15840.	0.000					
12.400	0.0557	4012657.	1514.6202	-0.000587	0.000	1.191E+12	
-190.6541	16416.	0.000					
12.800	0.0530	4018960.	607.0461	-0.000571	0.000	1.191E+12	
-187.5017	16992.	0.000					
13.200	0.0503	4020908.	-284.4783	-0.000555	0.000	1.191E+12	
-183.9668	17568.	0.000					
13.600	0.0476	4018583.	-1158.1841	-0.000539	0.000	1.191E+12	
-180.0773	18144.	0.000					
14.000	0.0451	4012075.	-2012.4366	-0.000523	0.000	1.191E+12	
-175.8612	18720.	0.000					
14.400	0.0426	4001481.	-2845.7339	-0.000506	0.000	1.191E+12	
-171.3460	19296.	0.000					
14.800	0.0402	3986905.	-3656.7051	-0.000490	0.000	1.191E+12	
-166.5587	19872.	0.000					
15.200	0.0379	3968457.	-4444.1086	-0.000474	0.000	1.191E+12	
-161.5261	20448.	0.000					
15.600	0.0357	3946253.	-5206.8292	-0.000458	0.000	1.191E+12	
-156.2742	21024.	0.000					
16.000	0.0335	3920416.	-5943.8768	-0.000442	0.000	1.191E+12	
-150.8289	21600.	0.000					
16.400	0.0314	3891069.	-6654.3830	-0.000427	0.000	1.191E+12	
-145.2153	22176.	0.000					
16.800	0.0294	3858344.	-7337.5991	-0.000411	0.000	1.191E+12	
-139.4580	22752.	0.000					
17.200	0.0275	3822373.	-7992.8930	-0.000396	0.000	1.191E+12	
-133.5811	23328.	0.000					
17.600	0.0256	3783291.	-8619.7465	-0.000380	0.000	1.191E+12	
-127.6079	23904.	0.000					

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18.000	0.0238	3741237.	-9217.7520	-0.000365	0.000	1.191E+12
-121.5611	24480.	0.000				
18.400	0.0221	3696349.	-9786.6095	-0.000350	0.000	1.191E+12
-115.4629	25056.	0.000				
18.800	0.0205	3648771.	-10326.	-0.000335	0.000	1.191E+12
-109.3347	25632.	0.000				
19.200	0.0189	3598641.	-10836.	-0.000321	0.000	1.191E+12
-103.1971	26208.	0.000				
19.600	0.0174	3546104.	-11317.	-0.000306	0.000	1.191E+12
-97.0703	26784.	0.000				
20.000	0.0160	3491299.	-11768.	-0.000292	0.000	1.191E+12
-90.9733	27360.	0.000				
20.400	0.0146	3434369.	-12190.	-0.000278	0.000	1.191E+12
-84.9249	27936.	0.000				
20.800	0.0133	3375453.	-12584.	-0.000264	0.000	1.191E+12
-78.9426	28512.	0.000				
21.200	0.0121	3314689.	-13174.	-0.000251	0.000	1.191E+12
-167.1894	66579.	0.000				
21.600	0.0109	3250044.	-13983.	-0.000238	0.000	1.191E+12
-169.8911	74946.	0.000				
22.000	0.009771	3181458.	-14798.	-0.000225	0.000	1.191E+12
-169.6167	83322.	0.000				
22.400	0.008723	3108936.	-15605.	-0.000212	0.000	1.191E+12
-166.6629	91707.	0.000				
22.800	0.007735	3032548.	-16392.	-0.000200	0.000	1.191E+12
-161.3168	100102.	0.000				
23.200	0.006806	2952417.	-17149.	-0.000188	0.000	1.191E+12
-153.8544	108508.	0.000				
23.600	0.005934	2868716.	-17865.	-0.000176	0.000	1.191E+12
-144.5403	116922.	0.000				
24.000	0.005117	2781661.	-18532.	-0.000165	0.000	1.191E+12
-133.6274	125347.	0.000				
24.400	0.004354	2691502.	-19144.	-0.000154	0.000	1.191E+12
-121.3559	133781.	0.000				
24.800	0.003643	2598525.	-19695.	-0.000143	0.000	1.191E+12
-107.9530	142225.	0.000				
25.200	0.002983	2503038.	-20179.	-0.000133	0.000	1.191E+12
-93.6327	150679.	0.000				
25.600	0.002371	2405373.	-20592.	-0.000123	0.000	1.191E+12
-78.5953	159142.	0.000				
26.000	0.001805	2305876.	-20932.	-0.000113	0.000	1.191E+12
-63.0272	167615.	0.000				
26.400	0.001284	2204908.	-21196.	-0.000104	0.000	1.191E+12
-47.1007	176098.	0.000				
26.800	0.000805	2102835.	-21384.	-9.543E-05	0.000	1.191E+12
-30.9739	184591.	0.000				
27.200	0.000368	2000031.	-21493.	-8.717E-05	0.000	1.191E+12
-14.7909	193093.	0.000				
27.600	-3.139E-05	1896869.	-21526.	-7.932E-05	0.000	1.191E+12
1.3184	201605.	0.000				
28.000	-0.000394	1793721.	-21481.	-7.188E-05	0.000	1.191E+12
17.2379	210127.	0.000				
28.400	-0.000721	1690954.	-21361.	-6.486E-05	0.000	1.191E+12
32.8654	218658.	0.000				
28.800	-0.001016	1588931.	-21167.	-5.826E-05	0.000	1.191E+12
48.1120	227199.	0.000				
29.200	-0.001281	1488003.	-20900.	-5.206E-05	0.000	1.191E+12
62.9018	235750.	0.000				
29.600	-0.001516	1388511.	-20564.	-4.626E-05	0.000	1.191E+12
77.1715	244311.	0.000				
30.000	-0.001725	1290785.	-20161.	-4.086E-05	0.000	1.191E+12
90.8700	252881.	0.000				
30.400	-0.001908	1195142.	-19693.	-3.586E-05	0.000	1.191E+12

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103.	9576	261461.	0.000				
	30.800	-0.002069	1101883.	-19164.	-3.123E-05	0.000	1.191E+12
116.	4057	270051.	0.000				
	31.200	-0.002208	1011298.	-18577.	-2.697E-05	0.000	1.191E+12
128.	1958	278650.	0.000				
	31.600	-0.002328	923657.	-17935.	-2.307E-05	0.000	1.191E+12
139.	3191	287260.	0.000				
	32.000	-0.002430	839218.	-17241.	-1.952E-05	0.000	1.191E+12
149.	7756	295878.	0.000				
	32.400	-0.002515	758224.	-16499.	-1.630E-05	0.000	1.191E+12
159.	5732	304507.	0.000				
	32.800	-0.002586	680899.	-15711.	-1.340E-05	0.000	1.191E+12
168.	7272	313146.	0.000				
	33.200	-0.002644	607455.	-14886.	-1.081E-05	0.000	1.191E+12
174.	9267	317559.	0.000				
	33.600	-0.002690	538037.	-14039.	-8.502E-06	0.000	1.191E+12
178.	0728	317742.	0.000				
	34.000	-0.002726	472717.	-13178.	-6.465E-06	0.000	1.191E+12
180.	5332	317924.	0.000				
	34.400	-0.002752	411553.	-12307.	-4.684E-06	0.000	1.191E+12
182.	3905	318106.	0.000				
	34.800	-0.002771	354587.	-11429.	-3.141E-06	0.000	1.191E+12
183.	7219	318289.	0.000				
	35.200	-0.002782	301851.	-10545.	-1.818E-06	0.000	1.191E+12
184.	5998	318471.	0.000				
	35.600	-0.002788	253366.	-9657.4013	-6.996E-07	0.000	1.191E+12
185.	0910	318653.	0.000				
	36.000	-0.002789	209143.	-8768.5655	2.322E-07	0.000	1.191E+12
185.	2572	318835.	0.000				
	36.400	-0.002786	169187.	-7879.5771	9.943E-07	0.000	1.191E+12
185.	1546	319018.	0.000				
	36.800	-0.002779	133495.	-6991.6037	1.604E-06	0.000	1.191E+12
184.	8343	319200.	0.000				
	37.200	-0.002770	102061.	-6105.5816	2.079E-06	0.000	1.191E+12
184.	3416	319382.	0.000				
	37.600	-0.002760	74873.	-5222.2414	2.435E-06	0.000	1.191E+12
183.	7168	319565.	0.000				
	38.000	-0.002747	51917.	-4342.1335	2.691E-06	0.000	1.191E+12
182.	9948	319747.	0.000				
	38.400	-0.002734	33177.	-3465.6543	2.862E-06	0.000	1.191E+12
182.	2049	319929.	0.000				
	38.800	-0.002720	18634.	-2593.0718	2.966E-06	0.000	1.191E+12
181.	3712	320111.	0.000				
	39.200	-0.002705	8270.6494	-1724.5514	3.021E-06	0.000	1.191E+12
180.	5123	320294.	0.000				
	39.600	-0.002691	2065.8610	-860.1817	3.041E-06	0.000	1.191E+12
179.	6417	320476.	0.000				
	40.000	-0.002676	0.000	0.000	3.045E-06	0.000	1.191E+12
178.	7673	160329.	0.000				

* 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. 5:

PIER - Strength. I p7o

Pile-head deflection = 0.1763130 inches
 Computed slope at pile head = -0.0009854 radians
 Maximum bending moment = 4020908. inch-lbs
 Maximum shear force = 22000. lbs
 Depth of maximum bending moment = 13.2000000 feet below pile head
 Depth of maximum shear force = 0.0000000 feet below pile head
 Number of iterations = 6
 Number of zero deflection points = 1

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Case No.	Load Type No.	Maximum Shear in Pile V(lbs)	Pile-head	Pile-head	Axial Loading lbs	Pile-head	Maximum Moment in Pile in-lbs
			Condition 1 V(lbs) or Rotational y(inches) or radians	Condition 2 in-lb, rad., or in-lb/rad.		Pile-head Deflection inches	
1	1	V = 39000.	M = 1598000.		614000.	0.27044585	
5844482.		39000.	-0.00143030				
2	1	V = 23000.	M = 1293000.		1122000.	0.17391900	
3761226.		23000.	-0.00094801				
3	1	V = 36000.	M = 6075000.		793000.	0.38436915	
9362748.		-46473.	-0.00232314				
4	1	V = 30000.	M = 10166000.		802000.	0.57052164	
12571317.		-56878.	-0.00408171				
5	1	V = 22000.	M = 1805000.		442000.	0.17631300	
4020908.		22000.	-0.00098539				

The analysis ended normally.

2.2.1 Design Calculations

NOTES:

Reference: Belford Ave Geotech Soils Report 032216

End Bearing Capacity = 40 ksf (in bedrock)
Side Friction Capacity = 3.6 ksf (in bedrock)
Min Req'd End Bearing Load = 10 ksf
Min Embed into Bedrock = 10 ft
Min L:D Ratio = 30 :1
Min CL to CL Shaft Spacing = 3 diameters

SOFT CLAY WITH FREE WATER:

	Effective Unit Weight (pcf)	Undrained Cohesion (c) (psf)	E_{50}
Top of Layer	50	800	0.020
Bottom of Layer	50	800	0.020

SAND (REESE):

	Effective Unit Weight (pcf)	Friction Angle (degree)	Non-Default, k, (pci)
Top of Layer	58	28	25
Bottom of Layer	58	30	25

WEAK ROCK:

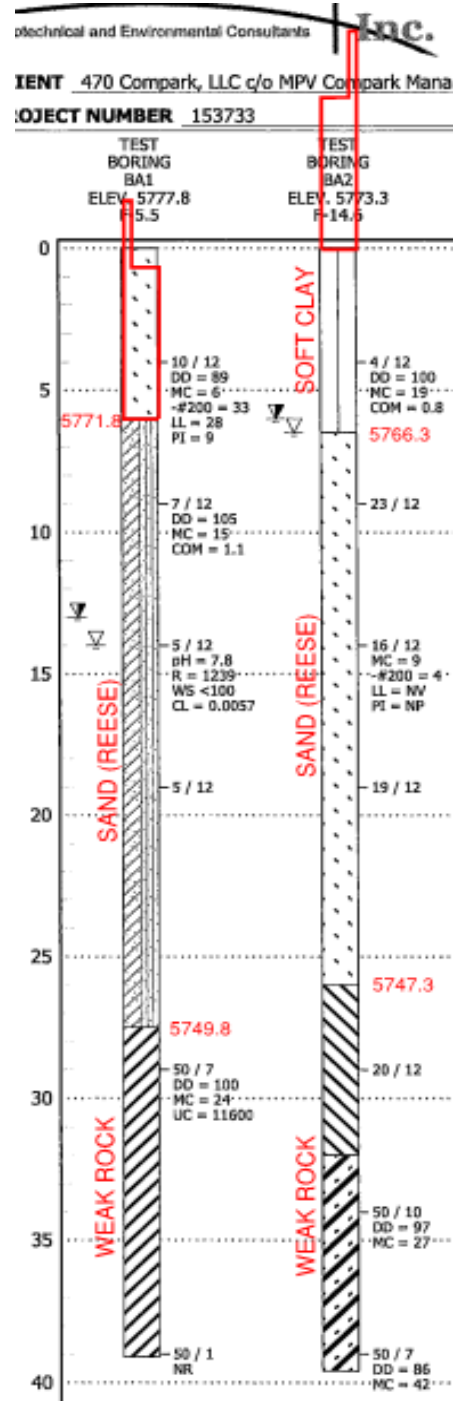
	Effective Unit Weight (pcf)	Initial Modulus of Rock Mass (psi)	Uniaxial Compressive Strength, q_u (psi)	Rock Quality Designation, RQD (%)	k_{rm}
Top of Layer	61	130	100	10	0.00005
Bottom of Layer	61	145	120	20	0.00005

Soft Clay El Abut 1 = _____
Soft Clay El Pier 2 = _____
Soft Clay El Abut 3 = **5772.94**

Sand (Reese) El Abut 1 = **5771.8**
Sand (Reese) El Pier 2 = **5769.1**
Sand (Reese) El Abut 3 = **5766.3**

Bedrock El Abut 1 = **5749.8**
Bedrock El Pier 2 = **5748.6**
Bedrock El Abut 3 = **5747.3**

	ABUT 3	
	To TOP	To BOTT
Soft Clay	0	6.6
Sand (Reese)	6.6	25.6
Weak Rock	25.6	100



NOTES: By observation, the symmetry of the span lengths and the pinned-fixed-pinned support conditions precludes significant lateral loading of the pier shafts. Ergo, the pier shafts will be designed for axial loading only.

TOP OF COLUMN REACTIONS (RCPier):

Strength Envelope Fy-max = 452.00 k
 Service Envelope Fy-max = 308.00 k

These Fy values are based on the RCPier run which models the cap as a continuous beam. This produces more conservative results.

AXIAL DESIGN: Strength Limit State

Shaft Diameter = 2.00 ft
 Factored Tip Resistance = 40 ksf
 Factored Side Resistance = 3.6 ksf

Top of Bedrock = 5746.2
 Tip Elev = 5729.3
 Bedrock Embed = 16.90 ft (increase to achieve appropriate Net Total Resistance)
 Net Side Resistance = 382.3 k
 Net Tip Resistance = 125.7 k
 Net Total Resistance = 507.9 k
 P_{u, max} = 452.00 k **OK**

Check Minimum DL Pressure per Geotech: Assume Strength Limit State
 Conservatively neglect shaft weight.

Min. Req'd DL per Geotech = 10.00 ksf

Min DC Reaction at Top of Shaft = 70 kips
 DW Reaction at Top of Shaft = 7 kips
 Total DL = 77 kips
 Total DL Pressure = 24.5 ksf **OK**

Reference:

Under Analysis Tab, select Envelope Strength then Envelope Service, use Filter, check desired nodes.
All values rounded up to nearest whole number.

Top of Shaft Reactions from RCPier:

STRENGTH LOADS
Forces at Top of Drilled Shafts

Shafts are pinned, i.e., not integral with abutment cap. Ergo, moments are not transferred into tops of shafts. Set moments = 0

Case 1 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	21.00	185.00	7.00			23,000	0	185,000

Case 2 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	13.00	395.00	7.00			15,000	0	395,000

Case 3 - Fz Max (parallel with girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	12.00	385.00	20.00			24,000	0	385,000

Case 4 - Mx Max (about axis parallel to abutment)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	13.00	171.00	13.00			19,000	0	171,000

Case 5 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	21.00	185.00	7.00			23,000	0	185,000

SERVICE LOADS

Forces at Top of Drilled Shafts

Case 6 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	14.00	136.00	5.00			15,000	0	136,000

Case 7 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	9.00	276.00	5.00			11,000	0	276,000

Case 8 - Fz Max (parallel to girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	8.00	271.00	11.00			14,000	0	271,000

Case 9 - Mx Max (about axis parallel to abutment)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	9.00	128.00	8.00			13,000	0	128,000

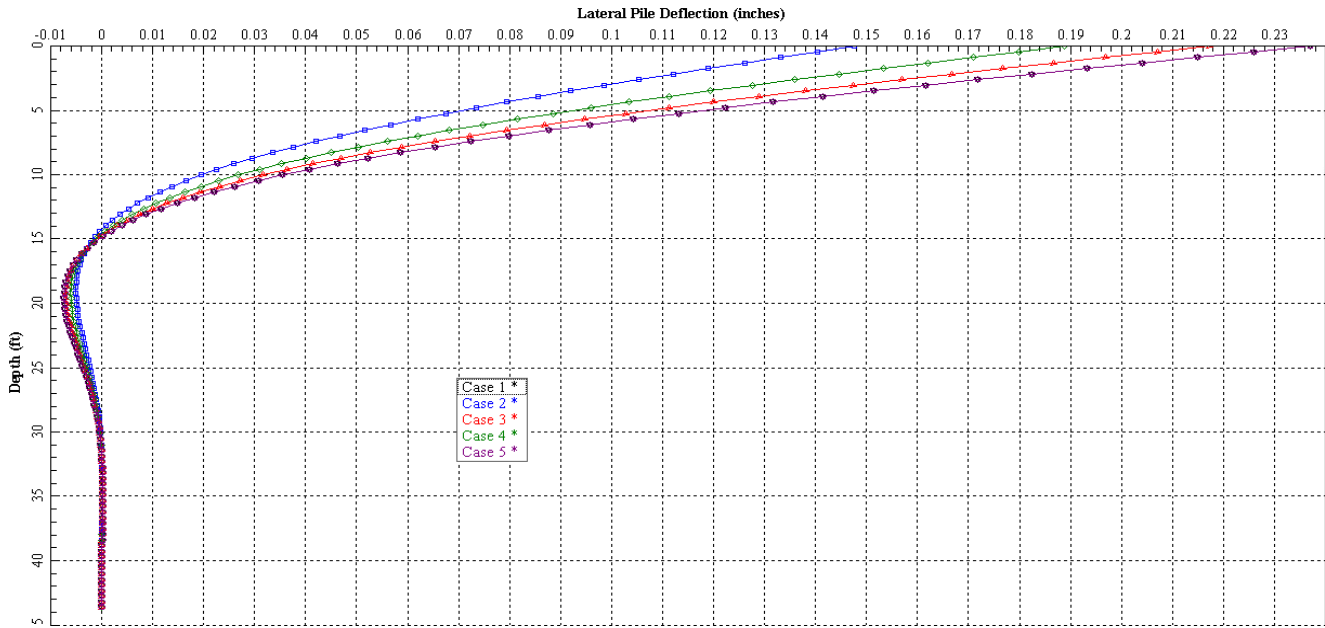
Case 10 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
	14.00	136.00	5.00			15,000	0	136,000

SERVICE CHECK: DEFLECTIONS

Say OK.

Top of Shaft Elev = 5772.94
Bottom of shaft Elev = 5729.3
Shaft Length = 43.64 ft



STRENGTH: REBAR DESIGN

Design rebar in L-Pile. Note that deflection is NOT a criteria here. Increase rebar to satisfy moment capacities as shown below using:

Strength Limit Sate Loading.
p-y multipliers as appropriate. Enter them in L-Pile.
Round Concrete Shaft (Bored Pile) with reinforcing.

From L-Pile Output:

Shaft Diam = 2 ft
No. of Bars = 8
Bars per Bundle = 1 (enter 1 for single bars)
No. of Bundles = 8
Size = #8
% Steel = 1.40%
Resistance Factor = 0.75 (AASHTO 5.5.4.2)
Cover = 3.5 in
Clearance Between Bars or Bundles = 5.28 in

Load No.	Max Moment in Shaft (lbs*inch)	Max Moment in Shaft (k*ft)	Axial Thrust (kips)	Nominal (Unfactored) Moment Capacity (k*inch)	Factored Moment Capacity (k*ft)	Ratio Prvd/Req	
1	1176132	98	185	4204	263	2.68	OK!
2	724317	60	395	5036	315	5.21	OK!
3	1287996	107	385	5036	315	2.93	OK!
4	937650	78	171	4143	259	3.31	OK!
5	1176132	98	185	4204	263	2.68	OK!

Max Moment in Shaft comes from very tail end of report.
Moment Capacity is midway through report, Summary of Results for Nominal Moment Capacity.

Reference:

Under Analysis Tab, select Envelope Strength then Envelope Service, use Filter, check desired nodes.
All values rounded up to nearest whole number.

Top of Shaft Reactions from RCPier:

Shafts are pinned, i.e., not integral with abutment cap. Ergo, moments are not transferred into tops of shafts. Set moments = 0

STRENGTH LOADS

Forces at Top of Drilled Shafts

Case 1 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	142.00	1.00				3,000	0	142,000

Case 2 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	235.00	1.00				3,000	0	235,000

Case 3 - Fz Max (parallel with girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	235.00	1.00				3,000	0	235,000

Case 4 - Mx Max (about axis parallel to abutment)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
						0	0	0

Case 5 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
						0	0	0

SERVICE LOADS

Forces at Top of Drilled Shafts

Case 6 - Fx Max (lateral to bridge)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	113.00	1.00				3,000	0	113,000

Case 7 - Fy Max (vertical)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	186.00	1.00				3,000	0	186,000

Case 8 - Fz Max (parallel to girders)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
2.00	186.00	1.00				3,000	0	186,000

Case 9 - Mx Max (about axis parallel to abutment)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
						0	0	0

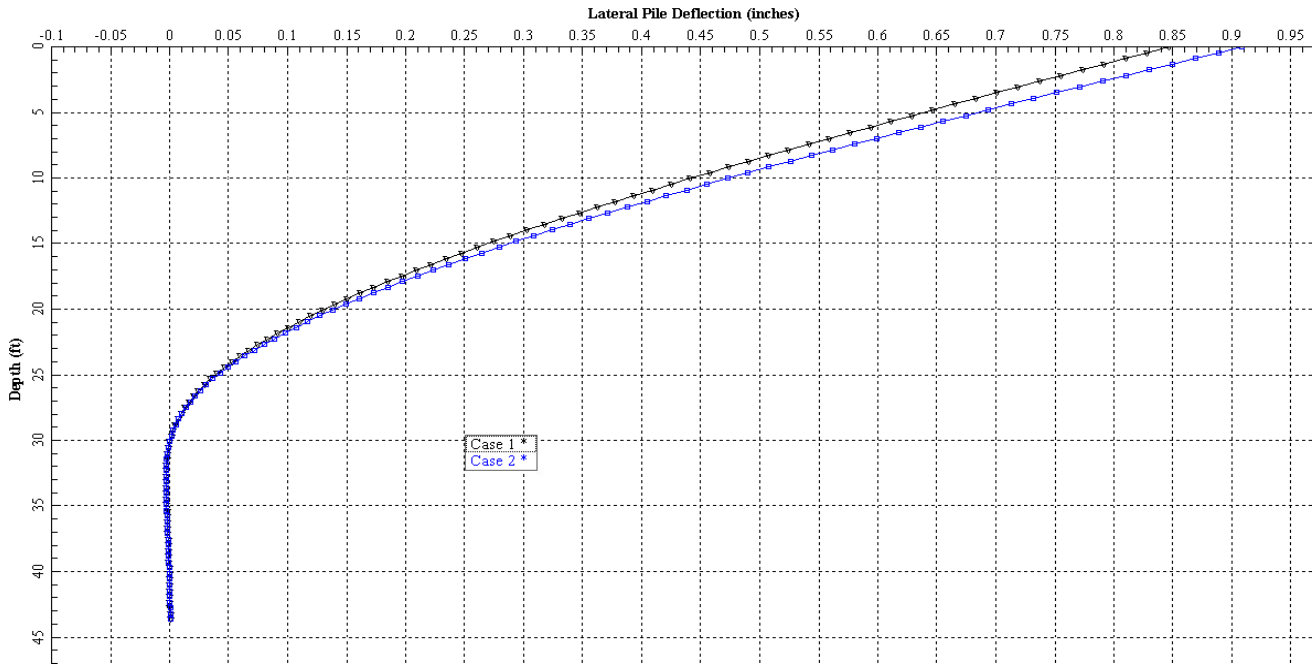
Case 10 - Mz Max (about axis parallel to girder)

Column #	Loads from RCPier					Loads to put into LPile		
	F _x (k)	F _y (k)	F _z (k)	M _x (k-ft)	M _z (k-ft)	Shear (lb)	Moment (lb-in)	Axial (lb)
						0	0	0

SERVICE CHECK: DEFLECTIONS

Say OK.

Top of Shaft Elev = 5772.94
Bottom of shaft Elev = 5729.3
Shaft Length = 43.64 ft



STRENGTH: REBAR DESIGN

Design rebar in L-Pile. Note that deflection is NOT a criteria here. Increase rebar to satisfy moment capacities as shown below using:

Strength Limit Sate Loading.
p-y multipliers as appropriate. Enter them in L-Pile.
Round Concrete Shaft (Bored Pile) with reinforcing.

From L-Pile Output:

Shaft Diam = 2 ft
No. of Bars = 8
Bars per Bundle = 1 (enter 1 for single bars)
No. of Bundles = 8
Size = #8
% Steel = 1.40%
Resistance Factor = 0.75 (AASHTO 5.5.4.2)

Cover = 3.5 in
Clearance Between Bars or Bundles = 5.28 in

Load No.	Max Moment in Shaft (lbs*inch)	Max Moment in Shaft (k*ft)	Axial Thrust (kips)	Nominal (Unfactored) Moment Capacity (k*inch)	Factored Moment Capacity (k*ft)	Ratio Prvd/Req	
1	1041374	87	142	4015	251	2.89	OK!
2	1129821	94	235	4416	276	2.93	OK!
3	0	0	235	0	0	#DIV/0!	#DIV/0!
4	0	0	0	0	0	#DIV/0!	#DIV/0!
5	0	0	0	0	0	#DIV/0!	#DIV/0!

Max Moment in Shaft comes from very tail end of report.



Project No.: 115360-02
Subject: IDC
ABUT - SCOUR

Calc'd By: JDJ
Checked By: _____

Date: 25-Feb-21
Date: _____
Sheet No: _____

Moment Capacity is midway through report, Summary of Results for Nominal Moment Capacity.

2.2.2 L-Pile Output

LPIle Plus for Windows, Version 2013-07.007

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

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This copy of LPIle is used by:

JDJ
FHU Eng

Serial Number of Security Device: 158124184

This copy of LPIle is licensed for exclusive use by: Felsburg Holt & Ullevig,
Centenn

Use of this program by any entity other than Felsburg Holt & Ullevig, Centenn
is forbidden by the software license agreement.

Files Used for Analysis

Path to file locations: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: ABUT - Service.l p7d
Name of output report file: ABUT - Service.l p7o
Name of plot output file: ABUT - Service.l p7p
Name of runtime message file: ABUT - Service.l p7r

Date and Time of Analysis

Date: February 25, 2021 Time: 12:13:03

Problem Title

Project Name: Bel ford ABUT - Service

Job Number: 115360

Client:

Engi neer: JDJ

Description:

 Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

 Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 43.64 ft

Depth of ground surface below top of pile = 0.00 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	24.0000000
2	43.640000	24.0000000

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Input Structural Properties:

Pile Section No. 1:

Section Type	=	Elastic Pile
Cross-sectional Shape	=	Circular
Section Length	=	43.64000 ft
Top Width	=	24.00000 in
Bottom Width	=	24.00000 in
Top Area	=	452.38934 Sq. in
Bottom Area	=	452.38934 Sq. in
Moment of Inertia at Top	=	16286. in ⁴
Moment of Inertia at Bottom	=	16286. in ⁴
Elastic Modulus	=	3865202. lbs/in ²

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 3 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer	=	0.0000 ft
Distance from top of pile to bottom of layer	=	6.60000 ft
Effective unit weight at top of layer	=	50.00000 pcf
Effective unit weight at bottom of layer	=	50.00000 pcf
Undrained cohesion at top of layer	=	800.00000 psf
Undrained cohesion at bottom of layer	=	800.00000 psf
Epsilon-50 at top of layer	=	0.02000
Epsilon-50 at bottom of layer	=	0.02000

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	6.60000 ft
Distance from top of pile to bottom of layer	=	25.60000 ft
Effective unit weight at top of layer	=	58.00000 pcf
Effective unit weight at bottom of layer	=	58.00000 pcf
Friction angle at top of layer	=	28.00000 deg.
Friction angle at bottom of layer	=	30.00000 deg.
Subgrade k at top of layer	=	25.00000 pci
Subgrade k at bottom of layer	=	25.00000 pci

Layer 3 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	25.60000 ft
Distance from top of pile to bottom of layer	=	100.00000 ft

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Effective unit weight at top of layer	=	61.00000	pcf
Effective unit weight at bottom of layer	=	61.00000	pcf
Uniaxial compressive strength at top of layer	=	100.00000	psi
Uniaxial compressive strength at bottom of layer	=	120.00000	psi
Initial modulus of rock at top of layer	=	130.00000	psi
Initial modulus of rock at bottom of layer	=	145.00000	psi
RQD of rock at top of layer	=	10.00000	%
RQD of rock at bottom of layer	=	20.00000	%
k _{rm} of rock at top of layer	=	0.0000500	
k _{rm} of rock at bottom of layer	=	0.0000500	

(Depth of lowest soil layer extends 56.36 ft below pile tip)

 Summary of Soil Properties

Angle of Layer Friction	Uni axial qu (p-y psi	Layer Soil Type Curve Cri teria GSI	RQD % or GSI	Strain Factor Epsi lon 50	Layer Depth ft pci	Effecti ve Rock Unit Wt. pcf psi	Undrai ned Rock Cohesi on Emass psf
1	Soft Clay		--	0.02000	0.00	50.000	800.000
--	--		--	0.02000	6.600	50.000	800.000
2	Sand (Reese, et al.)		--	--	6.600	58.000	--
28.000	--		--	--	25.600	25.000	--
30.000	--		--	--	25.600	58.000	--
3	Weak Rock		10.000	--	25.600	61.000	--
5.00E-05	100.000		10.000	--	100.000	130.000	--
5.00E-05	120.000		20.000	--	100.000	61.000	--
						145.000	

 Loading Type

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

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Number of Loads specified = 5

Load No.	Load Compute Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 15000. lbs	M = 1.00000 in-lbs	136000.
2	No	V = 11000. lbs	M = 1.00000 in-lbs	276000.
3	No	V = 14000. lbs	M = 1.00000 in-lbs	271000.
4	No	V = 13000. lbs	M = 1.00000 in-lbs	128000.
5	No	V = 15000. lbs	M = 1.00000 in-lbs	136000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 15000.0 lbs
Applied moment at pile head = 1.0 in-lbs
Axial thrust load on pile head = 136000.0 lbs

Depth Res.	Soil Spr.	Deflect. Distrib.	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
X	Es*h	Lat. Load	in-lbs	lbs	radians	psi *	lb-in ²	lb/in
feet	lb/inch	inches						
		lb/inch						

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0.00	0.2371	1.0000	15000.	-0.002110	300.6267	6.295E+10	
-116.4859	1286.5576	0.000	78458.	14381.	-0.002107	358.4364	
0.436	0.2260	0.000	153624.	13745.	-0.002097	413.8206	
-119.8591	2777.0550	0.000	225407.	13093.	-0.002081	466.7126	
0.873	0.2150	0.000	293724.	12427.	-0.002060	517.0504	
-123.0052	2995.9499	0.000	358497.	11747.	-0.002032	564.7769	
1.309	0.2041	0.000	419656.	11055.	-0.002000	609.8402	
-125.9182	3231.4376	0.000	477136.	10353.	-0.001963	652.1936	
1.746	0.1932	0.000	530883.	9640.9131	-0.001921	691.7959	
-128.5920	3485.3697	0.000	580847.	8920.9565	-0.001875	728.6110	
2.182	0.1825	0.000	626988.	8194.4098	-0.001824	762.6086	
-131.0210	3759.8478	0.000	669271.	7462.7110	-0.001770	793.7640	
2.618	0.1719	0.000	707671.	6727.3248	-0.001713	822.0583	
-133.1995	4057.2659	0.000	742171.	5989.7434	-0.001653	847.4785	
3.055	0.1615	0.000	772760.	5251.4860	-0.001590	870.0174	
-135.1220	4380.3619	0.000	799437.	4514.0997	-0.001524	889.6742	
3.491	0.1514	0.000	822210.	3679.2411	-0.001457	906.4539	
-136.7831	4732.2797	0.000	840048.	2733.8735	-0.001388	919.5970	
3.928	0.1414	0.000	852821.	1767.0265	-0.001317	929.0085	
-138.1774	5116.6451	0.000	860431.	784.7266	-0.001246	934.6163	
4.364	0.1317	0.000	862815.	-206.7262	-0.001175	936.3723	
-139.2999	5537.6584	0.000	859939.	-1163.9380	-0.001103	934.2536	
4.800	0.1223	0.000	852195.	-2042.4690	-0.001032	928.5474	
-140.1452	6000.2092	0.000	840017.	-2838.1638	-0.000961	919.5741	
5.237	0.1132	0.000	823838.	-3551.5605	-0.000892	907.6535	
-140.7081	6510.0189	0.000	21902.	0.000	0.000	0.000	
5.673	0.1044	0.000	804090.	-4183.8175	-0.000824	893.1021	
-140.9835	7073.8183	0.000	781193.	-4736.6593	-0.000758	876.2311	
6.110	0.0959	0.000	755560.	-5212.3199	-0.000694	857.3441	
-140.9663	7699.5733	0.000	23959.	0.000	0.000	0.000	
6.546	0.0877	0.000	727590.	-5613.4865	-0.000633	836.7352	
-140.6509	8396.7710	0.000	697668.	-5943.2429	-0.000573	814.6876	
6.982	0.0799	0.000	666160.	-6205.0136	-0.000517	791.4717	
-178.1921	11678.	0.000	633415.	-6402.5085	-0.000463	767.3443	
7.419	0.0725	0.000					
-182.8557	13215.	0.000					
7.855	0.0654	0.000					
-186.3953	14931.	0.000					
8.292	0.0587	0.000					
-188.7574	16851.	0.000					
8.728	0.0523	0.000					
-189.8909	19006.	0.000					
9.164	0.0464	0.000					
-175.6803	19845.	0.000					
9.601	0.0408	0.000					
-159.8418	20531.	0.000					
10.037	0.0356	0.000					
-144.0441	21216.	0.000					
10.474	0.0307	0.000					
-128.4111	21902.	0.000					
10.910	0.0262	0.000					
-113.0559	22587.	0.000					
11.346	0.0221	0.000					
-98.0814	23273.	0.000					
11.783	0.0183	0.000					
-83.5794	23959.	0.000					
12.219	0.0148	0.000					
-69.6312	24644.	0.000					
12.656	0.0116	0.000					
-56.3070	25330.	0.000					
13.092	0.008790	0.000					
-43.6665	26015.	0.000					
13.528	0.006229	0.000					

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-31. 7593	26701.	0. 000					
13. 965	0. 003944	599762.	-6539. 6705	-0. 000411	742. 5476	6. 295E+10	
-20. 6246	27387.	0. 000					
14. 401	0. 001920	565507.	-6620. 6230	-0. 000363	717. 3078	6. 295E+10	
-10. 2922	28072.	0. 000					
14. 838	0. 000143	530937.	-6649. 6221	-0. 000317	691. 8355	6. 295E+10	
-0. 7829	28758.	0. 000					
15. 274	-0. 001404	496314.	-6631. 0092	-0. 000275	666. 3241	6. 295E+10	
7. 8914	29443.	0. 000					
15. 710	-0. 002733	461878.	-6569. 1683	-0. 000235	640. 9506	6. 295E+10	
15. 7265	30129.	0. 000					
16. 147	-0. 003862	427845.	-6468. 4851	-0. 000198	615. 8746	6. 295E+10	
22. 7257	30815.	0. 000					
16. 583	-0. 004804	394411.	-6333. 3101	-0. 000164	591. 2392	6. 295E+10	
28. 8993	31500.	0. 000					
17. 020	-0. 005575	361746.	-6167. 9243	-0. 000132	567. 1705	6. 295E+10	
34. 2636	32186.	0. 000					
17. 456	-0. 006188	329999.	-5976. 5089	-0. 000103	543. 7784	6. 295E+10	
38. 8404	32871.	0. 000					
17. 892	-0. 006657	299297.	-5763. 1180	-7. 713E-05	521. 1568	6. 295E+10	
42. 6563	33557.	0. 000					
18. 329	-0. 006996	269748.	-5531. 6543	-5. 346E-05	499. 3840	6. 295E+10	
45. 7425	34243.	0. 000					
18. 765	-0. 007217	241437.	-5285. 8489	-3. 219E-05	478. 5237	6. 295E+10	
48. 1336	34928.	0. 000					
19. 202	-0. 007333	214432.	-5029. 2433	-1. 323E-05	458. 6256	6. 295E+10	
49. 8673	35614.	0. 000					
19. 638	-0. 007355	188782.	-4765. 1749	3. 541E-06	439. 7257	6. 295E+10	
50. 9838	36299.	0. 000					
20. 074	-0. 007296	164518.	-4496. 7650	1. 824E-05	421. 8478	6. 295E+10	
51. 5253	36985.	0. 000					
20. 511	-0. 007164	141658.	-4226. 9100	3. 097E-05	405. 0039	6. 295E+10	
51. 5357	37671.	0. 000					
20. 947	-0. 006971	120203.	-3958. 2744	4. 186E-05	389. 1952	6. 295E+10	
51. 0596	38356.	0. 000					
21. 384	-0. 006726	100141.	-3693. 2865	5. 103E-05	374. 4130	6. 295E+10	
50. 1426	39042.	0. 000					
21. 820	-0. 006437	81449.	-3434. 1356	5. 858E-05	360. 6396	6. 295E+10	
48. 8304	39727.	0. 000					
22. 256	-0. 006112	64090.	-3182. 7720	6. 464E-05	347. 8494	6. 295E+10	
47. 1686	40413.	0. 000					
22. 693	-0. 005760	48021.	-2940. 9069	6. 930E-05	336. 0096	6. 295E+10	
45. 2027	41099.	0. 000					
23. 129	-0. 005386	33190.	-2710. 0154	7. 268E-05	325. 0810	6. 295E+10	
42. 9776	41784.	0. 000					
23. 566	-0. 004999	19534.	-2491. 3393	7. 487E-05	315. 0194	6. 295E+10	
40. 5375	42470.	0. 000					
24. 002	-0. 004602	6989. 5948	-2285. 8911	7. 598E-05	305. 7761	6. 295E+10	
37. 9257	43155.	0. 000					
24. 438	-0. 004203	-4515. 4375	-2094. 4588	7. 608E-05	303. 9531	6. 295E+10	
35. 1847	43841.	0. 000					
24. 875	-0. 003805	-15055.	-1917. 6109	7. 526E-05	311. 7192	6. 295E+10	
32. 3558	44527.	0. 000					
25. 311	-0. 003415	-24707.	-1755. 7017	7. 361E-05	318. 8308	6. 295E+10	
29. 4794	45212.	0. 000					
25. 748	-0. 003034	-33549.	-1565. 0344	7. 119E-05	325. 3456	6. 295E+10	
43. 3389	74794.	0. 000					
26. 184	-0. 002669	-41200.	-1325. 2234	6. 808E-05	330. 9832	6. 295E+10	
48. 2480	94669.	0. 000					
26. 620	-0. 002321	-47525.	-1065. 9089	6. 439E-05	335. 6441	6. 295E+10	
50. 7875	114571.	0. 000					
27. 057	-0. 001995	-52455.	-798. 7935	6. 023E-05	339. 2767	6. 295E+10	
51. 2273	134499.	0. 000					

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27. 493	-0. 001691	-55978.	-534. 1009	5. 572E-05	341. 8718	6. 295E+10
49. 8622	154455.	0. 000				
27. 930	-0. 001411	-58129.	-280. 4774	5. 097E-05	343. 4570	6. 295E+10
46. 9998	174437.	0. 000				
28. 366	-0. 001157	-58988.	-44. 9529	4. 610E-05	344. 0898	6. 295E+10
42. 9499	194446.	0. 000				
28. 802	-0. 000928	-58665.	167. 0434	4. 121E-05	343. 8523	6. 295E+10
38. 0142	214481.	0. 000				
29. 239	-0. 000725	-57297.	351. 6192	3. 638E-05	342. 8440	6. 295E+10
32. 4777	234544.	0. 000				
29. 675	-0. 000547	-55034.	506. 3136	3. 171E-05	341. 1769	6. 295E+10
26. 6021	254633.	0. 000				
30. 112	-0. 000393	-52039.	629. 9607	2. 726E-05	338. 9699	6. 295E+10
20. 6203	274749.	0. 000				
30. 548	-0. 000262	-48475.	722. 5288	2. 308E-05	336. 3440	6. 295E+10
14. 7327	294892.	0. 000				
30. 984	-0. 000151	-44505.	784. 9465	1. 921E-05	333. 4182	6. 295E+10
9. 1054	315062.	0. 000				
31. 421	-6. 045E-05	-40281.	818. 9217	1. 568E-05	330. 3065	6. 295E+10
3. 8702	335258.	0. 000				
31. 857	1. 289E-05	-35950.	826. 8399	1. 251E-05	327. 1148	6. 295E+10
-0. 8461	343695.	0. 000				
32. 294	7. 057E-05	-31639.	812. 4883	9. 699E-06	323. 9387	6. 295E+10
-4. 6350	343926.	0. 000				
32. 730	0. 000114	-27454.	780. 6538	7. 241E-06	320. 8548	6. 295E+10
-7. 5230	344156.	0. 000				
33. 166	0. 000146	-23473.	735. 7444	5. 122E-06	317. 9218	6. 295E+10
-9. 6284	344386.	0. 000				
33. 603	0. 000168	-19755.	681. 5643	3. 324E-06	315. 1823	6. 295E+10
-11. 0637	344617.	0. 000				
34. 039	0. 000181	-16340.	621. 3471	1. 823E-06	312. 6655	6. 295E+10
-11. 9341	344847.	0. 000				
34. 476	0. 000187	-13250.	557. 7970	5. 921E-07	310. 3891	6. 295E+10
-12. 3365	345077.	0. 000				
34. 912	0. 000187	-10498.	493. 1345	-3. 957E-07	308. 3615	6. 295E+10
-12. 3589	345308.	0. 000				
35. 348	0. 000183	-8084. 7383	429. 1449	-1. 169E-06	306. 5831	6. 295E+10
-12. 0795	345538.	0. 000				
35. 785	0. 000175	-6001. 9550	367. 2284	-1. 755E-06	305. 0484	6. 295E+10
-11. 5672	345769.	0. 000				
36. 221	0. 000165	-4236. 0353	308. 4491	-2. 181E-06	303. 7472	6. 295E+10
-10. 8814	345999.	0. 000				
36. 658	0. 000152	-2768. 2768	253. 5830	-2. 472E-06	302. 6657	6. 295E+10
-10. 0727	346229.	0. 000				
37. 094	0. 000139	-1576. 5878	203. 1637	-2. 653E-06	301. 7877	6. 295E+10
-9. 1831	346460.	0. 000				
37. 530	0. 000125	-636. 6427	157. 5253	-2. 745E-06	301. 0951	6. 295E+10
-8. 2468	346690.	0. 000				
37. 967	0. 000110	77. 1790	116. 8413	-2. 768E-06	300. 6829	6. 295E+10
-7. 2909	346920.	0. 000				
38. 403	9. 558E-05	591. 0492	81. 1606	-2. 740E-06	301. 0615	6. 295E+10
-6. 3360	347151.	0. 000				
38. 840	8. 136E-05	931. 1259	50. 4393	-2. 677E-06	301. 3121	6. 295E+10
-5. 3969	347381.	0. 000				
39. 276	6. 754E-05	1123. 1435	24. 5688	-2. 591E-06	301. 4536	6. 295E+10
-4. 4834	347612.	0. 000				
39. 712	5. 422E-05	1192. 1412	3. 4000	-2. 495E-06	301. 5044	6. 295E+10
-3. 6012	347842.	0. 000				
40. 149	4. 141E-05	1162. 3077	-13. 2364	-2. 397E-06	301. 4824	6. 295E+10
-2. 7524	348072.	0. 000				
40. 585	2. 911E-05	1056. 9227	-25. 5130	-2. 305E-06	301. 4048	6. 295E+10
-1. 9362	348303.	0. 000				
41. 022	1. 727E-05	898. 3778	-33. 5923	-2. 223E-06	301. 2880	6. 295E+10

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-1. 1494	348533.	0. 000					
41. 458	5. 822E-06	708. 2572	-37. 6174	-2. 157E-06	301. 1479	6. 295E+10	
-0. 3878	348763.	0. 000					
41. 894	-5. 317E-06	507. 4604	-37. 7049	-2. 106E-06	300. 9999	6. 295E+10	
0. 3544	348994.	0. 000					
42. 331	-1. 624E-05	316. 3515	-33. 9420	-2. 072E-06	300. 8591	6. 295E+10	
1. 0827	349224.	0. 000					
42. 767	-2. 702E-05	154. 9163	-26. 3865	-2. 052E-06	300. 7402	6. 295E+10	
1. 8028	349455.	0. 000					
43. 204	-3. 773E-05	42. 9132	-15. 0691	-2. 044E-06	300. 6576	6. 295E+10	
2. 5194	349685.	0. 000					
43. 640	-4. 842E-05	0. 000	0. 000	-2. 042E-06	300. 6260	6. 295E+10	
3. 2357	174958.	0. 000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection	=	0. 2370720 inches
Computed slope at pile head	=	-0. 0021099 radians
Maximum bending moment	=	862815. inch-lbs
Maximum shear force	=	15000. lbs
Depth of maximum bending moment	=	8. 7280000 feet below pile head
Depth of maximum shear force	=	0. 000000 feet below pile head
Number of iterations	=	15
Number of zero deflection points	=	3

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	11000. 0 lbs
Applied moment at pile head	=	1. 0 in-lbs
Axial thrust load on pile head	=	276000. 0 lbs

Depth Res.	Soil	Deflect. Spr.	Bendi ng Distri b.	Shear Force	Slope S	Total Stress	Bendi ng Sti ffness	Soil p
feet	Es*h	Lat. Load	Moment	lbs	radians	psi *	lb-in^2	lb/in
lb/i nch	inches	lb/i nch	in-lbs					
0. 00	0. 1475	1. 0000	11000.	-0. 001373	610. 0947	6. 295E+10		
-99. 4563	1764. 9597	0. 000	10472.	-0. 001371	652. 9969	6. 295E+10		
0. 436	0. 1404	58227.	9929. 5033	-0. 001363	693. 8277	6. 295E+10		
-102. 2603	3815. 3669	0. 000	9374. 1213	-0. 001352	732. 5294	6. 295E+10		
0. 873	0. 1332	113641.	8806. 7935	-0. 001336	769. 0494	6. 295E+10		
-104. 8593	4122. 7941	0. 000	8228. 6602	-0. 001316	803. 3391	6. 295E+10		
1. 309	0. 1261	166166.	7640. 8871	-0. 001292	835. 3551	6. 295E+10		
-107. 2481	4454. 6907	0. 000						
1. 746	0. 1190	215729.						
-109. 4216	4813. 8823	0. 000						
2. 182	0. 1121	262266.						
-111. 3748	5203. 5876	0. 000						
2. 618	0. 1053	305717.						
-113. 1031	5627. 4880	0. 000						

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3.055	0.0985	346030.	7044.6641	-0.001265	865.0585	6.295E+10	
-114.6019	6089.8117	0.000					
3.491	0.0920	383158.	6441.2048	-0.001235	892.4155	6.295E+10	
-115.8668	6595.4364	0.000					
3.928	0.0856	417062.	5831.7456	-0.001202	917.3973	6.295E+10	
-116.8934	7150.0160	0.000					
4.364	0.0794	447711.	5217.5457	-0.001166	939.9801	6.295E+10	
-117.6774	7760.1364	0.000					
4.800	0.0734	475079.	4599.8861	-0.001127	960.1453	6.295E+10	
-118.2146	8433.5117	0.000					
5.237	0.0676	499147.	3980.0703	-0.001087	977.8797	6.295E+10	
-118.5009	9179.2307	0.000					
5.673	0.0620	519906.	3359.4240	-0.001044	993.1754	6.295E+10	
-118.5318	10008.	0.000					
6.110	0.0567	537352.	2739.2956	-0.001000	1006.0298	6.295E+10	
-118.3030	10933.	0.000					
6.546	0.0515	551488.	2121.0578	-0.000955	1016.4461	6.295E+10	
-117.8098	11969.	0.000					
6.982	0.0467	562328.	1476.1651	-0.000909	1024.4330	6.295E+10	
-128.4829	14419.	0.000					
7.419	0.0420	569576.	795.9412	-0.000862	1029.7738	6.295E+10	
-131.3032	16362.	0.000					
7.855	0.0376	573155.	117.3889	-0.000814	1032.4109	6.295E+10	
-127.8445	17788.	0.000					
8.292	0.0335	573159.	-526.7778	-0.000767	1032.4140	6.295E+10	
-118.1708	18474.	0.000					
8.728	0.0296	569854.	-1119.8396	-0.000719	1029.9783	6.295E+10	
-108.3270	19159.	0.000					
9.164	0.0260	563509.	-1661.1480	-0.000672	1025.3033	6.295E+10	
-98.4055	19845.	0.000					
9.601	0.0226	554398.	-2150.5234	-0.000625	1018.5898	6.295E+10	
-88.4931	20531.	0.000					
10.037	0.0194	542793.	-2588.2238	-0.000580	1010.0391	6.295E+10	
-78.6702	21216.	0.000					
10.474	0.0165	528965.	-2974.9106	-0.000535	999.8506	6.295E+10	
-69.0104	21902.	0.000					
10.910	0.0138	513182.	-3311.6134	-0.000492	988.2208	6.295E+10	
-59.5806	22587.	0.000					
11.346	0.0113	495702.	-3599.6937	-0.000450	975.3415	6.295E+10	
-50.4409	23273.	0.000					
11.783	0.009102	476780.	-3840.8088	-0.000409	961.3991	6.295E+10	
-41.6441	23959.	0.000					
12.219	0.007063	456659.	-4036.8754	-0.000371	946.5730	6.295E+10	
-33.2362	24644.	0.000					
12.656	0.005222	435571.	-4190.0330	-0.000333	931.0348	6.295E+10	
-25.2566	25330.	0.000					
13.092	0.003571	413738.	-4302.6090	-0.000298	914.9476	6.295E+10	
-17.7376	26015.	0.000					
13.528	0.002100	391369.	-4377.0839	-0.000265	898.4654	6.295E+10	
-10.7053	26701.	0.000					
13.965	0.000799	368659.	-4416.0584	-0.000233	881.7322	6.295E+10	
-4.1796	27387.	0.000					
14.401	-0.000341	345790.	-4422.2216	-0.000203	864.8818	6.295E+10	
1.8257	28072.	0.000					
14.838	-0.001330	322930.	-4398.3209	-0.000175	848.0378	6.295E+10	
7.3022	28758.	0.000					
15.274	-0.002178	300231.	-4347.1340	-0.000150	831.3126	6.295E+10	
12.2467	29443.	0.000					
15.710	-0.002896	277832.	-4271.4426	-0.000125	814.8083	6.295E+10	
16.6608	30129.	0.000					
16.147	-0.003492	255856.	-4174.0083	-0.000103	798.6161	6.295E+10	
20.5506	30815.	0.000					
16.583	-0.003978	234414.	-4057.5504	-8.289E-05	782.8165	6.295E+10	

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23. 9261	31500.	0. 000					
17. 020	-0. 004361	213599.	-3924. 7264	-6. 426E-05	767. 4796	6. 295E+10	
26. 8010	32186.	0. 000					
17. 456	-0. 004651	193493.	-3778. 1140	-4. 732E-05	752. 6653	6. 295E+10	
29. 1921	32871.	0. 000					
17. 892	-0. 004856	174165.	-3620. 1955	-3. 203E-05	738. 4237	6. 295E+10	
31. 1189	33557.	0. 000					
18. 329	-0. 004986	155669.	-3453. 3446	-1. 831E-05	724. 7956	6. 295E+10	
32. 6035	34243.	0. 000					
18. 765	-0. 005048	138049.	-3279. 8149	-6. 094E-06	711. 8124	6. 295E+10	
33. 6697	34928.	0. 000					
19. 202	-0. 005050	121336.	-3101. 7301	4. 695E-06	699. 4974	6. 295E+10	
34. 3431	35614.	0. 000					
19. 638	-0. 004999	105549.	-2921. 0768	1. 413E-05	687. 8656	6. 295E+10	
34. 6506	36299.	0. 000					
20. 074	-0. 004902	90700.	-2739. 6985	2. 230E-05	676. 9246	6. 295E+10	
34. 6200	36985.	0. 000					
20. 511	-0. 004765	76790.	-2559. 2914	2. 926E-05	666. 6752	6. 295E+10	
34. 2798	37671.	0. 000					
20. 947	-0. 004595	63811.	-2381. 4013	3. 511E-05	657. 1116	6. 295E+10	
33. 6587	38356.	0. 000					
21. 384	-0. 004398	51747.	-2207. 4227	3. 992E-05	648. 2225	6. 295E+10	
32. 7859	39042.	0. 000					
21. 820	-0. 004177	40576.	-2038. 5981	4. 376E-05	639. 9914	6. 295E+10	
31. 6903	39727.	0. 000					
22. 256	-0. 003939	30269.	-1876. 0192	4. 670E-05	632. 3970	6. 295E+10	
30. 4006	40413.	0. 000					
22. 693	-0. 003688	20792.	-1720. 6285	4. 883E-05	625. 4142	6. 295E+10	
28. 9451	41099.	0. 000					
23. 129	-0. 003428	12107.	-1573. 2214	5. 020E-05	619. 0145	6. 295E+10	
27. 3515	41784.	0. 000					
23. 566	-0. 003162	4169. 7434	-1434. 4498	5. 087E-05	613. 1663	6. 295E+10	
25. 6471	42470.	0. 000					
24. 002	-0. 002895	-3064. 2924	-1304. 8255	5. 092E-05	612. 3518	6. 295E+10	
23. 8581	43155.	0. 000					
24. 438	-0. 002629	-9643. 6735	-1184. 7237	5. 039E-05	617. 1997	6. 295E+10	
22. 0103	43841.	0. 000					
24. 875	-0. 002367	-15618.	-1074. 3872	4. 934E-05	621. 6019	6. 295E+10	
20. 1286	44527.	0. 000					
25. 311	-0. 002112	-21039.	-973. 9305	4. 782E-05	625. 5961	6. 295E+10	
18. 2371	45212.	0. 000					
25. 748	-0. 001867	-25957.	-856. 3757	4. 586E-05	629. 2199	6. 295E+10	
26. 6586	74794.	0. 000					
26. 184	-0. 001632	-30141.	-709. 3221	4. 353E-05	632. 3026	6. 295E+10	
29. 5030	94669.	0. 000					
26. 620	-0. 001411	-33512.	-551. 2628	4. 088E-05	634. 7866	6. 295E+10	
30. 8618	114571.	0. 000					
27. 057	-0. 001204	-36033.	-389. 4956	3. 799E-05	636. 6439	6. 295E+10	
30. 9191	134499.	0. 000					
27. 493	-0. 001013	-37701.	-230. 3239	3. 492E-05	637. 8733	6. 295E+10	
29. 8706	154455.	0. 000					
27. 930	-0. 000838	-38546.	-79. 0123	3. 175E-05	638. 4958	6. 295E+10	
27. 9172	174437.	0. 000					
28. 366	-0. 000680	-38621.	60. 2212	2. 854E-05	638. 5507	6. 295E+10	
25. 2578	194446.	0. 000					
28. 802	-0. 000539	-37998.	184. 1805	2. 535E-05	638. 0918	6. 295E+10	
22. 0838	214481.	0. 000					
29. 239	-0. 000415	-36765.	290. 6393	2. 224E-05	637. 1833	6. 295E+10	
18. 5741	234544.	0. 000					
29. 675	-0. 000306	-35018.	378. 2640	1. 926E-05	635. 8963	6. 295E+10	
14. 8908	254633.	0. 000					
30. 112	-0. 000213	-32859.	446. 5194	1. 643E-05	634. 3052	6. 295E+10	
11. 1768	274749.	0. 000					

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30.548	-0.000134	-30389.	495.5622	1.380E-05	632.4854	6.295E+10	
7.5533	294892.	0.000					
30.984	-6.847E-05	-27708.	526.1266	1.139E-05	630.5102	6.295E+10	
4.1196	315062.	0.000					
31.421	-1.489E-05	-24911.	539.4090	9.197E-06	628.4494	6.295E+10	
0.9530	335258.	0.000					
31.857	2.785E-05	-22085.	537.1188	7.242E-06	626.3671	6.295E+10	
-1.8277	343695.	0.000					
32.294	6.096E-05	-19307.	521.8499	5.520E-06	624.3197	6.295E+10	
-4.0037	343926.	0.000					
32.730	8.566E-05	-16636.	496.6258	4.025E-06	622.3516	6.295E+10	
-5.6297	344156.	0.000					
33.166	0.000103	-14117.	464.1284	2.746E-06	620.4957	6.295E+10	
-6.7814	344386.	0.000					
33.603	0.000114	-11782.	426.6558	1.669E-06	618.7756	6.295E+10	
-7.5299	344617.	0.000					
34.039	0.000121	-9653.1323	386.1460	7.770E-07	617.2067	6.295E+10	
-7.9413	344847.	0.000					
34.476	0.000123	-7740.3971	344.2058	5.350E-08	615.7973	6.295E+10	
-8.0762	345077.	0.000					
34.912	0.000121	-6048.2131	302.1411	-5.201E-07	614.5504	6.295E+10	
-7.9889	345308.	0.000					
35.348	0.000117	-4574.3892	260.9891	-9.619E-07	613.4645	6.295E+10	
-7.7276	345538.	0.000					
35.785	0.000111	-3311.9368	221.5510	-1.290E-06	612.5343	6.295E+10	
-7.3343	345769.	0.000					
36.221	0.000104	-2250.2235	184.4232	-1.521E-06	611.7520	6.295E+10	
-6.8452	345999.	0.000					
36.658	9.515E-05	-1375.9640	150.0282	-1.672E-06	611.1078	6.295E+10	
-6.2907	346229.	0.000					
37.094	8.609E-05	-674.0548	118.6431	-1.757E-06	610.5906	6.295E+10	
-5.6957	346460.	0.000					
37.530	7.674E-05	-128.2636	90.4267	-1.791E-06	610.1885	6.295E+10	
-5.0805	346690.	0.000					
37.967	6.734E-05	278.2154	65.4440	-1.785E-06	610.2989	6.295E+10	
-4.4607	346920.	0.000					
38.403	5.805E-05	562.3291	43.6878	-1.750E-06	610.5083	6.295E+10	
-3.8482	347151.	0.000					
38.840	4.901E-05	740.8413	25.0989	-1.695E-06	610.6398	6.295E+10	
-3.2511	347381.	0.000					
39.276	4.029E-05	830.1053	9.5828	-1.630E-06	610.7056	6.295E+10	
-2.6747	347612.	0.000					
39.712	3.194E-05	845.9194	-2.9754	-1.560E-06	610.7172	6.295E+10	
-2.1214	347842.	0.000					
40.149	2.395E-05	803.4530	-12.6986	-1.492E-06	610.6860	6.295E+10	
-1.5920	348072.	0.000					
40.585	1.632E-05	717.2310	-19.7084	-1.428E-06	610.6224	6.295E+10	
-1.0851	348303.	0.000					
41.022	8.991E-06	601.1641	-24.1165	-1.374E-06	610.5369	6.295E+10	
-0.5984	348533.	0.000					
41.458	1.928E-06	468.6151	-26.0195	-1.329E-06	610.4392	6.295E+10	
-0.1284	348763.	0.000					
41.894	-4.930E-06	332.4879	-25.4956	-1.296E-06	610.3389	6.295E+10	
0.3285	348994.	0.000					
42.331	-1.164E-05	205.3307	-22.6022	-1.273E-06	610.2452	6.295E+10	
0.7765	349224.	0.000					
42.767	-1.827E-05	99.4424	-17.3774	-1.261E-06	610.1672	6.295E+10	
1.2190	349455.	0.000					
43.204	-2.485E-05	26.9717	-9.8411	-1.255E-06	610.1138	6.295E+10	
1.6592	349685.	0.000					
43.640	-3.142E-05	0.000	0.000	-1.254E-06	610.0939	6.295E+10	
2.0992	174958.	0.000					

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* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.1475481 inches
 Computed slope at pile head = -0.0013730 radians
 Maximum bending moment = 573159. inch-lbs
 Maximum shear force = 11000. lbs
 Depth of maximum bending moment = 8.2916000 feet below pile head
 Depth of maximum shear force = 0.000000 feet below pile head
 Number of iterations = 15
 Number of zero deflection points = 3

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 14000.0 lbs
 Applied moment at pile head = 1.0 in-lbs
 Axial thrust load on pile head = 271000.0 lbs

Depth Res.	Deflect. Soil Spr.	Bending Distrib. Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
X	y	Load			psi *	lb-in ²	lb/in
Es*h	Lat. inches	in-lbs	lbs	radians			
feet	lb/inch						
lb/inch	lb/inch						
0.00	0.2173	1.0000	14000.	-0.001953	599.0423	6.295E+10	
-113.1547	1363.3792	0.000					
0.436	0.2071	74537.	13399.	-0.001950	653.9623	6.295E+10	
-116.4125	2943.8303	0.000					
0.873	0.1969	145871.	12781.	-0.001941	706.5235	6.295E+10	
-119.4470	3176.9950	0.000					
1.309	0.1868	213913.	12148.	-0.001926	756.6584	6.295E+10	
-122.2521	3428.0298	0.000					
1.746	0.1767	278576.	11502.	-0.001906	804.3043	6.295E+10	
-124.8221	3698.9460	0.000					
2.182	0.1668	339784.	10842.	-0.001880	849.4037	6.295E+10	
-127.1514	3992.0289	0.000					
2.618	0.1570	397464.	10170.	-0.001849	891.9043	6.295E+10	
-129.2345	4309.8847	0.000					
3.055	0.1474	451553.	9488.8638	-0.001814	931.7588	6.295E+10	
-131.0659	4655.4972	0.000					
3.491	0.1380	501995.	8798.3750	-0.001774	968.9257	6.295E+10	
-132.6405	5032.2975	0.000					
3.928	0.1288	548740.	8100.3267	-0.001731	1003.3686	6.295E+10	
-133.9530	5444.2476	0.000					
4.364	0.1199	591746.	7396.1045	-0.001683	1035.0571	6.295E+10	
-134.9984	5895.9449	0.000					
4.800	0.1112	630981.	6687.1207	-0.001632	1063.9661	6.295E+10	
-135.7715	6392.7499	0.000					
5.237	0.1028	666417.	5974.8142	-0.001578	1090.0768	6.295E+10	
-136.2674	6940.9465	0.000					
5.673	0.0947	698038.	5260.6502	-0.001521	1113.3759	6.295E+10	
-136.4809	7547.9433	0.000					

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6. 110	0. 0869	725834.	4546. 1209	-0. 001462	1133. 8565	6. 295E+10	
-136. 4069	8222. 5288	0. 000					
6. 546	0. 0794	749803.	3832. 7457	-0. 001401	1151. 5176	6. 295E+10	
-136. 0401	8975. 1986	0. 000					
6. 982	0. 0722	769953.	3037. 8661	-0. 001338	1166. 3645	6. 295E+10	
-167. 5344	12151.	0. 000					
7. 419	0. 0654	785417.	2149. 4802	-0. 001273	1177. 7591	6. 295E+10	
-171. 7514	13760.	0. 000					
7. 855	0. 0589	796079.	1241. 8381	-0. 001207	1185. 6149	6. 295E+10	
-174. 8886	15557.	0. 000					
8. 292	0. 0527	801850.	320. 7273	-0. 001141	1189. 8674	6. 295E+10	
-176. 8952	17571.	0. 000					
8. 728	0. 0469	802675.	-591. 9648	-0. 001074	1190. 4757	6. 295E+10	
-171. 6734	19159.	0. 000					
9. 164	0. 0415	798698.	-1452. 9979	-0. 001007	1187. 5451	6. 295E+10	
-157. 1660	19845.	0. 000					
9. 601	0. 0364	790317.	-2237. 8945	-0. 000941	1181. 3693	6. 295E+10	
-142. 5959	20531.	0. 000					
10. 037	0. 0316	777931.	-2946. 6453	-0. 000876	1172. 2433	6. 295E+10	
-128. 0850	21216.	0. 000					
10. 474	0. 0272	761941.	-3579. 8552	-0. 000812	1160. 4614	6. 295E+10	
-113. 7459	21902.	0. 000					
10. 910	0. 0231	742742.	-4138. 6938	-0. 000749	1146. 3148	6. 295E+10	
-99. 6817	22587.	0. 000					
11. 346	0. 0193	720721.	-4624. 8448	-0. 000689	1130. 0894	6. 295E+10	
-85. 9855	23273.	0. 000					
11. 783	0. 0159	696257.	-5040. 4536	-0. 000630	1112. 0637	6. 295E+10	
-72. 7407	23959.	0. 000					
12. 219	0. 0128	669716.	-5388. 0751	-0. 000573	1092. 5077	6. 295E+10	
-60. 0203	24644.	0. 000					
12. 656	0. 009900	641451.	-5670. 6213	-0. 000518	1071. 6805	6. 295E+10	
-47. 8876	25330.	0. 000					
13. 092	0. 007326	611796.	-5891. 3097	-0. 000466	1049. 8299	6. 295E+10	
-36. 3960	26015.	0. 000					
13. 528	0. 005019	581070.	-6053. 6122	-0. 000416	1027. 1906	6. 295E+10	
-25. 5894	26701.	0. 000					
13. 965	0. 002964	549575.	-6161. 2069	-0. 000369	1003. 9837	6. 295E+10	
-15. 5024	27387.	0. 000					
14. 401	0. 001149	517589.	-6217. 9301	-0. 000325	980. 4157	6. 295E+10	
-6. 1609	28072.	0. 000					
14. 838	-0. 000440	485373.	-6227. 7318	-0. 000283	956. 6782	6. 295E+10	
2. 4175	28758.	0. 000					
15. 274	-0. 001818	453166.	-6194. 6332	-0. 000244	932. 9473	6. 295E+10	
10. 2232	29443.	0. 000					
15. 710	-0. 002999	421186.	-6122. 6869	-0. 000208	909. 3836	6. 295E+10	
17. 2540	30129.	0. 000					
16. 147	-0. 003996	389630.	-6015. 9398	-0. 000174	886. 1319	6. 295E+10	
23. 5141	30815.	0. 000					
16. 583	-0. 004824	358672.	-5878. 3994	-0. 000143	863. 3215	6. 295E+10	
29. 0143	31500.	0. 000					
17. 020	-0. 005495	328468.	-5714. 0030	-0. 000114	841. 0661	6. 295E+10	
33. 7708	32186.	0. 000					
17. 456	-0. 006023	299151.	-5526. 5897	-8. 839E-05	819. 4646	6. 295E+10	
37. 8047	32871.	0. 000					
17. 892	-0. 006420	270836.	-5319. 8761	-6. 468E-05	798. 6009	6. 295E+10	
41. 1418	33557.	0. 000					
18. 329	-0. 006700	243616.	-5097. 4342	-4. 328E-05	778. 5450	6. 295E+10	
43. 8115	34243.	0. 000					
18. 765	-0. 006874	217570.	-4862. 6734	-2. 410E-05	759. 3533	6. 295E+10	
45. 8466	34928.	0. 000					
19. 202	-0. 006953	192755.	-4618. 8241	-7. 032E-06	741. 0690	6. 295E+10	
47. 2825	35614.	0. 000					
19. 638	-0. 006947	169214.	-4368. 9253	8. 024E-06	723. 7234	6. 295E+10	

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48. 1570	36299.	0. 000					
20. 074	-0. 006869	146974.	-4115. 8139	2. 118E-05	707. 3361	6. 295E+10	
48. 5095	36985.	0. 000					
20. 511	-0. 006726	126047.	-3862. 1168	3. 253E-05	691. 9163	6. 295E+10	
48. 3807	37671.	0. 000					
20. 947	-0. 006528	106431.	-3610. 2452	4. 220E-05	677. 4632	6. 295E+10	
47. 8123	38356.	0. 000					
21. 384	-0. 006284	88115.	-3362. 3910	5. 029E-05	663. 9669	6. 295E+10	
46. 8464	39042.	0. 000					
21. 820	-0. 006001	71072.	-3120. 5248	5. 692E-05	651. 4096	6. 295E+10	
45. 5253	39727.	0. 000					
22. 256	-0. 005688	55270.	-2886. 3962	6. 217E-05	639. 7660	6. 295E+10	
43. 8914	40413.	0. 000					
22. 693	-0. 005350	40665.	-2661. 5341	6. 616E-05	629. 0046	6. 295E+10	
41. 9863	41099.	0. 000					
23. 129	-0. 004995	27206.	-2447. 2499	6. 899E-05	619. 0880	6. 295E+10	
39. 8515	41784.	0. 000					
23. 566	-0. 004627	14838.	-2244. 6407	7. 073E-05	609. 9743	6. 295E+10	
37. 5275	42470.	0. 000					
24. 002	-0. 004254	3496. 1471	-2054. 5928	7. 150E-05	601. 6176	6. 295E+10	
35. 0541	43155.	0. 000					
24. 438	-0. 003879	-6884. 3533	-1877. 7871	7. 136E-05	604. 1141	6. 295E+10	
32. 4702	43841.	0. 000					
24. 875	-0. 003506	-16374.	-1714. 7036	7. 039E-05	611. 1060	6. 295E+10	
29. 8135	44527.	0. 000					
25. 311	-0. 003141	-25043.	-1565. 6267	6. 867E-05	617. 4941	6. 295E+10	
27. 1209	45212.	0. 000					
25. 748	-0. 002787	-32966.	-1390. 3800	6. 625E-05	623. 3320	6. 295E+10	
39. 8080	74794.	0. 000					
26. 184	-0. 002447	-39794.	-1170. 2988	6. 323E-05	628. 3626	6. 295E+10	
44. 2438	94669.	0. 000					
26. 620	-0. 002125	-45403.	-932. 7199	5. 968E-05	632. 4957	6. 295E+10	
46. 4906	114571.	0. 000					
27. 057	-0. 001822	-49732.	-688. 4375	5. 573E-05	635. 6854	6. 295E+10	
46. 8039	134499.	0. 000					
27. 493	-0. 001541	-52772.	-446. 8521	5. 146E-05	637. 9251	6. 295E+10	
45. 4606	154455.	0. 000					
27. 930	-0. 001283	-54558.	-215. 8866	4. 700E-05	639. 2415	6. 295E+10	
42. 7480	174437.	0. 000					
28. 366	-0. 001049	-55166.	-1. 9569	4. 243E-05	639. 6894	6. 295E+10	
38. 9544	194446.	0. 000					
28. 802	-0. 000839	-54699.	190. 0078	3. 786E-05	639. 3454	6. 295E+10	
34. 3594	214481.	0. 000					
29. 239	-0. 000653	-53283.	356. 5008	3. 337E-05	638. 3023	6. 295E+10	
29. 2264	234544.	0. 000					
29. 675	-0. 000489	-51060.	495. 3364	2. 903E-05	636. 6639	6. 295E+10	
23. 7966	254633.	0. 000					
30. 112	-0. 000348	-48178.	605. 5199	2. 490E-05	634. 5403	6. 295E+10	
18. 2838	274749.	0. 000					
30. 548	-0. 000229	-44789.	687. 0969	2. 104E-05	632. 0431	6. 295E+10	
12. 8715	294892.	0. 000					
30. 984	-0. 000128	-41041.	740. 9901	1. 747E-05	629. 2818	6. 295E+10	
7. 7111	315062.	0. 000					
31. 421	-4. 564E-05	-37077.	768. 8318	1. 422E-05	626. 3612	6. 295E+10	
2. 9220	335258.	0. 000					
31. 857	2. 073E-05	-33029.	772. 9203	1. 130E-05	623. 3783	6. 295E+10	
-1. 3606	343695.	0. 000					
32. 294	7. 272E-05	-29014.	756. 8534	8. 720E-06	620. 4200	6. 295E+10	
-4. 7756	343926.	0. 000					
32. 730	0. 000112	-25127.	725. 0661	6. 468E-06	617. 5557	6. 295E+10	
-7. 3644	344156.	0. 000					
33. 166	0. 000140	-21439.	681. 5974	4. 531E-06	614. 8380	6. 295E+10	
-9. 2368	344386.	0. 000					

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33.603	0.000160	-18001.	629.9260	2.890E-06	612.3051	6.295E+10	
-10.4971	344617.	0.000					
34.039	0.000171	-14849.	573.0025	1.524E-06	609.9828	6.295E+10	
-11.2427	344847.	0.000					
34.476	0.000175	-12004.	513.2884	4.070E-07	607.8863	6.295E+10	
-11.5629	345077.	0.000					
34.912	0.000175	-9474.3153	452.7989	-4.864E-07	606.0225	6.295E+10	
-11.5388	345308.	0.000					
35.348	0.000170	-7260.0687	393.1491	-1.182E-06	604.3909	6.295E+10	
-11.2422	345538.	0.000					
35.785	0.000163	-5353.2727	335.6002	-1.707E-06	602.9860	6.295E+10	
-10.7364	345769.	0.000					
36.221	0.000153	-3740.2814	281.1052	-2.085E-06	601.7975	6.295E+10	
-10.0759	345999.	0.000					
36.658	0.000141	-2403.1701	230.3539	-2.341E-06	600.8122	6.295E+10	
-9.3067	346229.	0.000					
37.094	0.000128	-1321.0025	183.8147	-2.496E-06	600.0149	6.295E+10	
-8.4672	346460.	0.000					
37.530	0.000115	-470.8843	141.7744	-2.570E-06	599.3885	6.295E+10	
-7.5885	346690.	0.000					
37.967	0.000101	171.1817	104.3744	-2.583E-06	599.1677	6.295E+10	
-6.6950	346920.	0.000					
38.403	8.757E-05	629.6225	71.6435	-2.550E-06	599.5054	6.295E+10	
-5.8053	347151.	0.000					
38.840	7.436E-05	928.7836	43.5274	-2.485E-06	599.7259	6.295E+10	
-4.9326	347381.	0.000					
39.276	6.155E-05	1092.5631	19.9141	-2.401E-06	599.8466	6.295E+10	
-4.0856	347612.	0.000					
39.712	4.922E-05	1144.1702	0.6568	-2.308E-06	599.8846	6.295E+10	
-3.2691	347842.	0.000					
40.149	3.738E-05	1105.9915	-14.4086	-2.214E-06	599.8564	6.295E+10	
-2.4846	348072.	0.000					
40.585	2.603E-05	999.5449	-25.4469	-2.126E-06	599.7780	6.295E+10	
-1.7311	348303.	0.000					
41.022	1.511E-05	845.5065	-32.6127	-2.050E-06	599.6645	6.295E+10	
-1.0056	348533.	0.000					
41.458	4.560E-06	663.7905	-36.0409	-1.987E-06	599.5306	6.295E+10	
-0.3037	348763.	0.000					
41.894	-5.700E-06	473.6677	-35.8414	-1.940E-06	599.3905	6.295E+10	
0.3799	348994.	0.000					
42.331	-1.575E-05	293.9071	-32.0958	-1.908E-06	599.2581	6.295E+10	
1.0506	349224.	0.000					
42.767	-2.568E-05	142.9239	-24.8578	-1.889E-06	599.1468	6.295E+10	
1.7137	349455.	0.000					
43.204	-3.554E-05	38.9195	-14.1561	-1.882E-06	599.0702	6.295E+10	
2.3734	349685.	0.000					
43.640	-4.539E-05	0.000	0.000	-1.880E-06	599.0415	6.295E+10	
3.0330	174958.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection	=	0.2173161 inches
Computed slope at pile head	=	-0.0019533 radians
Maximum bending moment	=	802675. inch-lbs
Maximum shear force	=	14000. lbs
Depth of maximum bending moment	=	8.7280000 feet below pile head
Depth of maximum shear force	=	0.000000 feet below pile head
Number of iterations	=	16
Number of zero deflection points	=	3

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 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 13000.0 lbs
 Applied moment at pile head = 1.0 in-lbs
 Axial thrust load on pile head = 128000.0 lbs

Depth Res.	Soil X Es*h feet lb/inch	Deflect. Spr. y Lat. Load inches lb/inch	Bending Distrib. Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi *	Bending Stiffness lb-in ²	Soil p lb/in
-107.9836	0.00	0.1889	1.0000	13000.	-0.001714	282.9429	6.295E+10	
	0.436	1497.1617	0.000					
-111.0745	0.436	0.1799	67748.	12426.	-0.001711	332.8606	6.295E+10	
	0.873	3233.7455	0.000					
-113.9497	0.873	0.1709	132445.	11837.	-0.001703	380.5311	6.295E+10	
	1.309	3491.1068	0.000					
-116.6036	1.309	0.1620	194009.	11234.	-0.001689	425.8936	6.295E+10	
	1.746	3768.3999	0.000					
-119.0305	1.746	0.1532	252365.	10617.	-0.001671	468.8919	6.295E+10	
	2.182	4067.8817	0.000					
-121.2253	2.182	0.1445	307443.	9987.4638	-0.001648	509.4747	6.295E+10	
	2.618	4392.1170	0.000					
-123.1827	2.618	0.1360	359179.	9347.5059	-0.001620	547.5952	6.295E+10	
	3.055	4744.0325	0.000					
-124.8977	3.055	0.1276	407516.	8697.9323	-0.001588	583.2118	6.295E+10	
	3.491	5126.9810	0.000					
-126.3654	3.491	0.1193	452406.	8040.0249	-0.001552	616.2879	6.295E+10	
	3.928	5544.8195	0.000					
-127.5810	3.928	0.1113	493805.	7375.0915	-0.001513	646.7920	6.295E+10	
	4.364	6002.0050	0.000					
-128.5398	4.364	0.1035	531678.	6704.4646	-0.001470	674.6977	6.295E+10	
	4.800	6503.7125	0.000					
-129.2371	4.800	0.0959	565996.	6029.5014	-0.001425	699.9843	6.295E+10	
	5.237	7055.9805	0.000					
-129.6682	5.237	0.0886	596739.	5351.5837	-0.001376	722.6361	6.295E+10	
	5.673	7665.8938	0.000					
-129.8285	5.673	0.0815	623892.	4672.1175	-0.001325	742.6432	6.295E+10	
	6.110	8341.8133	0.000					
-129.7131	6.110	0.0747	647449.	3992.5338	-0.001273	760.0012	6.295E+10	
	6.546	9093.6690	0.000					
-129.3172	6.546	0.0682	667414.	3314.2889	-0.001218	774.7116	6.295E+10	
	6.982	9933.3362	0.000					
-152.6299	6.982	0.0619	683795.	2576.0388	-0.001162	786.7814	6.295E+10	
	7.419	12904.	0.000					
-156.3554	7.419	0.0560	695951.	1766.9918	-0.001104	795.7390	6.295E+10	
	7.855	14619.	0.000					
-159.0853	7.855	0.0504	703782.	941.0418	-0.001046	801.5085	6.295E+10	
	8.292	16537.	0.000					
-158.9334	8.292	0.0451	707210.	108.3416	-0.000987	804.0345	6.295E+10	
	8.728	18474.	0.000					
-146.4786	8.728	0.0400	706240.	-691.3490	-0.000929	803.3199	6.295E+10	
		19159.	0.000					

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9. 164	0. 0353	701214.	-1425. 4299	-0. 000870	799. 6164 6. 295E+10
-133. 8762	19845.	0. 000			
9. 601	0. 0309	692477.	-2093. 4222	-0. 000812	793. 1789 6. 295E+10
-121. 2385	20531.	0. 000			
10. 037	0. 0268	680377.	-2695. 4152	-0. 000755	784. 2631 6. 295E+10
-108. 6702	21216.	0. 000			
10. 474	0. 0230	665258.	-3232. 0240	-0. 000699	773. 1234 6. 295E+10
-96. 2675	21902.	0. 000			
10. 910	0. 0195	647463.	-3704. 3470	-0. 000644	760. 0112 6. 295E+10
-84. 1186	22587.	0. 000			
11. 346	0. 0163	627324.	-4113. 9207	-0. 000591	745. 1725 6. 295E+10
-72. 3028	23273.	0. 000			
11. 783	0. 0133	605168.	-4462. 6745	-0. 000540	728. 8471 6. 295E+10
-60. 8907	23959.	0. 000			
12. 219	0. 0106	581308.	-4752. 8850	-0. 000491	711. 2665 6. 295E+10
-49. 9443	24644.	0. 000			
12. 656	0. 008170	556046.	-4987. 1303	-0. 000443	692. 6527 6. 295E+10
-39. 5169	25330.	0. 000			
13. 092	0. 005969	529669.	-5168. 2452	-0. 000398	673. 2175 6. 295E+10
-29. 6532	26015.	0. 000			
13. 528	0. 003999	502450.	-5299. 2776	-0. 000355	653. 1614 6. 295E+10
-20. 3898	26701.	0. 000			
13. 965	0. 002248	474643.	-5383. 4461	-0. 000315	632. 6727 6. 295E+10
-11. 7552	27387.	0. 000			
14. 401	0. 000703	446488.	-5424. 0991	-0. 000276	611. 9269 6. 295E+10
-3. 7707	28072.	0. 000			
14. 838	-0. 000646	418204.	-5424. 6766	-0. 000240	591. 0865 6. 295E+10
3. 5501	28758.	0. 000			
15. 274	-0. 001814	389994.	-5388. 6733	-0. 000207	570. 3007 6. 295E+10
10. 2000	29443.	0. 000			
15. 710	-0. 002812	362042.	-5319. 6049	-0. 000175	549. 7050 6. 295E+10
16. 1781	30129.	0. 000			
16. 147	-0. 003652	334514.	-5220. 9765	-0. 000147	529. 4214 6. 295E+10
21. 4894	30815.	0. 000			
16. 583	-0. 004346	307556.	-5096. 2534	-0. 000120	509. 5582 6. 295E+10
26. 1440	31500.	0. 000			
17. 020	-0. 004907	281298.	-4948. 8353	-9. 530E-05	490. 2107 6. 295E+10
30. 1569	32186.	0. 000			
17. 456	-0. 005344	255852.	-4782. 0324	-7. 296E-05	471. 4609 6. 295E+10
33. 5472	32871.	0. 000			
17. 892	-0. 005671	231311.	-4599. 0449	-5. 269E-05	453. 3786 6. 295E+10
36. 3380	33557.	0. 000			
18. 329	-0. 005896	207754.	-4402. 9443	-3. 443E-05	436. 0210 6. 295E+10
38. 5553	34243.	0. 000			
18. 765	-0. 006031	185242.	-4196. 6584	-1. 808E-05	419. 4340 6. 295E+10
40. 2279	34928.	0. 000			
19. 202	-0. 006086	163824.	-3982. 9576	-3. 562E-06	403. 6522 6. 295E+10
41. 3871	35614.	0. 000			
19. 638	-0. 006069	143531.	-3764. 4446	9. 223E-06	388. 7001 6. 295E+10
42. 0658	36299.	0. 000			
20. 074	-0. 005989	124384.	-3543. 5454	2. 037E-05	374. 5920 6. 295E+10
42. 2984	36985.	0. 000			
20. 511	-0. 005855	106390.	-3322. 5034	2. 997E-05	361. 3335 6. 295E+10
42. 1204	37671.	0. 000			
20. 947	-0. 005675	89546.	-3103. 3742	3. 812E-05	348. 9218 6. 295E+10
41. 5678	38356.	0. 000			
21. 384	-0. 005456	73836.	-2888. 0236	4. 491E-05	337. 3464 6. 295E+10
40. 6773	39042.	0. 000			
21. 820	-0. 005205	59237.	-2678. 1257	5. 045E-05	326. 5899 6. 295E+10
39. 4854	39727.	0. 000			
22. 256	-0. 004928	45718.	-2475. 1635	5. 481E-05	316. 6288 6. 295E+10
38. 0285	40413.	0. 000			
22. 693	-0. 004631	33240.	-2280. 4300	5. 810E-05	307. 4343 6. 295E+10

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36. 3427	41099.	0. 000					
23. 129	-0. 004319	21756.	-2095. 0305	6. 038E-05	298. 9728	6. 295E+10	
34. 4637	41784.	0. 000					
23. 566	-0. 003998	11216.	-1919. 8862	6. 176E-05	291. 2068	6. 295E+10	
32. 4262	42470.	0. 000					
24. 002	-0. 003672	1565. 3579	-1755. 7372	6. 229E-05	284. 0955	6. 295E+10	
30. 2644	43155.	0. 000					
24. 438	-0. 003346	-7255. 8966	-1603. 1476	6. 205E-05	288. 2885	6. 295E+10	
28. 0115	43841.	0. 000					
24. 875	-0. 003023	-15309.	-1462. 5090	6. 111E-05	294. 2219	6. 295E+10	
25. 7001	44527.	0. 000					
25. 311	-0. 002706	-22656.	-1334. 0460	5. 953E-05	299. 6354	6. 295E+10	
23. 3616	45212.	0. 000					
25. 748	-0. 002399	-29361.	-1183. 1577	5. 737E-05	304. 5759	6. 295E+10	
34. 2646	74794.	0. 000					
26. 184	-0. 002105	-35124.	-993. 7987	5. 469E-05	308. 8228	6. 295E+10	
38. 0540	94669.	0. 000					
26. 620	-0. 001826	-39843.	-789. 5384	5. 157E-05	312. 2993	6. 295E+10	
39. 9556	114571.	0. 000					
27. 057	-0. 001565	-43463.	-579. 6791	4. 810E-05	314. 9668	6. 295E+10	
40. 1923	134499.	0. 000					
27. 493	-0. 001322	-45978.	-372. 3092	4. 438E-05	316. 8203	6. 295E+10	
39. 0048	154455.	0. 000					
27. 930	-0. 001100	-47422.	-174. 2345	4. 050E-05	317. 8838	6. 295E+10	
36. 6424	174437.	0. 000					
28. 366	-0. 000898	-47858.	9. 0448	3. 654E-05	318. 2049	6. 295E+10	
33. 3542	194446.	0. 000					
28. 802	-0. 000717	-47376.	173. 3128	3. 257E-05	317. 8501	6. 295E+10	
29. 3818	214481.	0. 000					
29. 239	-0. 000557	-46086.	315. 5813	2. 869E-05	316. 8996	6. 295E+10	
24. 9523	234544.	0. 000					
29. 675	-0. 000417	-44109.	433. 9994	2. 493E-05	315. 4430	6. 295E+10	
20. 2731	254633.	0. 000					
30. 112	-0. 000296	-41574.	527. 7407	2. 137E-05	313. 5750	6. 295E+10	
15. 5279	274749.	0. 000					
30. 548	-0. 000193	-38610.	596. 8719	1. 804E-05	311. 3914	6. 295E+10	
10. 8742	294892.	0. 000					
30. 984	-0. 000107	-35347.	642. 2115	1. 496E-05	308. 9866	6. 295E+10	
6. 4416	315062.	0. 000					
31. 421	-3. 643E-05	-31904.	665. 1850	1. 216E-05	306. 4501	6. 295E+10	
2. 3323	335258.	0. 000					
31. 857	2. 031E-05	-28396.	667. 8017	9. 654E-06	303. 8652	6. 295E+10	
-1. 3329	343695.	0. 000					
32. 294	6. 468E-05	-24923.	653. 1893	7. 436E-06	301. 3061	6. 295E+10	
-4. 2477	343926.	0. 000					
32. 730	9. 819E-05	-21565.	625. 1709	5. 502E-06	298. 8317	6. 295E+10	
-6. 4529	344156.	0. 000					
33. 166	0. 000122	-18383.	587. 2146	3. 840E-06	296. 4869	6. 295E+10	
-8. 0431	344386.	0. 000					
33. 603	0. 000138	-15420.	542. 3049	2. 434E-06	294. 3038	6. 295E+10	
-9. 1085	344617.	0. 000					
34. 039	0. 000148	-12706.	492. 9706	1. 265E-06	292. 3042	6. 295E+10	
-9. 7329	344847.	0. 000					
34. 476	0. 000152	-10258.	441. 3193	3. 093E-07	290. 5007	6. 295E+10	
-9. 9934	345077.	0. 000					
34. 912	0. 000151	-8084. 1172	389. 0747	-4. 536E-07	288. 8987	6. 295E+10	
-9. 9595	345308.	0. 000					
35. 348	0. 000147	-6182. 6468	337. 6159	-1. 047E-06	287. 4977	6. 295E+10	
-9. 6932	345538.	0. 000					
35. 785	0. 000140	-4546. 6591	288. 0184	-1. 493E-06	286. 2922	6. 295E+10	
-9. 2487	345769.	0. 000					
36. 221	0. 000131	-3164. 0553	241. 0929	-1. 814E-06	285. 2735	6. 295E+10	
-8. 6727	345999.	0. 000					

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36.658	0.000121	-2019.1165	197.4244	-2.030E-06	284.4299	6.295E+10	
-8.0048	346229.	0.000					
37.094	0.000110	-1093.5905	157.4082	-2.159E-06	283.7479	6.295E+10	
-7.2779	346460.	0.000					
37.530	9.846E-05	-367.5919	121.2842	-2.220E-06	283.2130	6.295E+10	
-6.5184	346690.	0.000					
37.967	8.676E-05	179.6674	89.1679	-2.228E-06	283.0745	6.295E+10	
-5.7472	346920.	0.000					
38.403	7.513E-05	569.3041	61.0791	-2.197E-06	283.3616	6.295E+10	
-4.9803	347151.	0.000					
38.840	6.375E-05	822.3298	36.9662	-2.139E-06	283.5480	6.295E+10	
-4.2287	347381.	0.000					
39.276	5.273E-05	959.3407	16.7294	-2.065E-06	283.6490	6.295E+10	
-3.5000	347612.	0.000					
39.712	4.212E-05	1000.3144	0.2387	-1.983E-06	283.6792	6.295E+10	
-2.7980	347842.	0.000					
40.149	3.196E-05	964.4995	-12.6493	-1.901E-06	283.6528	6.295E+10	
-2.1241	348072.	0.000					
40.585	2.221E-05	870.3799	-22.0789	-1.825E-06	283.5834	6.295E+10	
-1.4772	348303.	0.000					
41.022	1.284E-05	735.7010	-28.1847	-1.758E-06	283.4842	6.295E+10	
-0.8547	348533.	0.000					
41.458	3.795E-06	577.5417	-31.0844	-1.704E-06	283.3677	6.295E+10	
-0.2527	348763.	0.000					
41.894	-5.001E-06	412.4195	-30.8734	-1.662E-06	283.2460	6.295E+10	
0.3333	348994.	0.000					
42.331	-1.362E-05	256.4144	-27.6230	-1.635E-06	283.1311	6.295E+10	
0.9081	349224.	0.000					
42.767	-2.212E-05	125.2984	-21.3800	-1.619E-06	283.0344	6.295E+10	
1.4762	349455.	0.000					
43.204	-3.057E-05	34.6585	-12.1696	-1.612E-06	282.9677	6.295E+10	
2.0414	349685.	0.000					
43.640	-3.901E-05	0.000	0.000	-1.611E-06	282.9421	6.295E+10	
2.6063	174958.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection	=	0.1888535 inches
Computed slope at pile head	=	-0.0017142 radians
Maximum bending moment	=	707210. inch-lbs
Maximum shear force	=	13000. lbs
Depth of maximum bending moment	=	8.2916000 feet below pile head
Depth of maximum shear force	=	0.000000 feet below pile head
Number of iterations	=	15
Number of zero deflection points	=	3

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	15000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	136000.0 lbs

Depth	Deflect.	Bending	Shear	Slope	Total	Bending	Soil
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Res.	Soil X Es*h feet lb/inch	Spr. y Lat. inches lb/inch	Distrib. Load Moment in-lbs	Force lbs	S radians	Stress psi *	Stiffness lb-in^2	p lb/in
	0.00	0.2371	1.0000	15000.	-0.002110	300.6267	6.295E+10	
-116.	4859	1286.5576	0.000					
	0.436	0.2260	78458.	14381.	-0.002107	358.4364	6.295E+10	
-119.	8591	2777.0550	0.000					
	0.873	0.2150	153624.	13745.	-0.002097	413.8206	6.295E+10	
-123.	0052	2995.9499	0.000					
	1.309	0.2041	225407.	13093.	-0.002081	466.7126	6.295E+10	
-125.	9182	3231.4376	0.000					
	1.746	0.1932	293724.	12427.	-0.002060	517.0504	6.295E+10	
-128.	5920	3485.3697	0.000					
	2.182	0.1825	358497.	11747.	-0.002032	564.7769	6.295E+10	
-131.	0210	3759.8478	0.000					
	2.618	0.1719	419656.	11055.	-0.002000	609.8402	6.295E+10	
-133.	1995	4057.2659	0.000					
	3.055	0.1615	477136.	10353.	-0.001963	652.1936	6.295E+10	
-135.	1220	4380.3619	0.000					
	3.491	0.1514	530883.	9640.9131	-0.001921	691.7959	6.295E+10	
-136.	7831	4732.2797	0.000					
	3.928	0.1414	580847.	8920.9565	-0.001875	728.6110	6.295E+10	
-138.	1774	5116.6451	0.000					
	4.364	0.1317	626988.	8194.4098	-0.001824	762.6086	6.295E+10	
-139.	2999	5537.6584	0.000					
	4.800	0.1223	669271.	7462.7110	-0.001770	793.7640	6.295E+10	
-140.	1452	6000.2092	0.000					
	5.237	0.1132	707671.	6727.3248	-0.001713	822.0583	6.295E+10	
-140.	7081	6510.0189	0.000					
	5.673	0.1044	742171.	5989.7434	-0.001653	847.4785	6.295E+10	
-140.	9835	7073.8183	0.000					
	6.110	0.0959	772760.	5251.4860	-0.001590	870.0174	6.295E+10	
-140.	9663	7699.5733	0.000					
	6.546	0.0877	799437.	4514.0997	-0.001524	889.6742	6.295E+10	
-140.	6509	8396.7710	0.000					
	6.982	0.0799	822210.	3679.2411	-0.001457	906.4539	6.295E+10	
-178.	1921	11678.	0.000					
	7.419	0.0725	840048.	2733.8735	-0.001388	919.5970	6.295E+10	
-182.	8557	13215.	0.000					
	7.855	0.0654	852821.	1767.0265	-0.001317	929.0085	6.295E+10	
-186.	3953	14931.	0.000					
	8.292	0.0587	860431.	784.7266	-0.001246	934.6163	6.295E+10	
-188.	7574	16851.	0.000					
	8.728	0.0523	862815.	-206.7262	-0.001175	936.3723	6.295E+10	
-189.	8909	19006.	0.000					
	9.164	0.0464	859939.	-1163.9380	-0.001103	934.2536	6.295E+10	
-175.	6803	19845.	0.000					
	9.601	0.0408	852195.	-2042.4690	-0.001032	928.5474	6.295E+10	
-159.	8418	20531.	0.000					
	10.037	0.0356	840017.	-2838.1638	-0.000961	919.5741	6.295E+10	
-144.	0441	21216.	0.000					
	10.474	0.0307	823838.	-3551.5605	-0.000892	907.6535	6.295E+10	
-128.	4111	21902.	0.000					
	10.910	0.0262	804090.	-4183.8175	-0.000824	893.1021	6.295E+10	
-113.	0559	22587.	0.000					
	11.346	0.0221	781193.	-4736.6593	-0.000758	876.2311	6.295E+10	
-98.	0814	23273.	0.000					
	11.783	0.0183	755560.	-5212.3199	-0.000694	857.3441	6.295E+10	
-83.	5794	23959.	0.000					

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12. 219	0. 0148	727590.	-5613. 4865	-0. 000633	836. 7352	6. 295E+10	
-69. 6312	24644.	0. 000					
12. 656	0. 0116	697668.	-5943. 2429	-0. 000573	814. 6876	6. 295E+10	
-56. 3070	25330.	0. 000					
13. 092	0. 008790	666160.	-6205. 0136	-0. 000517	791. 4717	6. 295E+10	
-43. 6665	26015.	0. 000					
13. 528	0. 006229	633415.	-6402. 5085	-0. 000463	767. 3443	6. 295E+10	
-31. 7593	26701.	0. 000					
13. 965	0. 003944	599762.	-6539. 6705	-0. 000411	742. 5476	6. 295E+10	
-20. 6246	27387.	0. 000					
14. 401	0. 001920	565507.	-6620. 6230	-0. 000363	717. 3078	6. 295E+10	
-10. 2922	28072.	0. 000					
14. 838	0. 000143	530937.	-6649. 6221	-0. 000317	691. 8355	6. 295E+10	
-0. 7829	28758.	0. 000					
15. 274	-0. 001404	496314.	-6631. 0092	-0. 000275	666. 3241	6. 295E+10	
7. 8914	29443.	0. 000					
15. 710	-0. 002733	461878.	-6569. 1683	-0. 000235	640. 9506	6. 295E+10	
15. 7265	30129.	0. 000					
16. 147	-0. 003862	427845.	-6468. 4851	-0. 000198	615. 8746	6. 295E+10	
22. 7257	30815.	0. 000					
16. 583	-0. 004804	394411.	-6333. 3101	-0. 000164	591. 2392	6. 295E+10	
28. 8993	31500.	0. 000					
17. 020	-0. 005575	361746.	-6167. 9243	-0. 000132	567. 1705	6. 295E+10	
34. 2636	32186.	0. 000					
17. 456	-0. 006188	329999.	-5976. 5089	-0. 000103	543. 7784	6. 295E+10	
38. 8404	32871.	0. 000					
17. 892	-0. 006657	299297.	-5763. 1180	-7. 713E-05	521. 1568	6. 295E+10	
42. 6563	33557.	0. 000					
18. 329	-0. 006996	269748.	-5531. 6543	-5. 346E-05	499. 3840	6. 295E+10	
45. 7425	34243.	0. 000					
18. 765	-0. 007217	241437.	-5285. 8489	-3. 219E-05	478. 5237	6. 295E+10	
48. 1336	34928.	0. 000					
19. 202	-0. 007333	214432.	-5029. 2433	-1. 323E-05	458. 6256	6. 295E+10	
49. 8673	35614.	0. 000					
19. 638	-0. 007355	188782.	-4765. 1749	3. 541E-06	439. 7257	6. 295E+10	
50. 9838	36299.	0. 000					
20. 074	-0. 007296	164518.	-4496. 7650	1. 824E-05	421. 8478	6. 295E+10	
51. 5253	36985.	0. 000					
20. 511	-0. 007164	141658.	-4226. 9100	3. 097E-05	405. 0039	6. 295E+10	
51. 5357	37671.	0. 000					
20. 947	-0. 006971	120203.	-3958. 2744	4. 186E-05	389. 1952	6. 295E+10	
51. 0596	38356.	0. 000					
21. 384	-0. 006726	100141.	-3693. 2865	5. 103E-05	374. 4130	6. 295E+10	
50. 1426	39042.	0. 000					
21. 820	-0. 006437	81449.	-3434. 1356	5. 858E-05	360. 6396	6. 295E+10	
48. 8304	39727.	0. 000					
22. 256	-0. 006112	64090.	-3182. 7720	6. 464E-05	347. 8494	6. 295E+10	
47. 1686	40413.	0. 000					
22. 693	-0. 005760	48021.	-2940. 9069	6. 930E-05	336. 0096	6. 295E+10	
45. 2027	41099.	0. 000					
23. 129	-0. 005386	33190.	-2710. 0154	7. 268E-05	325. 0810	6. 295E+10	
42. 9776	41784.	0. 000					
23. 566	-0. 004999	19534.	-2491. 3393	7. 487E-05	315. 0194	6. 295E+10	
40. 5375	42470.	0. 000					
24. 002	-0. 004602	6989. 5948	-2285. 8911	7. 598E-05	305. 7761	6. 295E+10	
37. 9257	43155.	0. 000					
24. 438	-0. 004203	-4515. 4375	-2094. 4588	7. 608E-05	303. 9531	6. 295E+10	
35. 1847	43841.	0. 000					
24. 875	-0. 003805	-15055.	-1917. 6109	7. 526E-05	311. 7192	6. 295E+10	
32. 3558	44527.	0. 000					
25. 311	-0. 003415	-24707.	-1755. 7017	7. 361E-05	318. 8308	6. 295E+10	
29. 4794	45212.	0. 000					
25. 748	-0. 003034	-33549.	-1565. 0344	7. 119E-05	325. 3456	6. 295E+10	

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43. 3389	74794.	0. 000					
26. 184	-0. 002669	-41200.	-1325. 2234	6. 808E-05	330. 9832	6. 295E+10	
48. 2480	94669.	0. 000					
26. 620	-0. 002321	-47525.	-1065. 9089	6. 439E-05	335. 6441	6. 295E+10	
50. 7875	114571.	0. 000					
27. 057	-0. 001995	-52455.	-798. 7935	6. 023E-05	339. 2767	6. 295E+10	
51. 2273	134499.	0. 000					
27. 493	-0. 001691	-55978.	-534. 1009	5. 572E-05	341. 8718	6. 295E+10	
49. 8622	154455.	0. 000					
27. 930	-0. 001411	-58129.	-280. 4774	5. 097E-05	343. 4570	6. 295E+10	
46. 9998	174437.	0. 000					
28. 366	-0. 001157	-58988.	-44. 9529	4. 610E-05	344. 0898	6. 295E+10	
42. 9499	194446.	0. 000					
28. 802	-0. 000928	-58665.	167. 0434	4. 121E-05	343. 8523	6. 295E+10	
38. 0142	214481.	0. 000					
29. 239	-0. 000725	-57297.	351. 6192	3. 638E-05	342. 8440	6. 295E+10	
32. 4777	234544.	0. 000					
29. 675	-0. 000547	-55034.	506. 3136	3. 171E-05	341. 1769	6. 295E+10	
26. 6021	254633.	0. 000					
30. 112	-0. 000393	-52039.	629. 9607	2. 726E-05	338. 9699	6. 295E+10	
20. 6203	274749.	0. 000					
30. 548	-0. 000262	-48475.	722. 5288	2. 308E-05	336. 3440	6. 295E+10	
14. 7327	294892.	0. 000					
30. 984	-0. 000151	-44505.	784. 9465	1. 921E-05	333. 4182	6. 295E+10	
9. 1054	315062.	0. 000					
31. 421	-6. 045E-05	-40281.	818. 9217	1. 568E-05	330. 3065	6. 295E+10	
3. 8702	335258.	0. 000					
31. 857	1. 289E-05	-35950.	826. 8399	1. 251E-05	327. 1148	6. 295E+10	
-0. 8461	343695.	0. 000					
32. 294	7. 057E-05	-31639.	812. 4883	9. 699E-06	323. 9387	6. 295E+10	
-4. 6350	343926.	0. 000					
32. 730	0. 000114	-27454.	780. 6538	7. 241E-06	320. 8548	6. 295E+10	
-7. 5230	344156.	0. 000					
33. 166	0. 000146	-23473.	735. 7444	5. 122E-06	317. 9218	6. 295E+10	
-9. 6284	344386.	0. 000					
33. 603	0. 000168	-19755.	681. 5643	3. 324E-06	315. 1823	6. 295E+10	
-11. 0637	344617.	0. 000					
34. 039	0. 000181	-16340.	621. 3471	1. 823E-06	312. 6655	6. 295E+10	
-11. 9341	344847.	0. 000					
34. 476	0. 000187	-13250.	557. 7970	5. 921E-07	310. 3891	6. 295E+10	
-12. 3365	345077.	0. 000					
34. 912	0. 000187	-10498.	493. 1345	-3. 957E-07	308. 3615	6. 295E+10	
-12. 3589	345308.	0. 000					
35. 348	0. 000183	-8084. 7383	429. 1449	-1. 169E-06	306. 5831	6. 295E+10	
-12. 0795	345538.	0. 000					
35. 785	0. 000175	-6001. 9550	367. 2284	-1. 755E-06	305. 0484	6. 295E+10	
-11. 5672	345769.	0. 000					
36. 221	0. 000165	-4236. 0353	308. 4491	-2. 181E-06	303. 7472	6. 295E+10	
-10. 8814	345999.	0. 000					
36. 658	0. 000152	-2768. 2768	253. 5830	-2. 472E-06	302. 6657	6. 295E+10	
-10. 0727	346229.	0. 000					
37. 094	0. 000139	-1576. 5878	203. 1637	-2. 653E-06	301. 7877	6. 295E+10	
-9. 1831	346460.	0. 000					
37. 530	0. 000125	-636. 6427	157. 5253	-2. 745E-06	301. 0951	6. 295E+10	
-8. 2468	346690.	0. 000					
37. 967	0. 000110	77. 1790	116. 8413	-2. 768E-06	300. 6829	6. 295E+10	
-7. 2909	346920.	0. 000					
38. 403	9. 558E-05	591. 0492	81. 1606	-2. 740E-06	301. 0615	6. 295E+10	
-6. 3360	347151.	0. 000					
38. 840	8. 136E-05	931. 1259	50. 4393	-2. 677E-06	301. 3121	6. 295E+10	
-5. 3969	347381.	0. 000					
39. 276	6. 754E-05	1123. 1435	24. 5688	-2. 591E-06	301. 4536	6. 295E+10	
-4. 4834	347612.	0. 000					

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39.712	5.422E-05	1192.1412	3.4000	-2.495E-06	301.5044	6.295E+10	
-3.6012	347842.	0.000					
40.149	4.141E-05	1162.3077	-13.2364	-2.397E-06	301.4824	6.295E+10	
-2.7524	348072.	0.000					
40.585	2.911E-05	1056.9227	-25.5130	-2.305E-06	301.4048	6.295E+10	
-1.9362	348303.	0.000					
41.022	1.727E-05	898.3778	-33.5923	-2.223E-06	301.2880	6.295E+10	
-1.1494	348533.	0.000					
41.458	5.822E-06	708.2572	-37.6174	-2.157E-06	301.1479	6.295E+10	
-0.3878	348763.	0.000					
41.894	-5.317E-06	507.4604	-37.7049	-2.106E-06	300.9999	6.295E+10	
0.3544	348994.	0.000					
42.331	-1.624E-05	316.3515	-33.9420	-2.072E-06	300.8591	6.295E+10	
1.0827	349224.	0.000					
42.767	-2.702E-05	154.9163	-26.3865	-2.052E-06	300.7402	6.295E+10	
1.8028	349455.	0.000					
43.204	-3.773E-05	42.9132	-15.0691	-2.044E-06	300.6576	6.295E+10	
2.5194	349685.	0.000					
43.640	-4.842E-05	0.000	0.000	-2.042E-06	300.6260	6.295E+10	
3.2357	174958.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

Pile-head deflection	=	0.2370720 inches
Computed slope at pile head	=	-0.0021099 radians
Maximum bending moment	=	862815. inch-lbs
Maximum shear force	=	15000. lbs
Depth of maximum bending moment	=	8.7280000 feet below pile head
Depth of maximum shear force	=	0.000000 feet below pile head
Number of iterations	=	15
Number of zero deflection points	=	3

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Load Case No.	Maximum Load Type in Pile No.	Pile-head		Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs
		Condition 1 V(lbs) or y(inches)	Condition 2 Pile-head Rotation in-lb, rad., or in-lb/rad. radians			
1	1	V = 15000.	M = 1.0000	136000.	0.23707202	

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862815.		15000.	-0.00210987			
2	1	V = 11000.	M = 1.0000	276000.	0.14754807	
573159.		11000.	-0.00137302			
3	1	V = 14000.	M = 1.0000	271000.	0.21731606	
802675.		14000.	-0.00195330			
4	1	V = 13000.	M = 1.0000	128000.	0.18885349	
707210.		13000.	-0.00171420			
5	1	V = 15000.	M = 1.0000	136000.	0.23707202	
862815.		15000.	-0.00210987			

The analysis ended normally.

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LPIle Plus for Windows, Version 2013-07.007

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: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: ABUT - Strength.lp7d
Name of output report file: ABUT - Strength.lp7o
Name of plot output file: ABUT - Strength.lp7p
Name of runtime message file: ABUT - Strength.lp7r

Date and Time of Analysis

Date: February 25, 2021 Time: 12:08:41

Problem Title

Project Name: Bel ford ABUT - Servi ce

Job Number: 115360

Client:

Engi neer: JDJ

ABUT - Strength.Ip7o

Description:

Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 100.00 ft

Depth of ground surface below top of pile = 0.00 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	24.0000000
2	100.000000	24.0000000

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Input Structural Properties:

Pile Section No. 1:

Section Type	=	Drilled Shaft (Bored Pile)
Section Length	=	100.0000 ft
Section Diameter	=	24.0000 in

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 3 layers

Layer 1 is stiff clay with water-induced erosion

Distance from top of pile to top of layer	=	0.0000 ft
Distance from top of pile to bottom of layer	=	6.6000 ft
Effective unit weight at top of layer	=	50.0000 pcf
Effective unit weight at bottom of layer	=	50.0000 pcf
Undrained cohesion at top of layer	=	800.0000 psf
Undrained cohesion at bottom of layer	=	800.0000 psf
Epsilon-50 at top of layer	=	0.0200
Epsilon-50 at bottom of layer	=	0.0200
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Internal default values for subgrade k will be computed for this soil layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	6.6000 ft
Distance from top of pile to bottom of layer	=	25.6000 ft
Effective unit weight at top of layer	=	58.0000 pcf
Effective unit weight at bottom of layer	=	58.0000 pcf
Friction angle at top of layer	=	28.0000 deg.
Friction angle at bottom of layer	=	30.0000 deg.
Subgrade k at top of layer	=	25.0000 pci
Subgrade k at bottom of layer	=	25.0000 pci

Layer 3 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	25.6000 ft
Distance from top of pile to bottom of layer	=	100.0000 ft
Effective unit weight at top of layer	=	61.0000 pcf
Effective unit weight at bottom of layer	=	61.0000 pcf
Uniaxial compressive strength at top of layer	=	100.0000 psi

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Uniaxial compressive strength at bottom of layer	=	120.00000	psi
Initial modulus of rock at top of layer	=	130.00000	psi
Initial modulus of rock at bottom of layer	=	145.00000	psi
RQD of rock at top of layer	=	10.00000	%
RQD of rock at bottom of layer	=	20.00000	%
k _{rm} of rock at top of layer	=	0.0000500	
k _{rm} of rock at bottom of layer	=	0.0000500	

(Depth of lowest soil layer extends 0.00 ft below pile tip)

 Summary of Soil Properties

Angle of Layer Friction	Layer Uniaxial qu	Layer Soil Type (p-y Curve Criteria)	RQD % or GSI	Strain Factor Epsilon 50	Layer Depth ft	Effective Rock Unit Wt. pcf	Undrained Rock Cohesion Emass psf	k _{rm}
Num. deg.	psi	psi			ft	psi	psf	k _{rm}
1	Stiff Clay with Free Water			0.02000	0.00 default	50.000	800.000	--
--	--	--	--	--	--	--	--	--
2	Sand (Reese, et al.)			0.02000	6.600 default	50.000	800.000	--
28.000	--	--	--	--	25.000	58.000	--	--
30.000	--	--	--	--	25.600	58.000	--	--
3	Weak Rock			--	25.600	61.000	--	--
5.00E-05	100.000	10.000	--	--	--	130.000	--	--
5.00E-05	120.000	20.000	--	--	100.000	61.000	--	--
						145.000		

 Loading Type

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

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 5

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Load No.	Load Compute Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 23000. lbs	M = 1.00000 in-lbs	185000.
2	No	V = 15000. lbs	M = 1.00000 in-lbs	395000.
3	No	V = 24000. lbs	M = 1.00000 in-lbs	385000.
4	No	V = 19000. lbs	M = 1.00000 in-lbs	171000.
5	No	V = 23000. lbs	M = 1.00000 in-lbs	185000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	100.0000 ft
Shaft Diameter	=	24.0000 in
Concrete Cover Thickness	=	3.5000 in
Number of Reinforcing Bars	=	8 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	452.38934 sq. in.
Total Area of Reinforcing Steel	=	6.3200 sq. in.
Area Ratio of Steel Reinforcement	=	1.40 percent
Edge-to-Edge Bar Spacing	=	5.12293 in
Maximum Concrete Aggregate Size	=	0.75000 in
Ratio of Bar Spacing to Aggregate Size	=	6.83
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	1895.836 kips
Tensile Load for Cracking of Concrete	=	-206.670 kips
Nominal Axial Tensile Capacity	=	-379.200 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

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Bar Number	Bar Di am. inches	Bar Area sq. in.	X inches	Y inches
1	1.00000	0.79000	8.00000	0.00000
2	1.00000	0.79000	5.65685	5.65685
3	1.00000	0.79000	0.00000	8.00000
4	1.00000	0.79000	-5.65685	5.65685
5	1.00000	0.79000	-8.00000	0.00000
6	1.00000	0.79000	-5.65685	-5.65685
7	1.00000	0.79000	0.00000	-8.00000
8	1.00000	0.79000	5.65685	-5.65685

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

Minimum spacing between any two bars not equal to zero = 5.12293 inches between Bars 6 and 7

Spacing to aggregate size ratio = 6.83058

Concrete Properties:

Compressive Strength of Concrete = 4000.00000 psi
 Modulus of Elasticity of Concrete = 3604997. psi
 Modulus of Rupture of Concrete = -474.34164 psi
 Compression Strain at Peak Stress = 0.00189
 Tensile Strain at Fracture of Concrete = -0.0001154
 Maximum Coarse Aggregate Size = 0.75000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 4

Number	Axial Thrust Force kips
1	171.000
2	185.000
3	385.000
4	395.000

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 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, 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 = 171.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	ABUT - Strength.lp7o Bending Run Stiffness Msg kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.00001250	88.7994200	71039536.	79.3026685	0.0000991	0.0000691
0.4087705	2.8703717				
0.00002500	177.6145475	71045819.	45.6684250	0.0001142	0.0000542
0.4683694	3.3022608				
0.00003750	266.4219516	71045854.	34.4645809	0.0001292	0.0000392
0.5275819	3.7349732				
0.00005000	355.2177816	71043556.	28.8683372	0.0001443	0.0000243
0.5864050	4.1685089				
0.00006250	443.9981859	71039710.	25.5151344	0.0001595	0.00009470
0.6448358	4.6028681				
0.00007500	532.7586144	71034482.	23.2834487	0.0001746	-0.00005374
0.7028716	5.0380501				
0.00008750	621.4448521	71022269.	21.6923692	0.0001898	-0.0000202
0.7605005	5.4739887				
0.0000100	709.9281418	70992814.	20.5010538	0.0002050	-0.0000350
0.8176969	5.9105056				
0.0000113	798.1131378	70943390.	19.5757881	0.0002202	-0.0000498
0.8744391	6.3474509				
0.0000125	885.9432311	70875458.	18.8364789	0.0002355	-0.0000645
0.9307129	6.7847237				
0.0000138	973.3830287	70791493.	18.2322341	0.0002507	-0.0000793
0.9865082	7.2222534				
0.0000150	1060.4100627	70694004.	17.7291740	0.0002659	-0.0000941
1.0418177	7.6599907				
0.0000163	1147.0103932	70585255.	17.3038777	0.0002812	-0.0001088
1.0966366	8.0979024				
0.0000175	1147.0103932	65543451.	16.0397350	0.0002807	-0.0001393
1.0943141	8.0792655	C			
0.0000188	1147.0103932	61173888.	15.6011500	0.0002925	-0.0001575
1.1363675	8.4178753	C			
0.0000200	1147.0103932	57350520.	15.2071515	0.0003041	-0.0001759
1.1773851	8.7505479	C			
0.0000213	1147.0103932	53976960.	14.8500913	0.0003156	-0.0001944
1.2173992	9.0774188	C			
0.0000225	1147.0103932	50978240.	14.5257697	0.0003268	-0.0002132
1.2565795	9.3997647	C			
0.0000238	1147.0103932	48295174.	14.2283071	0.0003379	-0.0002321
1.2948791	9.7170965	C			
0.0000250	1160.8900411	46435602.	13.9550874	0.0003489	-0.0002511
1.3324330	10.0304384	C			
0.0000263	1188.3619831	45270933.	13.7030664	0.0003597	-0.0002703
1.3692890	10.3401094	C			
0.0000275	1215.0100345	44182183.	13.4697002	0.0003704	-0.0002896
1.4054888	10.6463860	C			
0.0000288	1240.9352706	43162966.	13.2529232	0.0003810	-0.0003090
1.4410767	10.9495748	C			
0.0000300	1266.2345344	42207818.	13.0510511	0.0003915	-0.0003285
1.4760994	11.2500146	C			
0.0000313	1290.9221832	41309510.	12.8622176	0.0004019	-0.0003481
1.5105555	11.5476348	C			
0.0000325	1315.0196436	40462143.	12.6848520	0.0004123	-0.0003677
1.5444446	11.8423730	C			
0.0000338	1338.7123570	39665551.	12.5186508	0.0004225	-0.0003875
1.5778817	12.1351795	C			
0.0000350	1362.0712662	38916322.	12.3628037	0.0004327	-0.0004073

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1. 6109154	12. 4264459	C	38203744.	12. 2148461	0. 0004428	-0. 0004272
0. 0000363	1384. 8857143					
1. 6433850	12. 7147070	C	37533512.	12. 0759918	0. 0004528	-0. 0004472
0. 0000375	1407. 5067142					
1. 6755402	13. 0021411	C	36897437.	11. 9443882	0. 0004628	-0. 0004672
0. 0000388	1429. 7756763					
1. 7072620	-13. 4126437	C	36295053.	11. 8199134	0. 0004728	-0. 0004872
0. 0000400	1451. 8021370					
1. 7386261	-13. 9897003	C	35723009.	11. 7018389	0. 0004827	-0. 0005073
0. 0000413	1473. 5741327					
1. 7696248	-14. 5681251	C	35179553.	11. 5897548	0. 0004926	-0. 0005274
0. 0000425	1495. 1309938					
1. 8002818	-15. 1477271	C	34661324.	11. 4828963	0. 0005024	-0. 0005476
0. 0000438	1516. 4329237					
1. 8305656	-15. 7288252	C	34169604.	11. 3817020	0. 0005122	-0. 0005678
0. 0000450	1537. 6321948					
1. 8606015	-16. 3102788	C	33696861.	11. 2841584	0. 0005219	-0. 0005881
0. 0000463	1558. 4797994					
1. 8901688	-16. 8941724	C	33248351.	11. 1919166	0. 0005316	-0. 0006084
0. 0000475	1579. 2966813					
1. 9195548	-17. 4778347	C	32817532.	11. 1031177	0. 0005413	-0. 0006287
0. 0000488	1599. 8546967					
1. 9485440	-18. 0633172	C	32012197.	10. 9374254	0. 0005605	-0. 0006695
0. 0000513	1640. 6250800					
2. 0057452	-19. 2359013	C	31268955.	10. 7841626	0. 0005796	-0. 0007104
0. 0000538	1680. 7063555					
2. 0616640	-20. 4131367	C	30585757.	10. 6436639	0. 0005987	-0. 0007513
0. 0000563	1720. 4488399					
2. 1166471	-21. 5917731	C	29951552.	10. 5130085	0. 0006176	-0. 0007924
0. 0000588	1759. 6537011					
2. 1704829	-22. 7740116	C	29363950.	10. 3921884	0. 0006365	-0. 0008335
0. 0000613	1798. 5419485					
2. 2233942	-23. 9577252	C	28815905.	10. 2794014	0. 0006553	-0. 0008747
0. 0000638	1837. 0139605					
2. 2752730	-25. 1441064	C	28305914.	10. 1748617	0. 0006741	-0. 0009159
0. 0000663	1875. 2668106					
2. 3263349	-26. 3309968	C	27826540.	10. 0762017	0. 0006927	-0. 0009573
0. 0000688	1913. 0746488					
2. 3763094	-27. 5213227	C	27379271.	9. 9848816	0. 0007114	-0. 0009986
0. 0000713	1950. 7730936					
2. 4256054	-28. 7107883	C	26957162.	9. 8983422	0. 0007300	-0. 0010400
0. 0000738	1988. 0907101					
2. 4738690	-29. 9032705	C	26559900.	9. 8171622	0. 0007486	-0. 0010814
0. 0000763	2025. 1923590					
2. 5213193	-31. 0964498	C	26186491.	9. 7415138	0. 0007671	-0. 0011229
0. 0000788	2062. 1861678					
2. 5680956	-32. 2887676	C	25831966.	9. 6693486	0. 0007856	-0. 0011644
0. 0000813	2098. 8472051					
2. 6138824	-33. 4838471	C	25496206.	9. 6012145	0. 0008041	-0. 0012059
0. 0000838	2135. 3072594					
2. 6588682	-34. 6796001	C	25178678.	9. 5373767	0. 0008226	-0. 0012474
0. 0000863	2171. 6609649					
2. 7031840	-35. 8744862	C	24877703.	9. 4773928	0. 0008411	-0. 0012889
0. 0000888	2207. 8961062					
2. 7468096	-37. 0687101	C	24589306.	9. 4192729	0. 0008595	-0. 0013305
0. 0000913	2243. 7742087					
2. 7893858	-38. 2666989	C	24315171.	9. 3645753	0. 0008779	-0. 0013721
0. 0000938	2279. 5473189					
2. 8312956	-39. 4638106	C	24054178.	9. 3130356	0. 0008964	-0. 0014136
0. 0000963	2315. 2146250					
2. 8725357	-40. 6600390	C	23805320.	9. 2644162	0. 0009149	-0. 0014551
0. 0000988	2350. 7753060					
2. 9131029	-41. 8553777	C				

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0. 0001013	2386. 1306341	23566722.	9. 2177768	0. 0009333	-0. 0014967
2. 9528343	-43. 0519527 C				
0. 0001038	2421. 2722763	23337564.	9. 1729018	0. 0009517	-0. 0015383
2. 9917192	-44. 2499815 C				
0. 0001063	2456. 3084237	23118197.	9. 1304326	0. 0009701	-0. 0015799
3. 0299337	-45. 4471042 C				
0. 0001088	2491. 2382519	22907938.	9. 0902056	0. 0009886	-0. 0016214
3. 0674744	-46. 6433137 C				
0. 0001113	2526. 0609221	22706166.	9. 0520718	0. 0010070	-0. 0016630
3. 1043380	-47. 8386031 C				
0. 0001138	2560. 7755845	22512313.	9. 0158953	0. 0010256	-0. 0017044
3. 1405211	-49. 0329650 C				
0. 0001163	2595. 2986280	22325149.	8. 9809001	0. 0010440	-0. 0017460
3. 1758743	-50. 2285902 C				
0. 0001188	2629. 6450777	22144380.	8. 9471166	0. 0010625	-0. 0017875
3. 2104265	-51. 4251169 C				
0. 0001213	2663. 8843099	21970180.	8. 9149971	0. 0010809	-0. 0018291
3. 2442993	-52. 6206912 C				
0. 0001238	2698. 0154582	21802145.	8. 8844429	0. 0010994	-0. 0018706
3. 2774892	-53. 8153052 C				
0. 0001263	2732. 0376399	21639902.	8. 8553634	0. 0011180	-0. 0019120
3. 3099927	-55. 0089506 C				
0. 0001288	2765. 9499600	21483106.	8. 8276747	0. 0011366	-0. 0019534
3. 3418061	-56. 2016191 C				
0. 0001313	2799. 7515103	21331440.	8. 8012998	0. 0011552	-0. 0019948
3. 3729257	-57. 3933024 C				
0. 0001338	2833. 4413695	21184608.	8. 7761670	0. 0011738	-0. 0020362
3. 4033479	-58. 5839919 C				
0. 0001363	2866. 9853794	21042095.	8. 7519198	0. 0011924	-0. 0020776
3. 4330056	-59. 7748263 C				
0. 0001388	2900. 3505383	20903427.	8. 7282216	0. 0012110	-0. 0021190
3. 4618373	-60. 0000000 CY				
0. 0001413	2933. 6042374	20768880.	8. 7056140	0. 0012297	-0. 0021603
3. 4899705	-60. 0000000 CY				
0. 0001438	2966. 7455155	20638230.	8. 6840424	0. 0012483	-0. 0022017
3. 5174013	-60. 0000000 CY				
0. 0001463	2999. 7733954	20511271.	8. 6634561	0. 0012670	-0. 0022430
3. 5441259	-60. 0000000 CY				
0. 0001488	3032. 6868843	20387811.	8. 6438077	0. 0012858	-0. 0022842
3. 5701401	-60. 0000000 CY				
0. 0001588	3163. 1765062	19925521.	8. 5737521	0. 0013611	-0. 0024489
3. 6670115	-60. 0000000 CY				
0. 0001688	3291. 7361124	19506584.	8. 5154672	0. 0014370	-0. 0026130
3. 7521498	-60. 0000000 CY				
0. 0001788	3413. 6018906	19097074.	8. 4619747	0. 0015126	-0. 0027774
3. 8244664	-60. 0000000 CY				
0. 0001888	3508. 2026479	18586504.	8. 3984031	0. 0015852	-0. 0029448
3. 8821859	-60. 0000000 CY				
0. 0001988	3594. 9364239	18087730.	8. 3395770	0. 0016575	-0. 0031125
3. 9282500	-60. 0000000 CY				
0. 0002088	3680. 0741925	17629098.	8. 2893241	0. 0017304	-0. 0032796
3. 9632001	-60. 0000000 CY				
0. 0002188	3753. 4055592	17158425.	8. 2364073	0. 0018017	-0. 0034483
3. 9861966	-60. 0000000 CY				
0. 0002288	3795. 6572850	16593037.	8. 1649665	0. 0018677	-0. 0036223
3. 9976227	-60. 0000000 CY				
0. 0002388	3823. 4474986	16014440.	8. 0902120	0. 0019315	-0. 0037985
3. 9981393	-60. 0000000 CY				
0. 0002488	3849. 6948833	15476160.	8. 0223402	0. 0019956	-0. 0039744
3. 9982045	-60. 0000000 CY				
0. 0002588	3874. 5181109	14973983.	7. 9592743	0. 0020595	-0. 0041505
3. 9978078	-60. 0000000 CY				
0. 0002688	3898. 4238879	14505763.	7. 9029119	0. 0021239	-0. 0043261

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3. 9968880	60. 0000000	CY				
0. 0002788	3921. 4608643		14068021.	7. 8524835	0. 0021889	-0. 0045011
3. 9995113	60. 0000000	CY				
0. 0002888	3943. 6291263		13657590.	7. 8074031	0. 0022544	-0. 0046756
3. 9998090	60. 0000000	CY				
0. 0002988	3964. 7288782		13271059.	7. 7649598	0. 0023198	-0. 0048502
3. 9988097	60. 0000000	CY				
0. 0003088	3985. 0902548		12907175.	7. 7264007	0. 0023855	-0. 0050245
3. 9964119	60. 0000000	CY				
0. 0003188	4004. 8036730		12564090.	7. 6917484	0. 0024517	-0. 0051983
3. 9999230	60. 0000000	CY				
0. 0003288	4023. 8542101		12239861.	7. 6607018	0. 0025185	-0. 0053715
3. 9983366	60. 0000000	CY				
0. 0003388	4042. 3834130		11933235.	7. 6327164	0. 0025856	-0. 0055444
3. 9974097	60. 0000000	CY				
0. 0003488	4060. 3178432		11642488.	7. 6076748	0. 0026532	-0. 0057168
3. 9991032	60. 0000000	CY				
0. 0003588	4077. 7745071		11366619.	7. 5851499	0. 0027212	-0. 0058888
3. 9946853	60. 0000000	CY				
0. 0003688	4094. 7347283		11104365.	7. 5649817	0. 0027896	-0. 0060604
3. 9992439	60. 0000000	CY				
0. 0003788	4111. 1768441		10854592.	7. 5459305	0. 0028580	-0. 0062320
3. 9945760	60. 0000000	CY				
0. 0003888	4127. 1599182		10616489.	7. 5285735	0. 0029267	-0. 0064033
3. 9988134	60. 0000000	CY				
0. 0003988	4142. 7986999		10389464.	7. 5129775	0. 0029958	-0. 0065742
3. 9971849	60. 0000000	CY				
0. 0004088	4157. 9834788		10172437.	7. 4991565	0. 0030653	-0. 0067447
3. 9974911	60. 0000000	CYT				
0. 0004188	4172. 8439384		9965000.	7. 4866211	0. 0031350	-0. 0069150
3. 9999368	60. 0000000	CYT				
0. 0004288	4186. 0036571		9763274.	7. 4736998	0. 0032043	-0. 0070857
3. 9943213	60. 0000000	CYT				
0. 0004388	4197. 4868782		9566922.	7. 4598692	0. 0032730	-0. 0072570
3. 9986383	60. 0000000	CYT				
0. 0004488	4206. 7195124		9374305.	7. 4439984	0. 0033405	-0. 0074295
3. 9999143	60. 0000000	CYT				
0. 0004588	4213. 8826837		9185575.	7. 4268920	0. 0034071	-0. 0076029
3. 9935689	60. 0000000	CYT				
0. 0004688	4219. 0263216		9000589.	7. 4078412	0. 0034724	-0. 0077776
3. 9977138	60. 0000000	CYT				
0. 0004788	4222. 1661101		8819146.	7. 3869075	0. 0035365	-0. 0079535
3. 9997180	60. 0000000	CYT				
0. 0004888	4224. 2132077		8642891.	7. 3657037	0. 0036000	-0. 0081300
3. 9959659	60. 0000000	CYT				
0. 0004988	4224. 5215052		8470219.	7. 3431209	0. 0036624	-0. 0083076
3. 9929412	60. 0000000	CYT				
0. 0005088	4224. 7779559		8304232.	7. 3216516	0. 0037249	-0. 0084851
3. 9967302	60. 0000000	CYT				
0. 0005188	4224. 7779559		8144150.	7. 2990481	0. 0037864	-0. 0086636
3. 9990123	60. 0000000	CYT				
0. 0005288	4224. 7779559		7990124.	7. 2773448	0. 0038479	-0. 0088421
3. 9999681	60. 0000000	CYT				

Axial Thrust Force = 185.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
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0. 000001250	88. 4792791	70783423.	84. 9386642	0. 0001062	0. 0000762
0. 4370259	3. 0746766				
0. 000002500	176. 9758986	70790359.	48. 4864838	0. 0001212	0. 0000612
0. 4963895	3. 5065701				
0. 000003750	265. 4647672	70790605.	36. 3433543	0. 0001363	0. 0000463
0. 5553666	3. 9392898				
0. 000005000	353. 9420205	70788404.	30. 2774882	0. 0001514	0. 0000314
0. 6139543	4. 3728358				
0. 000006250	442. 4037930	70784607.	26. 6425281	0. 0001665	0. 0000165
0. 6721496	4. 8072082				
0. 000007500	530. 8462183	70779496.	24. 2230218	0. 0001817	0. 000001673
0. 7299499	5. 2424073				
0. 000008750	619. 2533598	70771813.	22. 4979999	0. 0001969	-0. 0000131
0. 7873500	5. 6784175				
0. 0000100	707. 5266448	70752664.	21. 2065867	0. 0002121	-0. 0000279
0. 8443306	6. 1151102				
0. 0000113	795. 5534702	70715864.	20. 2037411	0. 0002273	-0. 0000427
0. 9008680	6. 5523206				
0. 0000125	883. 2603965	70660832.	19. 4025586	0. 0002425	-0. 0000575
0. 9569449	6. 9899275				
0. 0000138	970. 6021765	70589249.	18. 7478307	0. 0002578	-0. 0000722
1. 0125494	7. 4278475				
0. 0000150	1057. 5489524	70503263.	18. 2028041	0. 0002730	-0. 0000870
1. 0676728	7. 8660198				
0. 0000163	1144. 0812077	70404997.	17. 7420709	0. 0002883	-0. 0001017
1. 1223088	8. 3044010				
0. 0000175	1144. 0812077	65376069.	16. 5861442	0. 0002903	-0. 0001297
1. 1287762	8. 3565679	C			
0. 0000188	1144. 0812077	61017664.	16. 1268283	0. 0003024	-0. 0001476
1. 1716284	8. 7037129	C			
0. 0000200	1144. 0812077	57204060.	15. 7142205	0. 0003143	-0. 0001657
1. 2134004	9. 0446479	C			
0. 0000213	1144. 0812077	53839116.	15. 3400204	0. 0003260	-0. 0001840
1. 2541049	9. 3793376	C			
0. 0000225	1144. 4188153	50863058.	15. 0002968	0. 0003375	-0. 0002025
1. 2939526	9. 7093937	C			
0. 0000238	1175. 5523292	49496940.	14. 6885418	0. 0003489	-0. 0002211
1. 3328682	10. 0340831	C			
0. 0000250	1205. 5133764	48220535.	14. 4023027	0. 0003601	-0. 0002399
1. 3710156	10. 3546695	C			
0. 0000263	1234. 4154331	47025350.	14. 1382271	0. 0003711	-0. 0002589
1. 4084313	10. 6713754	C			
0. 0000275	1262. 3680678	45904293.	13. 8936001	0. 0003821	-0. 0002779
1. 4451540	10. 9844461	C			
0. 0000288	1289. 4774222	44851389.	13. 6662117	0. 0003929	-0. 0002971
1. 4812245	11. 2941540	C			
0. 0000300	1315. 8458813	43861529.	13. 4542542	0. 0004036	-0. 0003164
1. 5166858	11. 6008013	C			
0. 0000313	1341. 5717244	42930295.	13. 2562442	0. 0004143	-0. 0003357
1. 5515837	11. 9047214	C			
0. 0000325	1366. 7487748	42053808.	13. 0709626	0. 0004248	-0. 0003552
1. 5859667	12. 2062823	C			
0. 0000338	1391. 2544039	41222353.	12. 8961616	0. 0004352	-0. 0003748
1. 6197483	12. 5046683	C			
0. 0000350	1415. 3089262	40437398.	12. 7317682	0. 0004456	-0. 0003944
1. 6530556	12. 8009448	C			
0. 0000363	1439. 0286932	39697343.	12. 5773067	0. 0004559	-0. 0004141
1. 6859638	13. 0957437	C			
0. 0000375	1462. 2155183	38992414.	12. 4305951	0. 0004661	-0. 0004339
1. 7183337	13. 3877723	C			
0. 0000388	1485. 1135686	38325511.	12. 2921214	0. 0004763	-0. 0004537

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1. 7503243	13. 6784215	C	37692913.	12. 1610691	0. 0004864	-0. 0004736
0. 0000400	1507. 7165120					
1. 7819334	13. 9676403	C	37090270.	12. 0363772	0. 0004965	-0. 0004935
0. 0000413	1529. 9736240					
1. 8131140	14. 2549663	C	36518718.	11. 9183766	0. 0005065	-0. 0005135
0. 0000425	1552. 0455199					
1. 8439889	-14. 7427007	C	35972624.	11. 8056819	0. 0005165	-0. 0005335
0. 0000438	1573. 8023155					
1. 8744498	-15. 3192911	C	35452931.	11. 6986223	0. 0005264	-0. 0005536
0. 0000450	1595. 3818840					
1. 9046076	-15. 8966978	C	34956921.	11. 5965276	0. 0005363	-0. 0005737
0. 0000463	1616. 7575982					
1. 9344341	-16. 4752072	C	34481511.	11. 4986681	0. 0005462	-0. 0005938
0. 0000475	1637. 8717756					
1. 9638832	-17. 0552846	C	34029819.	11. 4059972	0. 0005560	-0. 0006140
0. 0000488	1658. 9536628					
1. 9931457	-17. 6351213	C	33176143.	11. 2304433	0. 0005756	-0. 0006544
0. 0000513	1700. 2773304					
2. 0504628	-18. 8004038	C	32391677.	11. 0693466	0. 0005950	-0. 0006950
0. 0000538	1741. 0526334					
2. 1066557	-19. 9686059	C	31669393.	10. 9214421	0. 0006143	-0. 0007357
0. 0000563	1781. 4033537					
2. 1618445	-21. 1386474	C	30995926.	10. 7830334	0. 0006335	-0. 0007765
0. 0000588	1821. 0106290					
2. 2157025	-22. 3139570	C	30373610.	10. 6557385	0. 0006527	-0. 0008173
0. 0000613	1860. 3836355					
2. 2687281	-23. 4895943	C	29791168.	10. 5362638	0. 0006717	-0. 0008583
0. 0000638	1899. 1869899					
2. 3205749	-24. 6692322	C	29249952.	10. 4258773	0. 0006907	-0. 0008993
0. 0000663	1937. 8093188					
2. 3716462	-25. 8487330	C	28740170.	10. 3213997	0. 0007096	-0. 0009404
0. 0000688	1975. 8867058					
2. 4215408	-27. 0324592	C	28264553.	10. 2246836	0. 0007285	-0. 0009815
0. 0000713	2013. 8493991					
2. 4707394	-28. 2152973	C	27815373.	10. 1330041	0. 0007473	-0. 0010227
0. 0000738	2051. 3837765					
2. 5188697	-29. 4013874	C	27392670.	10. 0470508	0. 0007661	-0. 0010639
0. 0000763	2088. 6910942					
2. 5661751	-30. 5881087	C	26995369.	9. 9669434	0. 0007849	-0. 0011051
0. 0000788	2125. 8853229					
2. 6127892	-31. 7739427	C	26617037.	9. 8900547	0. 0008036	-0. 0011464
0. 0000813	2162. 6342515					
2. 6582916	-32. 9638085	C	26259578.	9. 8179205	0. 0008223	-0. 0011877
0. 0000838	2199. 2396468					
2. 7030683	-34. 1532754	C	25921548.	9. 7503241	0. 0008410	-0. 0012290
0. 0000863	2235. 7335264					
2. 7471581	-35. 3418517	C	25599479.	9. 6858296	0. 0008596	-0. 0012704
0. 0000888	2271. 9537375					
2. 7903393	-36. 5322459	C	25292282.	9. 6242968	0. 0008782	-0. 0013118
0. 0000913	2307. 9207144					
2. 8326435	-37. 7241543	C	25000295.	9. 5663763	0. 0008968	-0. 0013532
0. 0000938	2343. 7776631					
2. 8742646	-38. 9151641	C	24722324.	9. 5117889	0. 0009155	-0. 0013945
0. 0000963	2379. 5237184					
2. 9151990	-40. 1052690	C	24456324.	9. 4596316	0. 0009341	-0. 0014359
0. 0000988	2415. 0620387					
2. 9553039	-41. 2963296	C	24200890.	9. 4093651	0. 0009527	-0. 0014773
0. 0001013	2450. 3401169					
2. 9945060	-42. 4894013	C	23956709.	9. 3618263	0. 0009713	-0. 0015187
0. 0001038	2485. 5085977					
3. 0330245	-43. 6815548	C	23722980.	9. 3168248	0. 0009899	-0. 0015601
0. 0001063	2520. 5666108					
3. 0708559	-44. 8727832	C				

		ABUT - Strength.lp7o			
0. 0001088	2555. 5132725	23498973.	9. 2741879	0. 0010086	-0. 0016014
3. 1079968	-46. 0630795 C				
0. 0001113	2590. 3176529	23283754.	9. 2335433	0. 0010272	-0. 0016428
3. 1443967	-47. 2531305 C				
0. 0001138	2624. 8508158	23075612.	9. 1938496	0. 0010458	-0. 0016842
3. 1798559	-48. 4459382 C				
0. 0001163	2659. 2736536	22875472.	9. 1561458	0. 0010644	-0. 0017256
3. 2146264	-49. 6377930 C				
0. 0001188	2693. 5852695	22682823.	9. 1203084	0. 0010830	-0. 0017670
3. 2487047	-50. 8286874 C				
0. 0001213	2727. 7847539	22497194.	9. 0862243	0. 0011017	-0. 0018083
3. 2820871	-52. 0186135 C				
0. 0001238	2761. 8711849	22318151.	9. 0537893	0. 0011204	-0. 0018496
3. 3147701	-53. 2075631 C				
0. 0001263	2795. 8436276	22145296.	9. 0229079	0. 0011391	-0. 0018909
3. 3467498	-54. 3955282 C				
0. 0001288	2829. 6706230	21978024.	8. 9932558	0. 0011579	-0. 0019321
3. 3779719	-55. 5833807 C				
0. 0001313	2863. 2790238	21815459.	8. 9642028	0. 0011766	-0. 0019734
3. 4083159	-56. 7732527 C				
0. 0001338	2896. 7740227	21658124.	8. 9364977	0. 0011953	-0. 0020147
3. 4379568	-57. 9621091 C				
0. 0001363	2930. 1546545	21505722.	8. 9100687	0. 0012140	-0. 0020560
3. 4668907	-59. 1499407 C				
0. 0001388	2963. 4199390	21357982.	8. 8848491	0. 0012328	-0. 0020972
3. 4951139	-60. 0000000 CY				
0. 0001413	2996. 5688812	21214647.	8. 8607769	0. 0012516	-0. 0021384
3. 5226222	-60. 0000000 CY				
0. 0001438	3029. 6004706	21075482.	8. 8377947	0. 0012704	-0. 0021796
3. 5494117	-60. 0000000 CY				
0. 0001463	3062. 5136810	20940264.	8. 8158488	0. 0012893	-0. 0022207
3. 5754783	-60. 0000000 CY				
0. 0001488	3095. 3074703	20808790.	8. 7948893	0. 0013082	-0. 0022618
3. 6008178	-60. 0000000 CY				
0. 0001588	3225. 0925114	20315543.	8. 7184736	0. 0013841	-0. 0024259
3. 6945318	-60. 0000000 CY				
0. 0001688	3352. 7784587	19868317.	8. 6536758	0. 0014603	-0. 0025897
3. 7761606	-60. 0000000 CY				
0. 0001788	3476. 0872528	19446642.	8. 5980409	0. 0015369	-0. 0027531
3. 8454102	-60. 0000000 CY				
0. 0001888	3575. 0817702	18940831.	8. 5353888	0. 0016111	-0. 0029189
3. 9002542	-60. 0000000 CY				
0. 0001988	3661. 0485305	18420370.	8. 4721088	0. 0016838	-0. 0030862
3. 9424321	-60. 0000000 CY				
0. 0002088	3745. 2957040	17941536.	8. 4173162	0. 0017571	-0. 0032529
3. 9732665	-60. 0000000 CY				
0. 0002188	3823. 0346120	17476730.	8. 3665105	0. 0018302	-0. 0034198
3. 9923767	-60. 0000000 CY				
0. 0002288	3873. 2666696	16932313.	8. 3013662	0. 0018989	-0. 0035911
3. 9997543	-60. 0000000 CY				
0. 0002388	3901. 6171836	16341852.	8. 2244941	0. 0019636	-0. 0037664
3. 9999164	-60. 0000000 CY				
0. 0002488	3927. 2589337	15787976.	8. 1537287	0. 0020282	-0. 0039418
3. 9999404	-60. 0000000 CY				
0. 0002588	3951. 8910596	15273009.	8. 0905960	0. 0020934	-0. 0041166
3. 9998835	-60. 0000000 CY				
0. 0002688	3975. 4990438	14792555.	8. 0338755	0. 0021591	-0. 0042909
3. 9996590	60. 0000000 CY				
0. 0002788	3997. 7681962	14341769.	7. 9804498	0. 0022246	-0. 0044654
3. 9990103	60. 0000000 CY				
0. 0002888	4019. 2336929	13919424.	7. 9325236	0. 0022905	-0. 0046395
3. 9975999	60. 0000000 CY				
0. 0002988	4039. 9602912	13522880.	7. 8894620	0. 0023570	-0. 0048130

ABUT - Strength.l p7o

3. 9985403	60. 0000000	CY				
0. 0003088	4059. 9271358		13149562.	7. 8508539	0. 0024240	-0. 0049860
3. 9996329	60. 0000000	CY				
0. 0003188	4079. 2289235		12797581.	7. 8161523	0. 0024914	-0. 0051586
3. 9977111	60. 0000000	CY				
0. 0003288	4097. 8365669		12464902.	7. 7838455	0. 0025589	-0. 0053311
3. 9993672	60. 0000000	CY				
0. 0003388	4115. 6774278		12149601.	7. 7539184	0. 0026266	-0. 0055034
3. 9988502	60. 0000000	CY				
0. 0003488	4133. 0518195		11851045.	7. 7268577	0. 0026947	-0. 0056753
3. 9958236	60. 0000000	CY				
0. 0003588	4149. 9034927		11567675.	7. 7025398	0. 0027633	-0. 0058467
3. 9991783	60. 0000000	CY				
0. 0003688	4166. 3158748		11298484.	7. 6806118	0. 0028322	-0. 0060178
3. 9947627	60. 0000000	CY				
0. 0003788	4182. 2730352		11042305.	7. 6609253	0. 0029016	-0. 0061884
3. 9989851	60. 0000000	CY				
0. 0003888	4197. 8526764		10798335.	7. 6431832	0. 0029713	-0. 0063587
3. 9962168	60. 0000000	CY				
0. 0003988	4212. 9978906		10565512.	7. 6273561	0. 0030414	-0. 0065286
3. 9980998	60. 0000000	CYT				
0. 0004088	4227. 8620233		10343393.	7. 6130311	0. 0031118	-0. 0066982
3. 9999995	60. 0000000	CYT				
0. 0004188	4242. 2325388		10130705.	7. 6003942	0. 0031827	-0. 0068673
3. 9959047	60. 0000000	CYT				
0. 0004288	4256. 3128736		9927260.	7. 5889283	0. 0032538	-0. 0070362
3. 9994722	60. 0000000	CYT				
0. 0004388	4268. 6281699		9729067.	7. 5766530	0. 0033243	-0. 0072057
3. 9948470	60. 0000000	CYT				
0. 0004488	4279. 4929393		9536475.	7. 5639741	0. 0033943	-0. 0073757
3. 9967717	60. 0000000	CYT				
0. 0004588	4288. 1976163		9347570.	7. 5484989	0. 0034629	-0. 0075471
3. 9995572	60. 0000000	CYT				
0. 0004688	4294. 9148840		9162485.	7. 5310899	0. 0035302	-0. 0077198
3. 9960253	60. 0000000	CYT				
0. 0004788	4299. 9413932		8981601.	7. 5124466	0. 0035966	-0. 0078934
3. 9943906	60. 0000000	CYT				
0. 0004888	4302. 6913671		8803461.	7. 4912236	0. 0036613	-0. 0080687
3. 9979131	60. 0000000	CYT				
0. 0004988	4304. 8684289		8631315.	7. 4702687	0. 0037258	-0. 0082442
3. 9997185	60. 0000000	CYT				
0. 0005088	4304. 9246549		8461768.	7. 4470557	0. 0037887	-0. 0084213
3. 9969059	60. 0000000	CYT				
0. 0005188	4304. 9246549		8298650.	7. 4488805	0. 0038641	-0. 0085859
3. 9934355	60. 0000000	CYT				

Axial Thrust Force = 385.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0. 000001250	83. 7744351	67019548.	167. 7640711	0. 0002097	0. 0001797
0. 8393909	6. 0770976				
0. 000002500	167. 5903163	67036127.	89. 9001353	0. 0002248	0. 0001648
0. 8952966	6. 5090598				
0. 000003750	251. 3980185	67039472.	63. 9535071	0. 0002398	0. 0001498
0. 9508147	6. 9418939				

		ABUT - Strength.lp7o			
0. 000005000	335. 1934635	67038693.	50. 9862065	0. 0002549	0. 0001349
1. 0059423	7. 3756000				
0. 000006250	418. 9725722	67035612.	43. 2106378	0. 0002701	0. 0001201
1. 0606763	7. 8101781				
0. 000007500	502. 7312644	67030835.	38. 0309358	0. 0002852	0. 0001052
1. 1150137	8. 2456286				
0. 000008750	586. 4654578	67024624.	34. 3345873	0. 0003004	0. 0000904
1. 1689516	8. 6819515				
0. 0000100	670. 1710686	67017107.	31. 5653355	0. 0003157	0. 0000757
1. 2224868	9. 1191473				
0. 0000113	753. 8440104	67008356.	29. 4141493	0. 0003309	0. 0000609
1. 2756164	9. 5572162				
0. 0000125	837. 4801943	66998416.	27. 6956099	0. 0003462	0. 0000462
1. 3283373	9. 9961586				
0. 0000138	921. 0755283	66987311.	26. 2917237	0. 0003615	0. 0000315
1. 3806466	10. 4359749				
0. 0000150	1004. 6259174	66975061.	25. 1238285	0. 0003769	0. 0000169
1. 4325411	10. 8766654				
0. 0000163	1088. 1272626	66961678.	24. 1374658	0. 0003922	0. 000002234
1. 4840179	11. 3182308				
0. 0000175	1171. 5719147	66946967.	23. 2937275	0. 0004076	-0. 0000124
1. 5350733	11. 7606667				
0. 0000188	1254. 9197745	66929055.	22. 5639973	0. 0004231	-0. 0000269
1. 5856987	12. 2039236				
0. 0000200	1338. 1097207	66905486.	21. 9267548	0. 0004385	-0. 0000415
1. 6358816	12. 6479178				
0. 0000213	1421. 0855932	66874616.	21. 3655451	0. 0004540	-0. 0000560
1. 6856105	13. 0925672				
0. 0000225	1503. 8007023	66835587.	20. 8675846	0. 0004695	-0. 0000705
1. 7348748	13. 5377990				
0. 0000238	1586. 2172337	66788094.	20. 4227964	0. 0004850	-0. 0000850
1. 7836658	13. 9835511				
0. 0000250	1668. 3049842	66732199.	20. 0231324	0. 0005006	-0. 0000994
1. 8319759	14. 4297710				
0. 0000263	1750. 0405093	66668210.	19. 6620905	0. 0005161	-0. 0001139
1. 8797990	14. 8764165				
0. 0000275	1750. 0405093	63637837.	19. 0296694	0. 0005233	-0. 0001367
1. 9014690	15. 0804611	C			
0. 0000288	1750. 0405093	60870974.	18. 6755259	0. 0005369	-0. 0001531
1. 9425999	15. 4706698	C			
0. 0000300	1780. 9979516	59366598.	18. 3458383	0. 0005504	-0. 0001696
1. 9828669	15. 8564793	C			
0. 0000313	1826. 1394541	58436463.	18. 0371728	0. 0005637	-0. 0001863
2. 0222372	16. 2374379	C			
0. 0000325	1869. 5564909	57524815.	17. 7483092	0. 0005768	-0. 0002032
2. 0608411	16. 6146815	C			
0. 0000338	1911. 4239947	56634785.	17. 4773340	0. 0005899	-0. 0002201
2. 0987184	16. 9884907	C			
0. 0000350	1951. 8465287	55767044.	17. 2224449	0. 0006028	-0. 0002372
2. 1358907	17. 3589816	C			
0. 0000363	1990. 8722963	54920615.	16. 9819491	0. 0006156	-0. 0002544
2. 1723651	17. 7261240	C			
0. 0000375	2028. 5743983	54095317.	16. 7544581	0. 0006283	-0. 0002717
2. 2081568	18. 0899732	C			
0. 0000388	2065. 0620914	53291925.	16. 5388781	0. 0006409	-0. 0002891
2. 2432933	18. 4507143	C			
0. 0000400	2100. 4502125	52511255.	16. 3342916	0. 0006534	-0. 0003066
2. 2778058	18. 8085784	C			
0. 0000413	2134. 8516692	51753980.	16. 1399148	0. 0006658	-0. 0003242
2. 3117271	19. 1638232	C			
0. 0000425	2168. 3769891	51020635.	15. 9550786	0. 0006781	-0. 0003419
2. 3450915	19. 5167345	C			
0. 0000438	2200. 7760794	50303453.	15. 7781561	0. 0006903	-0. 0003597

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2. 3778100	19. 8662856	C	49609393.	15. 6094262	0. 0007024	-0. 0003776
0. 0000450	2232. 4226767					
2. 4100049	20. 2137013	C	48939474.	15. 4485658	0. 0007145	-0. 0003955
0. 0000463	2263. 4506654					
2. 4417239	20. 5594390	C	48286574.	15. 2941949	0. 0007265	-0. 0004135
0. 0000475	2293. 6122550					
2. 4728773	20. 9024536	C	47653418.	15. 1462763	0. 0007384	-0. 0004316
0. 0000488	2323. 1041377					
2. 5035310	21. 2433982	C	46445470.	14. 8684562	0. 0007620	-0. 0004680
0. 0000513	2380. 3303146					
2. 5634333	21. 9198932	C	45309019.	14. 6119774	0. 0007854	-0. 0005046
0. 0000538	2435. 3597898					
2. 6215096	22. 5893699	C	44238522.	14. 3743059	0. 0008086	-0. 0005414
0. 0000563	2488. 4168833					
2. 6778403	23. 2523365	C	43229255.	14. 1533784	0. 0008315	-0. 0005785
0. 0000588	2539. 7187560					
2. 7325074	23. 9093685	C	42277136.	13. 9475093	0. 0008543	-0. 0006157
0. 0000613	2589. 4745617					
2. 7855944	24. 5611136	C	41378582.	13. 7553199	0. 0008769	-0. 0006531
0. 0000638	2637. 8846035					
2. 8371861	25. 2082979	C	40528674.	13. 5753290	0. 0008994	-0. 0006906
0. 0000663	2685. 0246443					
2. 8873162	25. 8510511	C	39720359.	13. 4056498	0. 0009216	-0. 0007284
0. 0000688	2730. 7747105					
2. 9359240	26. 4882641	C	38956325.	13. 2465227	0. 0009438	-0. 0007662
0. 0000713	2775. 6381566					
2. 9832398	27. 1226777	C	38232540.	13. 0969370	0. 0009659	-0. 0008041
0. 0000738	2819. 6498365					
3. 0292874	27. 7544243	C	37540581.	12. 9547829	0. 0009878	-0. 0008422
0. 0000763	2862. 4692888					
3. 0738981	28. 3809136	C	36886448.	12. 8214067	0. 0010097	-0. 0008803
0. 0000788	2904. 8077823					
3. 1174207	29. 0068377	C	36259171.	12. 6940966	0. 0010314	-0. 0009186
0. 0000813	2946. 0576344					
3. 1595575	29. 6277154	C	35664509.	12. 5742904	0. 0010531	-0. 0009569
0. 0000838	2986. 9026326					
3. 2006484	30. 2483581	C	35093424.	12. 4596613	0. 0010746	-0. 0009954
0. 0000863	3026. 8078293					
3. 2404275	30. 8645781	C	34551589.	12. 3518052	0. 0010962	-0. 0010338
0. 0000888	3066. 4534879					
3. 2792418	31. 4816088	C	34029052.	12. 2479756	0. 0011176	-0. 0010724
0. 0000913	3105. 1509729					
3. 3167370	32. 0936556	C	33532314.	12. 1501689	0. 0011391	-0. 0011109
0. 0000938	3143. 6544093					
3. 3533083	32. 7070219	C	33054309.	12. 0563324	0. 0011604	-0. 0011496
0. 0000963	3181. 4772017					
3. 3886965	33. 3172881	C	32596245.	11. 9669762	0. 0011817	-0. 0011883
0. 0000988	3218. 8792030					
3. 4230460	-34. 1159216	C	32158894.	11. 8824819	0. 0012031	-0. 0012269
0. 0001013	3256. 0880613					
3. 4564734	-35. 2277121	C	31734813.	11. 8004528	0. 0012243	-0. 0012657
0. 0001038	3292. 4868903					
3. 4886505	-36. 3443377	C	31328721.	11. 7226479	0. 0012455	-0. 0013045
0. 0001063	3328. 6765642					
3. 5199028	-37. 4598407	C	30939532.	11. 6488400	0. 0012668	-0. 0013432
0. 0001088	3364. 6741484					
3. 5502346	-38. 5740204	C	30561578.	11. 5770417	0. 0012879	-0. 0013821
0. 0001113	3399. 9755762					
3. 5793767	-39. 6924193	C	30197954.	11. 5085635	0. 0013091	-0. 0014209
0. 0001138	3435. 0172905					
3. 6075676	-40. 8102758	C	29848329.	11. 4434257	0. 0013303	-0. 0014597
0. 0001163	3469. 8682411					
3. 6348395	-41. 9268007	C				

		ABUT - Strength.lp7o			
0.0001188	3504.3659709	29510450.	11.3808482	0.0013515	-0.0014985
3.6611027	-43.0439537	C			
0.0001213	3538.3081359	29181923.	11.3199542	0.0013725	-0.0015375
3.6862567	-44.1642609	C			
0.0001238	3572.0612516	28865141.	11.2618952	0.0013937	-0.0015763
3.7104938	-45.2832232	C			
0.0001263	3605.6232684	28559392.	11.2065061	0.0014148	-0.0016152
3.7338079	-46.4008292	C			
0.0001288	3638.9371172	28263589.	11.1534298	0.0014360	-0.0016540
3.7561652	-47.5178312	C			
0.0001313	3671.6675212	27974610.	11.1013027	0.0014570	-0.0016930
3.7774011	-48.6389160	C			
0.0001338	3704.2083804	27695016.	11.0514793	0.0014781	-0.0017319
3.7977150	-49.7586242	C			
0.0001363	3736.5576348	27424276.	11.0038359	0.0014993	-0.0017707
3.8171006	-50.8769430	C			
0.0001388	3768.7131926	27161897.	10.9582579	0.0015205	-0.0018095
3.8355515	-51.9938596	C			
0.0001413	3800.6268985	26907093.	10.9144581	0.0015417	-0.0018483
3.8530406	-53.1101005	C			
0.0001438	3832.0255765	26657569.	10.8712842	0.0015627	-0.0018873
3.8694478	-54.2300834	C			
0.0001463	3863.2318006	26415260.	10.8299242	0.0015839	-0.0019261
3.8849197	-55.3486335	C			
0.0001488	3894.2434441	26179788.	10.7902900	0.0016051	-0.0019649
3.8994496	-56.4657362	C			
0.0001588	4016.0249915	25297795.	10.6462828	0.0016901	-0.0021199
3.9479248	-60.0000000	CY			
0.0001688	4133.7310517	24496184.	10.5209207	0.0017754	-0.0022746
3.9806732	-60.0000000	CY			
0.0001788	4247.9101512	23764532.	10.4135319	0.0018614	-0.0024286
3.9975898	-60.0000000	CY			
0.0001888	4358.0123479	23088807.	10.3198054	0.0019479	-0.0025821
3.9999546	-60.0000000	CY			
0.0001988	4464.2379578	22461575.	10.2407587	0.0020354	-0.0027346
3.9996410	-60.0000000	CY			
0.0002088	4562.4263006	21855934.	10.1704065	0.0021231	-0.0028869
3.9983120	60.0000000	CY			
0.0002188	4639.7530927	21210300.	10.0973774	0.0022088	-0.0030412
3.9996060	60.0000000	CY			
0.0002288	4706.1852531	20573487.	10.0288670	0.0022941	-0.0031959
3.9999827	60.0000000	CY			
0.0002388	4770.1683894	19979763.	9.9698039	0.0023803	-0.0033497
3.9978148	60.0000000	CY			
0.0002488	4831.6057648	19423541.	9.9168598	0.0024668	-0.0035032
3.9975898	60.0000000	CY			
0.0002588	4887.6110309	18889318.	9.8678277	0.0025533	-0.0036567
3.9975038	60.0000000	CY			
0.0002688	4926.0846089	18329617.	9.8115435	0.0026369	-0.0038131
3.9972311	60.0000000	CY			
0.0002788	4949.0138678	17754310.	9.7490045	0.0027175	-0.0039725
3.9999721	60.0000000	CY			
0.0002888	4964.7702229	17194009.	9.6856116	0.0027967	-0.0041333
3.9992917	60.0000000	CY			
0.0002988	4979.4288198	16667544.	9.6263180	0.0028759	-0.0042941
3.9971829	60.0000000	CY			
0.0003088	4993.5006542	16173281.	9.5722871	0.0029554	-0.0044546
3.9999687	60.0000000	CY			
0.0003188	5006.9329357	15708025.	9.5231403	0.0030355	-0.0046145
3.9985006	60.0000000	CYT			
0.0003288	5019.8970784	15269649.	9.4779753	0.0031159	-0.0047741
3.9979108	60.0000000	CYT			
0.0003388	5031.8445835	14854154.	9.4340617	0.0031958	-0.0049342

ABUT - Strength.l p7o

3. 9988536	60. 0000000	CYT				
0. 0003488	5043. 4419661		14461482.	9. 3936167	0. 0032760	-0. 0050940
3. 9972714	60. 0000000	CYT				
0. 0003588	5054. 3825815		14088871.	9. 3569163	0. 0033568	-0. 0052532
3. 9985246	60. 0000000	CYT				
0. 0003688	5065. 0017833		13735598.	9. 3230575	0. 0034379	-0. 0054121
3. 9991044	60. 0000000	CYT				
0. 0003788	5074. 1266021		13397034.	9. 2939391	0. 0035201	-0. 0055699
3. 9974269	60. 0000000	CYT				
0. 0003888	5082. 9259745		13075051.	9. 2671484	0. 0036026	-0. 0057274
3. 9998939	60. 0000000	CYT				
0. 0003988	5090. 1798212		12765341.	9. 2447441	0. 0036863	-0. 0058837
3. 9950911	60. 0000000	CYT				
0. 0004088	5096. 8309368		12469311.	9. 2232345	0. 0037700	-0. 0060400
3. 9990399	60. 0000000	CYT				
0. 0004188	5096. 8309368		12171537.	9. 2270998	0. 0038638	-0. 0061862
3. 9944108	60. 0000000	CYT				

Axial Thrust Force = 395.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0. 00001250	83. 5323457	66825877.	172. 0257743	0. 0002150	0. 0001850
0. 8594423	6. 2315843				
0. 00002500	167. 1073833	66842953.	92. 0310385	0. 0002301	0. 0001701
0. 9151700	6. 6635503				
0. 00003750	250. 6742185	66846458.	65. 3741665	0. 0002452	0. 0001552
0. 9705102	7. 0963906				
0. 00005000	334. 2287616	66845752.	52. 0517611	0. 0002603	0. 0001403
1. 0254597	7. 5301054				
0. 00006250	417. 7669219	66842708.	44. 0631433	0. 0002754	0. 0001254
1. 0800156	7. 9646947				
0. 00007500	501. 2846074	66837948.	38. 7414201	0. 0002906	0. 0001106
1. 1341748	8. 4001589				
0. 00008750	584. 7777242	66831740.	34. 9436375	0. 0003058	0. 0000958
1. 1879344	8. 8364981				
0. 0000100	668. 2421768	66824218.	32. 0983189	0. 0003210	0. 0000810
1. 2412913	9. 2737125				
0. 0000113	751. 6738672	66815455.	29. 8879772	0. 0003362	0. 0000662
1. 2942424	9. 7118026				
0. 0000125	835. 0686946	66805496.	28. 1221203	0. 0003515	0. 0000515
1. 3467847	10. 1507686				
0. 0000138	918. 4225554	66794368.	26. 6795261	0. 0003668	0. 0000368
1. 3989153	10. 5906111				
0. 0000150	1001. 7313428	66782090.	25. 4793800	0. 0003822	0. 0000222
1. 4506309	11. 0313303				
0. 0000163	1084. 9909460	66768674.	24. 4657334	0. 0003976	0. 00007568
1. 5019287	11. 4729269				
0. 0000175	1168. 1967500	66754100.	23. 5986218	0. 0004130	-0. 00007024
1. 5528055	11. 9154006				
0. 0000188	1251. 3243330	66737298.	22. 8486880	0. 0004284	-0. 0000216
1. 6032550	12. 3587241				
0. 0000200	1334. 3172577	66715863.	22. 1938318	0. 0004439	-0. 0000361
1. 6532659	12. 8028225				
0. 0000213	1417. 1179085	66687902.	21. 6171415	0. 0004594	-0. 0000506
1. 7028263	13. 2476135				

		ABUT - Strength.lp7o			
0. 0000225	1499. 6767769	66652301.	21. 1054742	0. 0004749	-0. 0000651
1. 7519254	13. 6930220				
0. 0000238	1581. 9532903	66608560.	20. 6484686	0. 0004904	-0. 0000796
1. 8005541	14. 1389828				
0. 0000250	1663. 9145676	66556583.	20. 2378487	0. 0005059	-0. 0000941
1. 8487042	14. 5854403				
0. 0000263	1745. 5345177	66496553.	19. 8669271	0. 0005215	-0. 0001085
1. 8963693	15. 0323484				
0. 0000275	1745. 5345177	63473982.	19. 2575205	0. 0005296	-0. 0001304
1. 9206734	15. 2621727 C				
0. 0000288	1745. 5345177	60714244.	18. 8977622	0. 0005433	-0. 0001467
1. 9619883	15. 6559593 C				
0. 0000300	1793. 5275965	59784253.	18. 5626367	0. 0005569	-0. 0001631
2. 0024078	16. 0450940 C				
0. 0000313	1839. 8731446	58875941.	18. 2491496	0. 0005703	-0. 0001797
2. 0419430	16. 4295419 C				
0. 0000325	1884. 3648877	57980458.	17. 9556225	0. 0005836	-0. 0001964
2. 0806864	16. 8100743 C				
0. 0000338	1927. 2030734	57102313.	17. 6801726	0. 0005967	-0. 0002133
2. 1186829	17. 1870190 C				
0. 0000350	1968. 5434330	56244098.	17. 4210999	0. 0006097	-0. 0002303
2. 1559671	17. 5606165 C				
0. 0000363	2008. 4827229	55406420.	17. 1768077	0. 0006227	-0. 0002473
2. 1925592	17. 9309691 C				
0. 0000375	2047. 0602139	54588272.	16. 9457719	0. 0006355	-0. 0002645
2. 2284639	18. 2980270 C				
0. 0000388	2084. 3610131	53789962.	16. 7267972	0. 0006482	-0. 0002818
2. 2637004	18. 6618884 C				
0. 0000400	2120. 4990349	53012476.	16. 5189344	0. 0006608	-0. 0002992
2. 2982982	19. 0227640 C				
0. 0000413	2155. 5885492	52256692.	16. 3213756	0. 0006733	-0. 0003167
2. 3322887	19. 3808957 C				
0. 0000425	2189. 7417557	51523335.	16. 1334303	0. 0006857	-0. 0003343
2. 3657049	19. 7365529 C				
0. 0000438	2223. 0683378	50812991.	15. 9545094	0. 0006980	-0. 0003520
2. 3985816	20. 0900340 C				
0. 0000450	2255. 2776601	50117281.	15. 7829620	0. 0007102	-0. 0003698
2. 4308175	20. 4401655 C				
0. 0000463	2286. 7787306	49443864.	15. 6192107	0. 0007224	-0. 0003876
2. 4625460	20. 7883164 C				
0. 0000475	2317. 7085868	48793865.	15. 4629941	0. 0007345	-0. 0004055
2. 4938165	21. 1349744 C				
0. 0000488	2347. 6888538	48157720.	15. 3126175	0. 0007465	-0. 0004235
2. 5244931	21. 4785631 C				
0. 0000513	2406. 0380046	46947083.	15. 0307677	0. 0007703	-0. 0004597
2. 5844983	22. 1611284 C				
0. 0000538	2462. 0607408	45805781.	14. 7704723	0. 0007939	-0. 0004961
2. 6426385	22. 8364236 C				
0. 0000563	2515. 9858770	44728638.	14. 5291461	0. 0008173	-0. 0005327
2. 6989926	23. 5049194 C				
0. 0000588	2568. 0356349	43711245.	14. 3046814	0. 0008404	-0. 0005696
2. 7536405	24. 1671508 C				
0. 0000613	2618. 4247748	42749792.	14. 0953538	0. 0008633	-0. 0006067
2. 8066638	24. 8237220 C				
0. 0000638	2667. 3597461	41840937.	13. 8997495	0. 0008861	-0. 0006439
2. 8581454	25. 4753120 C				
0. 0000663	2715. 0378417	40981703.	13. 7167107	0. 0009087	-0. 0006813
2. 9081694	26. 1226805 C				
0. 0000688	2761. 6463440	40169401.	13. 5452918	0. 0009312	-0. 0007188
2. 9568210	26. 7666758 C				
0. 0000713	2806. 8713647	39394686.	13. 3832131	0. 0009536	-0. 0007564
3. 0039583	27. 4051143 C				
0. 0000738	2851. 1802665	38660071.	13. 2306975	0. 0009758	-0. 0007942

ABUT - Strength.l p7o

3. 0497886	28. 0405043	C	37964430.	13. 0874053	0. 0009979	-0. 0008321
0. 0000763	2894. 7877900					
3. 0944200	28. 6741752	C	37297021.	12. 9506995	0. 0010199	-0. 0008701
0. 0000788	2937. 1403675					
3. 1375883	29. 3021099	C	36665662.	12. 8223858	0. 0010418	-0. 0009082
0. 0000813	2979. 0850639					
3. 1796993	29. 9299967	C	36059065.	12. 6996524	0. 0010636	-0. 0009464
0. 0000838	3019. 9466592					
3. 2204300	30. 5528309	C	35483773.	12. 5841763	0. 0010854	-0. 0009846
0. 0000863	3060. 4753987					
3. 2601461	31. 1760212	C	34929557.	12. 4732711	0. 0011070	-0. 0010230
0. 0000888	3099. 9982070					
3. 2985189	31. 7942316	C	34403509.	12. 3689537	0. 0011287	-0. 0010613
0. 0000913	3139. 3201849					
3. 3359504	32. 4137940	C	33895588.	12. 2684057	0. 0011502	-0. 0010998
0. 0000938	3177. 7113732					
3. 3720731	33. 0284781	C	33411261.	12. 1733440	0. 0011717	-0. 0011383
0. 0000963	3215. 8339018					
3. 4072269	33. 6438967	C	32946506.	12. 0826278	0. 0011932	-0. 0011768
0. 0000988	3253. 4674341					
3. 4412950	34. 2579756	C	32498695.	11. 9955445	0. 0012145	-0. 0012155
0. 0001013	3290. 4928279					
3. 4742230	-34. 8957321	C	32070569.	11. 9131038	0. 0012360	-0. 0012540
0. 0001038	3327. 3215818					
3. 5062200	-36. 0053987	C	31657311.	11. 8337810	0. 0012573	-0. 0012927
0. 0001063	3363. 5893098					
3. 5370958	-37. 1174120	C	31258876.	11. 7576913	0. 0012786	-0. 0013314
0. 0001088	3399. 4027457					
3. 5669120	-38. 2307307	C	30876589.	11. 6854389	0. 0013000	-0. 0013700
0. 0001113	3435. 0205749					
3. 5957984	-39. 3427024	C	30507675.	11. 6161155	0. 0013213	-0. 0014087
0. 0001138	3470. 2480789					
3. 6236513	-40. 4554886	C	30149794.	11. 5489464	0. 0013426	-0. 0014474
0. 0001163	3504. 9135746					
3. 6503895	-41. 5710640	C	29805345.	11. 4849997	0. 0013638	-0. 0014862
0. 0001188	3539. 3847367					
3. 6761990	-42. 6852819	C	29473480.	11. 4240792	0. 0013852	-0. 0015248
0. 0001213	3573. 6594171					
3. 7010737	-43. 7981313	C	29150988.	11. 3649430	0. 0014064	-0. 0015636
0. 0001238	3607. 4347494					
3. 7248612	-44. 9134104	C	28838081.	11. 3078052	0. 0014276	-0. 0016024
0. 0001263	3640. 8077627					
3. 7476163	-46. 0299478	C	28535813.	11. 2532572	0. 0014489	-0. 0016411
0. 0001288	3673. 9859316					
3. 7694381	-47. 1451005	C	28243559.	11. 2011543	0. 0014702	-0. 0016798
0. 0001313	3706. 9671201					
3. 7903201	-48. 2588562	C	27960173.	11. 1510809	0. 0014915	-0. 0017185
0. 0001338	3739. 6731653					
3. 8102212	-49. 3722946	C	27683146.	11. 1019151	0. 0015126	-0. 0017574
0. 0001363	3771. 8286094					
3. 8290191	-50. 4894074	C	27414692.	11. 0548744	0. 0015339	-0. 0017961
0. 0001388	3803. 7885243					
3. 8468775	-51. 6050989	C	27154342.	11. 0098491	0. 0015551	-0. 0018349
0. 0001413	3835. 5507447					
3. 8637899	-52. 7193554	C	26901656.	10. 9667374	0. 0015765	-0. 0018735
0. 0001438	3867. 1130703					
3. 8797496	-53. 8321631	C	26656227.	10. 9254446	0. 0015978	-0. 0019122
0. 0001463	3898. 4732647					
3. 8947498	-54. 9435076	C	26415664.	10. 8847099	0. 0016191	-0. 0019509
0. 0001488	3929. 3299713					
3. 9086721	-56. 0584327	C	25515319.	10. 7371735	0. 0017045	-0. 0021055
0. 0001588	4050. 5568198					
3. 9546731	-60. 0000000	CY				

		ABUT - Strength.Ip7o			
0.0001688	4167.8732909	24698508.	10.6097032	0.0017904	-0.0022596
3.9848376	-60.0000000	CY			
0.0001788	4281.3477697	23951596.	10.4996804	0.0018768	-0.0024132
3.9989264	-60.0000000	CY			
0.0001888	4390.8999220	23263046.	10.4050989	0.0019640	-0.0025660
3.9985785	-60.0000000	CY			
0.0001988	4496.0851661	22621812.	10.3233044	0.0020518	-0.0027182
3.9999976	-60.0000000	CY			
0.0002088	4594.7294582	22010680.	10.2527087	0.0021403	-0.0028697
3.9994770	60.0000000	CY			
0.0002188	4674.2250805	21367886.	10.1815481	0.0022272	-0.0030228
3.9999999	60.0000000	CY			
0.0002288	4740.2395834	20722359.	10.1112889	0.0023130	-0.0031770
3.9982045	60.0000000	CY			
0.0002388	4803.3617639	20118793.	10.0501898	0.0023995	-0.0033305
3.9989100	60.0000000	CY			
0.0002488	4864.3026787	19554986.	9.9973839	0.0024868	-0.0034832
3.9992241	60.0000000	CY			
0.0002588	4921.1910368	19019096.	9.9496469	0.0025745	-0.0036355
3.9992430	60.0000000	CY			
0.0002688	4963.8047170	18469971.	9.8958525	0.0026595	-0.0037905
3.9987749	60.0000000	CY			
0.0002788	4988.6858593	17896631.	9.8336380	0.0027411	-0.0039489
3.9973779	60.0000000	CY			
0.0002888	5005.1266899	17333772.	9.7707561	0.0028213	-0.0041087
3.9999997	60.0000000	CY			
0.0002988	5019.9037785	16803025.	9.7127255	0.0029017	-0.0042683
3.9993392	60.0000000	CY			
0.0003088	5033.5013662	16302838.	9.6569221	0.0029816	-0.0044284
3.9968127	60.0000000	CY			
0.0003188	5046.5731444	15832386.	9.6059303	0.0030619	-0.0045881
3.9998846	60.0000000	CYT			
0.0003288	5059.0958218	15388885.	9.5593755	0.0031426	-0.0047474
3.9976750	60.0000000	CYT			
0.0003388	5071.2295198	14970419.	9.5165796	0.0032237	-0.0049063
3.9999822	60.0000000	CYT			
0.0003488	5082.6928238	14574030.	9.4775199	0.0033053	-0.0050647
3.9976484	60.0000000	CYT			
0.0003588	5093.3156235	14197395.	9.4392922	0.0033863	-0.0052237
3.9999499	60.0000000	CYT			
0.0003688	5102.8179034	13838150.	9.4055167	0.0034683	-0.0053817
3.9965699	60.0000000	CYT			
0.0003788	5111.5945772	13495959.	9.3751125	0.0035508	-0.0055392
3.9996714	60.0000000	CYT			
0.0003888	5119.2294188	13168436.	9.3486737	0.0036343	-0.0056957
3.9942810	60.0000000	CYT			
0.0003988	5125.9775650	12855116.	9.3254469	0.0037185	-0.0058515
3.9987081	60.0000000	CYT			
0.0004088	5131.9778771	12555298.	9.3050037	0.0038034	-0.0060066
3.9986834	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	171.000	4143.717	0.00300000

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2	185.000	4204.054	0.00300000
3	385.000	5000.976	0.00300000
4	395.000	5036.500	0.00300000

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

In ACI 318-08, 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 318-08, 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 (Factored) Load Capacity No. in-kip	Resistance Bending Factor at Ult. for Moment	Nominal Moment Capacity in-kip	Ultimate (Factored) Axial Thrust kips	Ultimate Moment
-----	-----	-----	-----	-----
1 2693.416	0.65	21824790.552	4143.717	111.150
2 2732.635	0.65	22471716.590	4204.054	120.250
3 3250.635	0.65	32222994.243	5000.976	250.250
4 3273.725	0.65	32701496.467	5036.500	256.750
1 2900.602	0.70	20902411.446	4143.717	119.700
2 2942.838	0.70	21449392.243	4204.054	129.500
3 3500.683	0.70	29546517.542	5000.976	269.500
4 3525.550	0.70	29943586.445	5036.500	276.500
1 3107.787	0.75	20121749.704	4143.717	128.250
2 3153.041	0.75	20589375.439	4204.054	138.750
3 3750.732	0.75	27308614.934	5000.976	288.750
4 3777.375	0.75	27636556.582	5036.500	296.250

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

Pile-head conditions are Shear and Moment (Loading Type 1)

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Shear force at pile head = 23000.0 lbs
 Applied moment at pile head = 1.0 in-lbs
 Axial thrust load on pile head = 185000.0 lbs

Depth Res.	Deflect. Soil Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
X	y	Moment	lbs	radians	psi *	lb-in ²	lb/in
Es*h	Lat. Load	in-lbs					
feet	inches						
lb/inch	lb/inch						
0.000	0.00	0.3422	1.0000	23000.	-0.003089	0.000	7.078E+10
	1.000	0.3051	282859.	21997.	-0.003065	0.000	7.078E+10
	-167.0949	6572.4091	0.000	19545.	-0.002995	0.000	7.078E+10
	2.000	0.2686	541548.	16302.	-0.002884	0.000	7.073E+10
	-241.6309	10795.	0.000	12469.	-0.002739	0.000	7.061E+10
	3.000	0.2332	765239.	8212.2524	-0.002567	0.000	7.048E+10
	-298.9058	15381.	0.000	3666.1143	-0.002338	0.000	5.044E+10
	4.000	0.1994	945600.	537.5076	-0.002058	0.000	4.952E+10
	-339.8537	20456.	0.000	-1075.5212	-0.001773	0.000	4.947E+10
	5.000	0.1675	1076664.	-2644.5953	-0.001493	0.000	5.029E+10
	-369.6541	26489.	0.000	-4073.2266	-0.001259	0.000	7.043E+10
	6.000	0.1378	1154092.	-5308.2474	-0.001073	0.000	7.049E+10
	-388.0356	33802.	0.000	-6309.9246	-0.000898	0.000	7.056E+10
	7.000	0.1113	1175032.	0.000	-0.000735	0.000	7.063E+10
	-133.3989	14377.	0.000	-7058.2019	-0.000735	0.000	7.063E+10
	8.000	0.0884	1176132.	-7549.9118	-0.000587	0.000	7.069E+10
	-135.4392	18396.	0.000	-7795.8062	-0.000454	0.000	7.074E+10
	9.000	0.0688	1157094.	0.000	-0.000336	0.000	7.077E+10
	-126.0731	21996.	0.000	-7817.5493	-0.000336	0.000	7.077E+10
	10.000	0.0525	1119289.	-7644.7909	-0.000235	0.000	7.078E+10
	-112.0321	25596.	0.000	-7312.4167	-0.000149	0.000	7.078E+10
	11.000	0.0386	1064928.	0.000	-0.000149	0.000	7.078E+10
	-93.8047	29196.	0.000	-6858.0462	-7.736E-05	0.000	7.079E+10
	12.000	0.0268	996657.	-6319.8280	-2.000E-05	0.000	7.079E+10
	-73.1415	32796.	0.000	-5734.5663	2.450E-05	0.000	7.079E+10
	13.000	0.0170	917477.	-5136.1803	5.733E-05	0.000	7.079E+10
	-51.5714	36396.	0.000	-4554.4804	7.970E-05	0.000	7.079E+10
	14.000	0.009115	830525.	-4014.2237	9.276E-05	0.000	7.078E+10
	-30.3802	39996.	0.000	0.000	0.000	0.000	7.078E+10
	15.000	0.002918	738885.	0.000	0.000	0.000	7.078E+10
	-10.6022	43596.	0.000	0.000	0.000	0.000	7.078E+10
	16.000	-0.001774	645440.	0.000	0.000	0.000	7.078E+10
	6.9783	47196.	0.000	0.000	0.000	0.000	7.078E+10
	17.000	-0.005154	552757.	0.000	0.000	0.000	7.078E+10
	21.8148	50796.	0.000	0.000	0.000	0.000	7.078E+10
	18.000	-0.007408	463008.	0.000	0.000	0.000	7.078E+10
	33.5809	54396.	0.000	0.000	0.000	0.000	7.078E+10
	19.000	-0.008721	377919.	0.000	0.000	0.000	7.078E+10
	42.1475	57996.	0.000	0.000	0.000	0.000	7.078E+10
	20.000	-0.009265	298758.	0.000	0.000	0.000	7.078E+10
	47.5555	61596.	0.000	0.000	0.000	0.000	7.078E+10
	21.000	-0.009201	226332.	0.000	0.000	0.000	7.078E+10
	49.9881	65196.	0.000	0.000	0.000	0.000	7.078E+10
	22.000	-0.008677	161020.	0.000	0.000	0.000	7.078E+10
	49.7429	68796.	0.000	0.000	0.000	0.000	7.078E+10
	23.000	-0.007825	102809.	0.000	0.000	0.000	7.078E+10
	47.2071	72396.	0.000	0.000	0.000	0.000	7.078E+10
	24.000	-0.006764	51358.	0.000	0.000	0.000	7.078E+10
	42.8357	75996.	0.000	0.000	0.000	0.000	7.078E+10
	25.000	-0.005599	6056.0413	-3534.4014	9.763E-05	0.000	7.078E+10

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37. 1347	79596.	0. 000					
26. 000	-0. 004421	-33901.	-2874. 5505	9. 527E-05	0. 000	7. 078E+10	
72. 8404	197723.	0. 000					
27. 000	-0. 003312	-63356.	-1936. 9740	8. 703E-05	0. 000	7. 078E+10	
83. 4223	302255.	0. 000					
28. 000	-0. 002332	-80775.	-961. 7252	7. 481E-05	0. 000	7. 078E+10	
79. 1191	407110.	0. 000					
29. 000	-0. 001517	-86770.	-98. 5503	6. 061E-05	0. 000	7. 078E+10	
64. 7434	512287.	0. 000					
30. 000	-0. 000878	-83409.	560. 9774	4. 618E-05	0. 000	7. 078E+10	
45. 1779	617787.	0. 000					
31. 000	-0. 000408	-73511.	979. 7337	3. 288E-05	0. 000	7. 078E+10	
24. 6148	723610.	0. 000					
32. 000	-8. 841E-05	-60041.	1162. 2433	2. 156E-05	0. 000	7. 078E+10	
5. 8035	787742.	0. 000					
33. 000	0. 000109	-45713.	1153. 9714	1. 260E-05	0. 000	7. 078E+10	
-7. 1821	788952.	0. 000					
34. 000	0. 000214	-32402.	1026. 3750	5. 974E-06	0. 000	7. 078E+10	
-14. 0839	790161.	0. 000					
35. 000	0. 000253	-21107.	841. 9130	1. 438E-06	0. 000	7. 078E+10	
-16. 6597	791371.	0. 000					
36. 000	0. 000248	-12203.	643. 5109	-1. 385E-06	0. 000	7. 078E+10	
-16. 4073	792581.	0. 000					
37. 000	0. 000219	-5656. 3257	457. 9959	-2. 899E-06	0. 000	7. 078E+10	
-14. 5119	793790.	0. 000					
38. 000	0. 000179	-1197. 7305	299. 8350	-3. 480E-06	0. 000	7. 078E+10	
-11. 8483	795000.	0. 000					
39. 000	0. 000136	1555. 1654	174. 6566	-3. 449E-06	0. 000	7. 078E+10	
-9. 0148	796210.	0. 000					
40. 000	9. 605E-05	3009. 3437	82. 2702	-3. 063E-06	0. 000	7. 078E+10	
-6. 3829	797419.	0. 000					
41. 000	6. 236E-05	3543. 2480	19. 0699	-2. 507E-06	0. 000	7. 078E+10	
-4. 1505	798629.	0. 000					
42. 000	3. 588E-05	3478. 1526	-20. 1828	-1. 912E-06	0. 000	7. 078E+10	
-2. 3917	799839.	0. 000					
43. 000	1. 648E-05	3067. 3494	-41. 1319	-1. 357E-06	0. 000	7. 078E+10	
-1. 0999	801048.	0. 000					
44. 000	3. 311E-06	2497. 0123	-49. 0590	-8. 855E-07	0. 000	7. 078E+10	
-0. 2213	802258.	0. 000					
45. 000	-4. 775E-06	1893. 8638	-48. 4687	-5. 133E-07	0. 000	7. 078E+10	
0. 3197	803468.	0. 000					
46. 000	-9. 008E-06	1336. 0431	-42. 9260	-2. 395E-07	0. 000	7. 078E+10	
0. 6041	804677.	0. 000					
47. 000	-1. 052E-05	864. 7039	-35. 0614	-5. 295E-08	0. 000	7. 078E+10	
0. 7067	805887.	0. 000					
48. 000	-1. 028E-05	494. 8049	-26. 6731	6. 229E-08	0. 000	7. 078E+10	
0. 6913	807097.	0. 000					
49. 000	-9. 028E-06	224. 2735	-18. 8762	1. 232E-07	0. 000	7. 078E+10	
0. 6081	808306.	0. 000					
50. 000	-7. 321E-06	41. 2285	-12. 2641	1. 457E-07	0. 000	7. 078E+10	
0. 4939	809516.	0. 000					
51. 000	-5. 530E-06	-70. 7125	-7. 0590	1. 432E-07	0. 000	7. 078E+10	
0. 3736	810726.	0. 000					
52. 000	-3. 883E-06	-128. 8244	-3. 2408	1. 263E-07	0. 000	7. 078E+10	
0. 2627	811935.	0. 000					
53. 000	-2. 498E-06	-149. 0527	-0. 6486	1. 028E-07	0. 000	7. 078E+10	
0. 1693	813145.	0. 000					
54. 000	-1. 417E-06	-144. 8475	0. 9439	7. 787E-08	0. 000	7. 078E+10	
0. 0961	814355.	0. 000					
55. 000	-6. 294E-07	-126. 7453	1. 7773	5. 485E-08	0. 000	7. 078E+10	
0. 0428	815565.	0. 000					
56. 000	-1. 002E-07	-102. 4353	2. 0749	3. 542E-08	0. 000	7. 078E+10	
0. 006821	816774.	0. 000					

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57.000	2.206E-07	-77.1044	2.0256	2.020E-08	0.000	7.078E+10
-0.0150	817984.	0.000				
58.000	3.846E-07	-53.9101	1.7779	9.095E-09	0.000	7.078E+10
-0.0263	819194.	0.000				
59.000	4.389E-07	-34.4762	1.4403	1.603E-09	0.000	7.078E+10
-0.0300	820403.	0.000				
60.000	4.231E-07	-19.3502	1.0865	-2.960E-09	0.000	7.078E+10
-0.0290	821613.	0.000				
61.000	3.679E-07	-8.3879	0.7613	-5.311E-09	0.000	7.078E+10
-0.0252	822823.	0.000				
62.000	2.956E-07	-1.0545	0.4882	-6.112E-09	0.000	7.078E+10
-0.0203	824032.	0.000				
63.000	2.212E-07	3.3564	0.2752	-5.917E-09	0.000	7.078E+10
-0.0152	825242.	0.000				
64.000	1.536E-07	5.5757	0.1204	-5.159E-09	0.000	7.078E+10
-0.0106	826452.	0.000				
65.000	9.735E-08	6.2698	0.0167	-4.155E-09	0.000	7.078E+10
-0.006714	827661.	0.000				
66.000	5.386E-08	5.9947	-0.0459	-3.116E-09	0.000	7.078E+10
-0.003720	828871.	0.000				
67.000	2.257E-08	5.1817	-0.0776	-2.168E-09	0.000	7.078E+10
-0.001561	830081.	0.000				
68.000	1.820E-09	4.1418	-0.0877	-1.378E-09	0.000	7.078E+10
-0.000126	831290.	0.000				
69.000	-1.050E-08	3.0823	-0.0841	-7.656E-10	0.000	7.078E+10
0.000729	832500.	0.000				
70.000	-1.656E-08	2.1265	-0.0728	-3.241E-10	0.000	7.078E+10
0.001150	833710.	0.000				
71.000	-1.828E-08	1.3355	-0.0583	-3.067E-11	0.000	7.078E+10
0.001272	834919.	0.000				
72.000	-1.729E-08	0.7272	-0.0434	1.442E-10	0.000	7.078E+10
0.001205	836129.	0.000				
73.000	-1.482E-08	0.2921	-0.0300	2.306E-10	0.000	7.078E+10
0.001034	837339.	0.000				
74.000	-1.176E-08	0.005882	-0.0189	2.559E-10	0.000	7.078E+10
0.000822	838548.	0.000				
75.000	-8.681E-09	-0.1621	-0.0103	2.426E-10	0.000	7.078E+10
0.000607	839758.	0.000				
76.000	-5.934E-09	-0.2425	-0.004164	2.083E-10	0.000	7.078E+10
0.000416	840968.	0.000				
77.000	-3.681E-09	-0.2629	-0.000119	1.655E-10	0.000	7.078E+10
0.000258	842177.	0.000				
78.000	-1.963E-09	-0.2461	0.002259	1.223E-10	0.000	7.078E+10
0.000138	843387.	0.000				
79.000	-7.452E-10	-0.2093	0.003401	8.373E-11	0.000	7.078E+10
5.245E-05	844597.	0.000				
80.000	4.664E-11	-0.1648	0.003696	5.201E-11	0.000	7.078E+10
-3.288E-06	845806.	0.000				
81.000	5.031E-10	-0.1208	0.003463	2.780E-11	0.000	7.078E+10
-3.551E-05	847016.	0.000				
82.000	7.139E-10	-0.0818	0.002947	1.062E-11	0.000	7.078E+10
-5.046E-05	848226.	0.000				
83.000	7.581E-10	-0.0501	0.002323	0.000	0.000	7.078E+10
-5.366E-05	849435.	0.000				
84.000	7.004E-10	-0.0261	0.001703	-7.023E-12	0.000	7.078E+10
-4.965E-05	850645.	0.000				
85.000	5.895E-10	-0.009218	0.001154	-1.002E-11	0.000	7.078E+10
-4.185E-05	851855.	0.000				
86.000	4.600E-10	0.001638	0.000707	-1.066E-11	0.000	7.078E+10
-3.270E-05	853065.	0.000				
87.000	3.337E-10	0.007786	0.000368	-9.860E-12	0.000	7.078E+10
-2.376E-05	854274.	0.000				
88.000	2.233E-10	0.0105	0.000130	-8.310E-12	0.000	7.078E+10

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-1.592E-05	855484.	0.000					
89.000	1.343E-10	0.0109	-2.332E-05	-6.492E-12	0.000	7.078E+10	
-9.588E-06	856694.	0.000					
90.000	6.752E-11	0.009978	-0.000110	-4.719E-12	0.000	7.078E+10	
-4.827E-06	857903.	0.000					
91.000	2.104E-11	0.008322	-0.000148	-3.168E-12	0.000	7.078E+10	
-1.507E-06	859113.	0.000					
92.000	-8.504E-12	0.006445	-0.000153	-1.916E-12	0.000	7.078E+10	
6.097E-07	860323.	0.000					
93.000	-2.494E-11	0.004654	-0.000139	0.000	0.000	7.078E+10	
1.790E-06	861532.	0.000					
94.000	-3.191E-11	0.003118	-0.000114	0.000	0.000	7.078E+10	
2.294E-06	862742.	0.000					
95.000	-3.253E-11	0.001912	-8.647E-05	0.000	0.000	7.078E+10	
2.342E-06	863952.	0.000					
96.000	-2.926E-11	0.001043	-5.975E-05	0.000	0.000	7.078E+10	
2.110E-06	865161.	0.000					
97.000	-2.388E-11	0.000477	-3.675E-05	0.000	0.000	7.078E+10	
1.724E-06	866371.	0.000					
98.000	-1.752E-11	0.000158	-1.881E-05	0.000	0.000	7.078E+10	
1.267E-06	867581.	0.000					
99.000	-1.084E-11	2.273E-05	-6.499E-06	0.000	0.000	7.078E+10	
7.849E-07	868790.	0.000					
100.000	-4.115E-12	0.000	0.000	0.000	0.000	7.078E+10	
2.984E-07	435000.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationship.

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	=	0.3421532 inches
Computed slope at pile head	=	-0.0030891 radians
Maximum bending moment	=	1176132. inch-lbs
Maximum shear force	=	23000. lbs
Depth of maximum bending moment	=	8.0000000 feet below pile head
Depth of maximum shear force	=	0.0000000 feet below pile head
Number of iterations	=	44
Number of zero deflection points	=	8

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	15000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	395000.0 lbs

Depth Res.	Deflect. Soil	Bending Distrib.	Shear	Slope	Total	Bending	Soil
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X feet	Es*h lb/inch	y Lat. inches	Load lb/inch	Moment in-lbs	ABUT - Strength. Force lbs	Ip7o S radi ans	Stress psi *	Sti ffness lb-in^2	p lb/in
0.000	0.00	0.000	0.1788	0.000	15000.	-0.001684	0.000	6.683E+10	
	1.000	0.000	0.1586	187983.	14200.	-0.001667	0.000	6.683E+10	
-133.2504			10084.	0.000					
	2.000		0.1388	356616.	12335.	-0.001618	0.000	6.684E+10	
-177.6149			15360.	0.000					
	3.000		0.1197	499370.	9984.5313	-0.001541	0.000	6.684E+10	
-214.1808			21466.	0.000					
	4.000		0.1018	610856.	7242.5003	-0.001442	0.000	6.683E+10	
-242.8243			28631.	0.000					
	5.000		0.0851	686856.	4204.1327	-0.001325	0.000	6.682E+10	
-263.5703			37152.	0.000					
	6.000		0.0700	724317.	963.3490	-0.001198	0.000	6.682E+10	
-276.5604			47430.	0.000					
	7.000		0.0564	721337.	-1113.0419	-0.001069	0.000	6.682E+10	
-69.5048			14796.	0.000					
	8.000		0.0443	707734.	-1937.7759	-0.000940	0.000	6.682E+10	
-67.9509			18396.	0.000					
	9.000		0.0338	683744.	-2717.2739	-0.000815	0.000	6.682E+10	
-61.9654			21996.	0.000					
	10.000		0.0248	650249.	-3405.9301	-0.000696	0.000	6.683E+10	
-52.8106			25596.	0.000					
	11.000		0.0171	608595.	-3972.6145	-0.000582	0.000	6.683E+10	
-41.6368			29196.	0.000					
	12.000		0.0108	560428.	-4399.1921	-0.000478	0.000	6.683E+10	
-29.4595			32796.	0.000					
	13.000		0.005653	507542.	-4678.8132	-0.000382	0.000	6.684E+10	
-17.1440			36396.	0.000					
	14.000		0.001619	451755.	-4814.0594	-0.000296	0.000	6.684E+10	
-5.3970			39996.	0.000					
	15.000		-0.001441	394806.	-4815.0370	-0.000220	0.000	6.684E+10	
5.2341			43596.	0.000					
	16.000		-0.003650	338275.	-4697.4956	-0.000154	0.000	6.685E+10	
14.3561			47196.	0.000					
	17.000		-0.005131	283524.	-4481.0434	-9.795E-05	0.000	6.685E+10	
21.7192			50796.	0.000					
	18.000		-0.006001	231659.	-4187.5152	-5.171E-05	0.000	6.685E+10	
27.2022			54396.	0.000					
	19.000		-0.006372	183514.	-3839.5307	-1.444E-05	0.000	6.684E+10	
30.7952			57996.	0.000					
	20.000		-0.006348	139647.	-3459.2694	1.457E-05	0.000	6.684E+10	
32.5816			61596.	0.000					
	21.000		-0.006022	100353.	-3067.4663	3.611E-05	0.000	6.683E+10	
32.7189			65196.	0.000					
	22.000		-0.005481	65685.	-2682.6252	5.102E-05	0.000	6.683E+10	
31.4213			68796.	0.000					
	23.000		-0.004798	35486.	-2320.4276	6.010E-05	0.000	6.683E+10	
28.9450			72396.	0.000					
	24.000		-0.004038	9425.1996	-1993.3106	6.414E-05	0.000	6.683E+10	
25.5745			75996.	0.000					
	25.000		-0.003259	-12961.	-1710.1812	6.382E-05	0.000	6.683E+10	
21.6137			79596.	0.000					
	26.000		-0.002507	-32224.	-1332.6872	5.976E-05	0.000	6.683E+10	
41.3020			197723.	0.000					
	27.000		-0.001824	-45512.	-809.1826	5.278E-05	0.000	6.683E+10	
45.9488			302255.	0.000					
	28.000		-0.001240	-52145.	-281.1042	4.401E-05	0.000	6.683E+10	

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42.0643	407110.	0.000					
29.000	-0.000768	-52676.	167.9752	3.460E-05	0.000	6.683E+10	
32.7823	512287.	0.000					
30.000	-0.000409	-48442.	491.1387	2.552E-05	0.000	6.683E+10	
21.0783	617787.	0.000					
31.000	-0.000155	-41131.	673.8097	1.748E-05	0.000	6.683E+10	
9.3669	723610.	0.000					
32.000	1.013E-05	-32436.	726.0229	1.088E-05	0.000	6.683E+10	
-0.6647	787742.	0.000					
33.000	0.000106	-23809.	680.3415	5.826E-06	0.000	6.683E+10	
-6.9489	788952.	0.000					
34.000	0.000150	-16163.	579.4041	2.237E-06	0.000	6.683E+10	
-9.8740	790161.	0.000					
35.000	0.000159	-9924.6705	457.0925	-1.050E-07	0.000	6.683E+10	
-10.5112	791371.	0.000					
36.000	0.000147	-5191.6485	335.5980	-1.462E-06	0.000	6.683E+10	
-9.7378	792581.	0.000					
37.000	0.000124	-1856.4562	227.8390	-2.095E-06	0.000	6.683E+10	
-8.2220	793790.	0.000					
38.000	9.715E-05	296.3491	139.8883	-2.235E-06	0.000	6.683E+10	
-6.4365	795000.	0.000					
39.000	7.065E-05	1522.0517	73.1426	-2.072E-06	0.000	6.683E+10	
-4.6878	796210.	0.000					
40.000	4.743E-05	2071.4119	26.1048	-1.749E-06	0.000	6.683E+10	
-3.1518	797419.	0.000					
41.000	2.867E-05	2165.1504	-4.2548	-1.369E-06	0.000	6.683E+10	
-1.9081	798629.	0.000					
42.000	1.458E-05	1982.2728	-21.5338	-9.964E-07	0.000	6.683E+10	
-0.9717	799839.	0.000					
43.000	4.757E-06	1657.7845	-29.2692	-6.696E-07	0.000	6.683E+10	
-0.3175	801048.	0.000					
44.000	-1.492E-06	1286.1601	-30.5757	-4.053E-07	0.000	6.683E+10	
0.0998	802258.	0.000					
45.000	-4.970E-06	927.8088	-27.9804	-2.065E-07	0.000	6.683E+10	
0.3328	803468.	0.000					
46.000	-6.449E-06	616.5884	-23.3892	-6.784E-08	0.000	6.683E+10	
0.4324	804677.	0.000					
47.000	-6.598E-06	367.1119	-18.1358	2.048E-08	0.000	6.683E+10	
0.4431	805887.	0.000					
48.000	-5.957E-06	181.1341	-13.0730	6.970E-08	0.000	6.683E+10	
0.4007	807097.	0.000					
49.000	-4.926E-06	52.6981	-8.6784	9.070E-08	0.000	6.683E+10	
0.3318	808306.	0.000					
50.000	-3.780E-06	-28.0065	-5.1575	9.291E-08	0.000	6.683E+10	
0.2550	809516.	0.000					
51.000	-2.696E-06	-71.9637	-2.5347	8.394E-08	0.000	6.683E+10	
0.1821	810726.	0.000					
52.000	-1.766E-06	-89.6350	-0.7251	6.943E-08	0.000	6.683E+10	
0.1195	811935.	0.000					
53.000	-1.029E-06	-90.0247	0.4102	5.330E-08	0.000	6.683E+10	
0.0697	813145.	0.000					
54.000	-4.867E-07	-80.2943	1.0269	3.801E-08	0.000	6.683E+10	
0.0330	814355.	0.000					
55.000	-1.171E-07	-65.7395	1.2728	2.489E-08	0.000	6.683E+10	
0.007960	815565.	0.000					
56.000	1.108E-07	-49.9824	1.2754	1.450E-08	0.000	6.683E+10	
-0.007540	816774.	0.000					
57.000	2.310E-07	-35.2685	1.1356	6.850E-09	0.000	6.683E+10	
-0.0157	817984.	0.000					
58.000	2.752E-07	-22.7920	0.9284	1.637E-09	0.000	6.683E+10	
-0.0188	819194.	0.000					
59.000	2.703E-07	-13.0013	0.7049	-1.576E-09	0.000	6.683E+10	
-0.0185	820403.	0.000					

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60.000	2.374E-07	-5.8605	0.4965	-3.270E-09	0.000	6.683E+10
-0.0163	821613.	0.000				
61.000	1.918E-07	-1.0550	0.3200	-3.891E-09	0.000	6.683E+10
-0.0132	822823.	0.000				
62.000	1.440E-07	1.8576	0.1818	-3.819E-09	0.000	6.683E+10
-0.009888	824032.	0.000				
63.000	1.002E-07	3.3447	0.0812	-3.352E-09	0.000	6.683E+10
-0.006888	825242.	0.000				
64.000	6.355E-08	3.8370	0.0136	-2.707E-09	0.000	6.683E+10
-0.004377	826452.	0.000				
65.000	3.520E-08	3.6958	-0.0273	-2.030E-09	0.000	6.683E+10
-0.002428	827661.	0.000				
66.000	1.482E-08	3.2019	-0.0480	-1.411E-09	0.000	6.683E+10
-0.001024	828871.	0.000				
67.000	1.339E-09	2.5577	-0.0547	-8.939E-10	0.000	6.683E+10
-9.263E-05	830081.	0.000				
68.000	-6.632E-09	1.8981	-0.0525	-4.939E-10	0.000	6.683E+10
0.000459	831290.	0.000				
69.000	-1.051E-08	1.3030	-0.0453	-2.065E-10	0.000	6.683E+10
0.000729	832500.	0.000				
70.000	-1.159E-08	0.8118	-0.0361	-1.658E-11	0.000	6.683E+10
0.000805	833710.	0.000				
71.000	-1.091E-08	0.4358	-0.0268	9.544E-11	0.000	6.683E+10
0.000759	834919.	0.000				
72.000	-9.297E-09	0.1688	-0.0183	1.497E-10	0.000	6.683E+10
0.000648	836129.	0.000				
73.000	-7.318E-09	-0.005013	-0.0114	1.644E-10	0.000	6.683E+10
0.000511	837339.	0.000				
74.000	-5.350E-09	-0.1053	-0.006052	1.545E-10	0.000	6.683E+10
0.000374	838548.	0.000				
75.000	-3.609E-09	-0.1517	-0.002293	1.314E-10	0.000	6.683E+10
0.000253	839758.	0.000				
76.000	-2.196E-09	-0.1616	0.000145	1.033E-10	0.000	6.683E+10
0.000154	840968.	0.000				
77.000	-1.130E-09	-0.1492	0.001544	7.541E-11	0.000	6.683E+10
7.929E-05	842177.	0.000				
78.000	-3.858E-10	-0.1253	0.002183	5.076E-11	0.000	6.683E+10
2.711E-05	843387.	0.000				
79.000	8.841E-11	-0.0973	0.002308	3.078E-11	0.000	6.683E+10
-6.222E-06	844597.	0.000				
80.000	3.529E-10	-0.0702	0.002122	1.574E-11	0.000	6.683E+10
-2.487E-05	845806.	0.000				
81.000	4.661E-10	-0.0465	0.001775	5.258E-12	0.000	6.683E+10
-3.290E-05	847016.	0.000				
82.000	4.791E-10	-0.0276	0.001374	-1.401E-12	0.000	6.683E+10
-3.386E-05	848226.	0.000				
83.000	4.325E-10	-0.0136	0.000987	-5.098E-12	0.000	6.683E+10
-3.061E-05	849435.	0.000				
84.000	3.567E-10	-0.003876	0.000652	-6.663E-12	0.000	6.683E+10
-2.529E-05	850645.	0.000				
85.000	2.726E-10	0.002161	0.000384	-6.817E-12	0.000	6.683E+10
-1.935E-05	851855.	0.000				
86.000	1.931E-10	0.005410	0.000186	-6.137E-12	0.000	6.683E+10
-1.373E-05	853065.	0.000				
87.000	1.253E-10	0.006679	4.994E-05	-5.052E-12	0.000	6.683E+10
-8.918E-06	854274.	0.000				
88.000	7.184E-11	0.006657	-3.430E-05	-3.855E-12	0.000	6.683E+10
-5.122E-06	855484.	0.000				
89.000	3.276E-11	0.005892	-7.906E-05	-2.728E-12	0.000	6.683E+10
-2.339E-06	856694.	0.000				
90.000	6.372E-12	0.004785	-9.582E-05	-1.769E-12	0.000	6.683E+10
-4.555E-07	857903.	0.000				
91.000	-9.703E-12	0.003609	-9.439E-05	-1.016E-12	0.000	6.683E+10

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6.946E-07	859113.	0.000					
92.000	-1.800E-11	0.002530	-8.248E-05	0.000	0.000	6.683E+10	
1.291E-06	860323.	0.000					
93.000	-2.085E-11	0.001634	-6.575E-05	0.000	0.000	6.683E+10	
1.497E-06	861532.	0.000					
94.000	-2.017E-11	0.000952	-4.807E-05	0.000	0.000	6.683E+10	
1.450E-06	862742.	0.000					
95.000	-1.744E-11	0.000479	-3.183E-05	0.000	0.000	6.683E+10	
1.256E-06	863952.	0.000					
96.000	-1.369E-11	0.000186	-1.838E-05	0.000	0.000	6.683E+10	
9.867E-07	865161.	0.000					
97.000	-9.526E-12	3.476E-05	-8.331E-06	0.000	0.000	6.683E+10	
6.878E-07	866371.	0.000					
98.000	-5.291E-12	-1.736E-05	-1.909E-06	0.000	0.000	6.683E+10	
3.826E-07	867581.	0.000					
99.000	-1.094E-12	-1.439E-05	8.612E-07	0.000	0.000	6.683E+10	
7.921E-08	868790.	0.000					
100.000	3.072E-12	0.000	0.000	0.000	0.000	6.683E+10	
-2.227E-07	435000.	0.000					

* 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	=	0.1787725 inches
Computed slope at pile head	=	-0.0016839 radians
Maximum bending moment	=	724317. inch-lbs
Maximum shear force	=	15000. lbs
Depth of maximum bending moment	=	6.000000 feet below pile head
Depth of maximum shear force	=	0.000000 feet below pile head
Number of iterations	=	12
Number of zero deflection points	=	8

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	24000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	385000.0 lbs

Depth Res.	Soil	Deflect. Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
X		y	Moment	lbs	radians	psi *	lb-in ²	lb/in
feet		inches	in-lbs					
lb/inch		lb/inch						

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0.000	0.00	0.3628	1.0000	24000.	-0.003190	0.000	6.702E+10
-169.5332	1.000	0.3245	0.000	302738.	22983.	-0.003163	0.000
-247.2177	2.000	6268.6085	0.000	580813.	20482.	-0.003084	0.000
-309.8132	3.000	0.2869	0.000	822807.	17140.	-0.002958	0.000
-353.6802	4.000	10340.	0.000	1019508.	13159.	-0.002793	0.000
-386.9503	5.000	0.2159	0.000	1164434.	8715.3666	-0.002597	0.000
-409.7225	6.000	19657.	0.000	1252676.	3935.3297	-0.002381	0.000
-139.0725	7.000	0.1835	0.000	1280879.	642.5598	-0.002154	0.000
-150.5172	8.000	0.1264	0.000	1287996.	-1094.9786	-0.001923	0.000
-145.1007	9.000	13207.	0.000	1272370.	-2868.6863	-0.001694	0.000
-130.4944	10.000	0.1019	0.000	1234797.	-4522.2571	-0.001469	0.000
-102.8328	11.000	21710.	0.000	1177409.	-5922.2204	-0.001253	0.000
-85.2239	12.000	0.0802	0.000	1104238.	-7050.5603	-0.001048	0.000
-60.0302	13.000	27453.	0.000	1017881.	-7922.0849	-0.000858	0.000
-35.2964	14.000	0.0312	0.000	922036.	-8494.0446	-0.000684	0.000
-12.2419	15.000	32796.	0.000	820346.	-8779.2743	-0.000528	0.000
8.2105	16.000	0.0449	0.000	716215.	-8803.4626	-0.000391	0.000
25.4225	17.000	27453.	0.000	612673.	-8601.6642	-0.000272	0.000
39.0185	18.000	0.0612	0.000	512285.	-8215.0181	-0.000171	0.000
48.8567	19.000	47196.	0.000	417092.	-7687.7670	-8.778E-05	0.000
54.9967	20.000	-0.006006	0.000	328590.	-7064.6465	-2.104E-05	0.000
57.6654	21.000	50796.	0.000	247735.	-6388.6739	3.054E-05	0.000
57.2230	22.000	-0.008608	0.000	174979.	-5699.3438	6.838E-05	0.000
54.1335	23.000	54396.	0.000	110319.	-5031.2051	9.391E-05	0.000
48.9379	24.000	-0.0101	0.000	53363.	-4412.7768	0.000109	0.000
42.2346	25.000	57996.	0.000	3409.2424	-3865.7417	0.000114	0.000
82.3833	26.000	-0.0107	0.000	-40465.	-3118.0341	0.000110	0.000
93.6850	27.000	61596.	0.000	-72443.	-2061.6242	0.000100	0.000
88.0241	28.000	-0.0106	0.000	-90870.	-971.3696	8.560E-05	0.000
71.0802	29.000	65196.	0.000	-96547.	-16.7441	6.882E-05	0.000
48.5394	30.000	-0.009981	0.000	-91908.	700.9735	5.195E-05	0.000
	31.000	68796.	0.000	-80204.	1143.4939	3.654E-05	0.000
		-0.008973	0.000				
		72396.	0.000				
		-0.007727	0.000				
		75996.	0.000				
		-0.006367	0.000				
		79596.	0.000				
		-0.005000	0.000				
		197723.	0.000				
		-0.003719	0.000				
		302255.	0.000				
		-0.002595	0.000				
		407110.	0.000				
		-0.001665	0.000				
		512287.	0.000				
		-0.000943	0.000				
		617787.	0.000				
		-0.000418	0.000				

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25. 2140	723610.	0. 000					
	32. 000	-6. 576E-05	-64802.	1320. 6795	2. 356E-05	0. 000	6. 702E+10
4. 3170	787742.	0. 000					
	33. 000	0. 000147	-48725.	1288. 4447	1. 340E-05	0. 000	6. 702E+10
-9. 6894	788952.	0. 000					
	34. 000	0. 000256	-34003.	1129. 2367	5. 993E-06	0. 000	6. 702E+10
-16. 8452	790161.	0. 000					
	35. 000	0. 000291	-21679.	912. 9370	1. 008E-06	0. 000	6. 702E+10
-19. 2047	791371.	0. 000					
	36. 000	0. 000280	-12102.	686. 7391	-2. 016E-06	0. 000	6. 702E+10
-18. 4949	792581.	0. 000					
	37. 000	0. 000243	-5178. 2817	479. 3930	-3. 563E-06	0. 000	6. 702E+10
-16. 0628	793790.	0. 000					
	38. 000	0. 000195	-563. 4828	305. 7000	-4. 077E-06	0. 000	6. 702E+10
-12. 8861	795000.	0. 000					
	39. 000	0. 000145	2196. 1909	170. 6682	-3. 931E-06	0. 000	6. 702E+10
-9. 6192	796210.	0. 000					
	40. 000	0. 000100	3568. 8768	73. 0166	-3. 415E-06	0. 000	6. 702E+10
-6. 6560	797419.	0. 000					
	41. 000	6. 302E-05	3980. 1429	7. 9158	-2. 739E-06	0. 000	6. 702E+10
-4. 1941	798629.	0. 000					
	42. 000	3. 443E-05	3784. 1655	-31. 0170	-2. 044E-06	0. 000	6. 702E+10
-2. 2947	799839.	0. 000					
	43. 000	1. 397E-05	3254. 6202	-50. 3791	-1. 414E-06	0. 000	6. 702E+10
-0. 9323	801048.	0. 000					
	44. 000	4. 979E-07	2588. 1312	-56. 1726	-8. 907E-07	0. 000	6. 702E+10
-0. 0333	802258.	0. 000					
	45. 000	-7. 410E-06	1914. 7079	-53. 3956	-4. 875E-07	0. 000	6. 702E+10
0. 4961	803468.	0. 000					
	46. 000	-1. 120E-05	1311. 1404	-45. 9116	-1. 987E-07	0. 000	6. 702E+10
0. 7512	804677.	0. 000					
	47. 000	-1. 218E-05	814. 6651	-36. 4967	-8. 421E-09	0. 000	6. 702E+10
0. 8179	805887.	0. 000					
	48. 000	-1. 141E-05	435. 2963	-26. 9867	1. 035E-07	0. 000	6. 702E+10
0. 7671	807097.	0. 000					
	49. 000	-9. 696E-06	166. 0269	-18. 4658	1. 573E-07	0. 000	6. 702E+10
0. 6531	808306.	0. 000					
	50. 000	-7. 629E-06	-9. 3359	-11. 4592	1. 713E-07	0. 000	6. 702E+10
0. 5147	809516.	0. 000					
	51. 000	-5. 583E-06	-110. 5774	-6. 1079	1. 606E-07	0. 000	6. 702E+10
0. 3772	810726.	0. 000					
	52. 000	-3. 775E-06	-157. 4093	-2. 3122	1. 366E-07	0. 000	6. 702E+10
0. 2554	811935.	0. 000					
	53. 000	-2. 304E-06	-167. 3327	0. 1572	1. 075E-07	0. 000	6. 702E+10
0. 1562	813145.	0. 000					
	54. 000	-1. 194E-06	-154. 6313	1. 5801	7. 872E-08	0. 000	6. 702E+10
0. 0810	814355.	0. 000					
	55. 000	-4. 151E-07	-130. 1371	2. 2355	5. 323E-08	0. 000	6. 702E+10
0. 0282	815565.	0. 000					
	56. 000	8. 377E-08	-101. 4722	2. 3705	3. 249E-08	0. 000	6. 702E+10
-0. 005701	816774.	0. 000					
	57. 000	3. 647E-07	-73. 5444	2. 1872	1. 682E-08	0. 000	6. 702E+10
-0. 0249	817984.	0. 000					
	58. 000	4. 875E-07	-49. 1352	1. 8384	5. 840E-09	0. 000	6. 702E+10
-0. 0333	819194.	0. 000					
	59. 000	5. 048E-07	-29. 4778	1. 4316	-1. 198E-09	0. 000	6. 702E+10
-0. 0345	820403.	0. 000					
	60. 000	4. 588E-07	-14. 7659	1. 0360	-5. 159E-09	0. 000	6. 702E+10
-0. 0314	821613.	0. 000					
	61. 000	3. 810E-07	-4. 5651	0. 6908	-6. 889E-09	0. 000	6. 702E+10
-0. 0261	822823.	0. 000					
	62. 000	2. 934E-07	1. 8776	0. 4132	-7. 130E-09	0. 000	6. 702E+10
-0. 0201	824032.	0. 000					

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63.000	2.099E-07	5.4171	0.2057	-6.477E-09	0.000	6.702E+10
-0.0144	825242.	0.000				
64.000	1.380E-07	6.8736	0.0620	-5.377E-09	0.000	6.702E+10
-0.009503	826452.	0.000				
65.000	8.085E-08	6.9559	-0.0284	-4.138E-09	0.000	6.702E+10
-0.005577	827661.	0.000				
66.000	3.866E-08	6.2295	-0.0779	-2.958E-09	0.000	6.702E+10
-0.002671	828871.	0.000				
67.000	9.860E-09	5.1134	-0.0980	-1.943E-09	0.000	6.702E+10
-0.000682	830081.	0.000				
68.000	-7.957E-09	3.8948	-0.0988	-1.136E-09	0.000	6.702E+10
0.000551	831290.	0.000				
69.000	-1.741E-08	2.7523	-0.0883	-5.410E-10	0.000	6.702E+10
0.001207	832500.	0.000				
70.000	-2.094E-08	1.7815	-0.0723	-1.351E-10	0.000	6.702E+10
0.001455	833710.	0.000				
71.000	-2.065E-08	1.0186	-0.0549	1.156E-10	0.000	6.702E+10
0.001437	834919.	0.000				
72.000	-1.817E-08	0.4618	-0.0387	2.481E-10	0.000	6.702E+10
0.001266	836129.	0.000				
73.000	-1.469E-08	0.0869	-0.0250	2.973E-10	0.000	6.702E+10
0.001025	837339.	0.000				
74.000	-1.103E-08	-0.1404	-0.0142	2.925E-10	0.000	6.702E+10
0.000771	838548.	0.000				
75.000	-7.673E-09	-0.2567	-0.006356	2.569E-10	0.000	6.702E+10
0.000537	839758.	0.000				
76.000	-4.866E-09	-0.2953	-0.001088	2.075E-10	0.000	6.702E+10
0.000341	840968.	0.000				
77.000	-2.693E-09	-0.2847	0.002092	1.556E-10	0.000	6.702E+10
0.000189	842177.	0.000				
78.000	-1.132E-09	-0.2466	0.003703	1.080E-10	0.000	6.702E+10
7.956E-05	843387.	0.000				
79.000	-1.008E-10	-0.1968	0.004223	6.832E-11	0.000	6.702E+10
7.094E-06	844597.	0.000				
80.000	5.076E-10	-0.1458	0.004051	3.764E-11	0.000	6.702E+10
-3.578E-05	845806.	0.000				
81.000	8.026E-10	-0.0999	0.003497	1.564E-11	0.000	6.702E+10
-5.665E-05	847016.	0.000				
82.000	8.830E-10	-0.0621	0.002782	1.137E-12	0.000	6.702E+10
-6.241E-05	848226.	0.000				
83.000	8.299E-10	-0.0332	0.002055	-7.389E-12	0.000	6.702E+10
-5.875E-05	849435.	0.000				
84.000	7.056E-10	-0.0127	0.001403	-1.149E-11	0.000	6.702E+10
-5.002E-05	850645.	0.000				
85.000	5.541E-10	0.000606	0.000866	-1.257E-11	0.000	6.702E+10
-3.933E-05	851855.	0.000				
86.000	4.038E-10	0.008229	0.000458	-1.178E-11	0.000	6.702E+10
-2.871E-05	853065.	0.000				
87.000	2.713E-10	0.0117	0.000170	-9.999E-12	0.000	6.702E+10
-1.931E-05	854274.	0.000				
88.000	1.639E-10	0.0124	-1.583E-05	-7.840E-12	0.000	6.702E+10
-1.168E-05	855484.	0.000				
89.000	8.311E-11	0.0114	-0.000122	-5.708E-12	0.000	6.702E+10
-5.933E-06	856694.	0.000				
90.000	2.686E-11	0.009541	-0.000169	-3.833E-12	0.000	6.702E+10
-1.920E-06	857903.	0.000				
91.000	-8.883E-12	0.007393	-0.000176	-2.317E-12	0.000	6.702E+10
6.360E-07	859113.	0.000				
92.000	-2.874E-11	0.005330	-0.000160	-1.178E-12	0.000	6.702E+10
2.061E-06	860323.	0.000				
93.000	-3.715E-11	0.003560	-0.000132	0.000	0.000	6.702E+10
2.667E-06	861532.	0.000				
94.000	-3.791E-11	0.002171	-9.944E-05	0.000	0.000	6.702E+10

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2. 725E-06	862742.	0. 000					
95. 000	-3. 400E-11	0. 001172	-6. 840E-05	0. 000	0. 000	6. 702E+10	
2. 448E-06	863952.	0. 000					
96. 000	-2. 757E-11	0. 000525	-4. 179E-05	0. 000	0. 000	6. 702E+10	
1. 988E-06	865161.	0. 000					
97. 000	-2. 002E-11	0. 000164	-2. 119E-05	0. 000	0. 000	6. 702E+10	
1. 445E-06	866371.	0. 000					
98. 000	-1. 211E-11	1. 084E-05	-7. 265E-06	0. 000	0. 000	6. 702E+10	
8. 755E-07	867581.	0. 000					
99. 000	-4. 178E-12	-1. 637E-05	-1. 976E-07	0. 000	0. 000	6. 702E+10	
3. 025E-07	868790.	0. 000					
100. 000	3. 718E-12	0. 000	0. 000	0. 000	0. 000	6. 702E+10	
-2. 695E-07	435000.	0. 000					

* This analysis computed pile response using nonlinear moment-curvature relationship.

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	=	0. 3628164 inches
Computed slope at pile head	=	-0. 0031899 radians
Maximum bending moment	=	1287996. inch-lbs
Maximum shear force	=	24000. lbs
Depth of maximum bending moment	=	8. 0000000 feet below pile head
Depth of maximum shear force	=	0. 0000000 feet below pile head
Number of iterations	=	15
Number of zero deflection points	=	8

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	19000. 0 lbs
Applied moment at pile head	=	1. 0 in-lbs
Axial thrust load on pile head	=	171000. 0 lbs

Depth Res.	Soil X	Deflect. Spr. y	Bending Distrib. Load	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	Lat. inches	in-lbs	lbs	radians	psi *	lb-in^2	lb/in
	lb/inch	lb/inch						
0. 000	0. 00	0. 2407	1. 0000	19000.	-0. 002160	0. 000	7. 104E+10	
1. 000	0. 000	0. 2148	232433.	18094.	-0. 002140	0. 000	7. 104E+10	
-151. 0055	8437. 5261	0. 1893	0. 000	15943.	-0. 002083	0. 000	7. 104E+10	
-207. 4588	2. 000	13150.	443040.					
	-207. 4588		0. 000					

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	3.000	0.1648	623619.	13191.	-0.001993	0.000	7.102E+10
-251.	2520	18299.	0.000				
	4.000	0.1415	767801.	9965.6008	-0.001875	0.000	7.096E+10
-286.	3006	24283.	0.000				
	5.000	0.1198	870490.	6372.1792	-0.001737	0.000	7.089E+10
-312.	6030	31324.	0.000				
	6.000	0.0998	927862.	2514.8700	-0.001585	0.000	7.083E+10
-330.	2819	39714.	0.000				
	7.000	0.0817	937350.	-71.4094	-0.001427	0.000	7.082E+10
-100.	7647	14796.	0.000				
	8.000	0.0656	932003.	-1278.9968	-0.001268	0.000	7.083E+10
-100.	4999	18396.	0.000				
	9.000	0.0513	911859.	-2446.0477	-0.001112	0.000	7.085E+10
-94.	0086	21996.	0.000				
	10.000	0.0389	877861.	-3507.5450	-0.000961	0.000	7.088E+10
-82.	9076	25596.	0.000				
	11.000	0.0282	831620.	-4417.1605	-0.000816	0.000	7.092E+10
-68.	6949	29196.	0.000				
	12.000	0.0193	775198.	-5145.6299	-0.000680	0.000	7.096E+10
-52.	7166	32796.	0.000				
	13.000	0.0119	710915.	-5678.7836	-0.000554	0.000	7.099E+10
-36.	1423	36396.	0.000				
	14.000	0.005986	641182.	-6015.3415	-0.000440	0.000	7.101E+10
-19.	9507	39996.	0.000				
	15.000	0.001355	568353.	-6164.5895	-0.000338	0.000	7.103E+10
-4.	9240	43596.	0.000				
	16.000	-0.002123	494618.	-6144.0385	-0.000248	0.000	7.104E+10
8.	3492	47196.	0.000				
	17.000	-0.004598	421914.	-5977.1529	-0.000171	0.000	7.104E+10
19.	4651	50796.	0.000				
	18.000	-0.006219	351867.	-5691.2245	-0.000105	0.000	7.104E+10
28.	1896	54396.	0.000				
	19.000	-0.007126	285757.	-5315.4497	-5.146E-05	0.000	7.105E+10
34.	4395	57996.	0.000				
	20.000	-0.007454	224507.	-4879.2489	-8.369E-06	0.000	7.105E+10
38.	2606	61596.	0.000				
	21.000	-0.007327	168689.	-4410.8473	2.484E-05	0.000	7.105E+10
39.	8063	65196.	0.000				
	22.000	-0.006858	118545.	-3936.1161	4.910E-05	0.000	7.104E+10
39.	3156	68796.	0.000				
	23.000	-0.006149	74021.	-3477.6602	6.536E-05	0.000	7.104E+10
37.	0938	72396.	0.000				
	24.000	-0.005289	34813.	-3054.1206	7.455E-05	0.000	7.104E+10
33.	4962	75996.	0.000				
	25.000	-0.004359	416.2614	-2679.6541	7.753E-05	0.000	7.104E+10
28.	9149	79596.	0.000				
	26.000	-0.003429	-29817.	-2167.2165	7.504E-05	0.000	7.104E+10
56.	4914	197723.	0.000				
	27.000	-0.002558	-51905.	-1441.6515	6.814E-05	0.000	7.104E+10
64.	4361	302255.	0.000				
	28.000	-0.001793	-64696.	-690.0353	5.829E-05	0.000	7.104E+10
60.	8332	407110.	0.000				
	29.000	-0.001159	-68705.	-28.1207	4.703E-05	0.000	7.104E+10
49.	4859	512287.	0.000				
	30.000	-0.000664	-65564.	474.0521	3.569E-05	0.000	7.104E+10
34.	2096	617787.	0.000				
	31.000	-0.000303	-57474.	788.8320	2.529E-05	0.000	7.104E+10
18.	2537	723610.	0.000				
	32.000	-5.743E-05	-46736.	920.9753	1.649E-05	0.000	7.104E+10
3.	7701	787742.	0.000				
	33.000	9.311E-05	-35438.	906.8660	9.552E-06	0.000	7.104E+10
-6.	1217	788952.	0.000				
	34.000	0.000172	-25010.	802.2534	4.447E-06	0.000	7.104E+10

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-11.3138	790161.	0.000					
35.000	0.000200	-16203.	655.3007	9.658E-07	0.000	7.104E+10	
-13.1784	791371.	0.000					
36.000	0.000195	-9287.0566	498.9545	-1.187E-06	0.000	7.104E+10	
-12.8793	792581.	0.000					
37.000	0.000171	-4222.8703	353.6739	-2.328E-06	0.000	7.104E+10	
-11.3341	793790.	0.000					
38.000	0.000139	-789.3292	230.3675	-2.751E-06	0.000	7.104E+10	
-9.2170	795000.	0.000					
39.000	0.000105	1317.2422	133.1426	-2.707E-06	0.000	7.104E+10	
-6.9872	796210.	0.000					
40.000	7.416E-05	2417.2019	61.6513	-2.391E-06	0.000	7.104E+10	
-4.9280	797419.	0.000					
41.000	4.791E-05	2806.6881	12.9511	-1.950E-06	0.000	7.104E+10	
-3.1887	798629.	0.000					
42.000	2.735E-05	2736.0326	-17.1203	-1.482E-06	0.000	7.104E+10	
-1.8232	799839.	0.000					
43.000	1.234E-05	2401.8828	-33.0030	-1.048E-06	0.000	7.104E+10	
-0.8239	801048.	0.000					
44.000	2.199E-06	1948.2623	-38.8282	-6.807E-07	0.000	7.104E+10	
-0.1470	802258.	0.000					
45.000	-3.996E-06	1472.8004	-38.1049	-3.918E-07	0.000	7.104E+10	
0.2675	803468.	0.000					
46.000	-7.204E-06	1035.3518	-33.6012	-1.799E-07	0.000	7.104E+10	
0.4831	804677.	0.000					
47.000	-8.314E-06	667.1101	-27.3524	-3.616E-08	0.000	7.104E+10	
0.5584	805887.	0.000					
48.000	-8.072E-06	379.0424	-20.7447	5.220E-08	0.000	7.104E+10	
0.5429	807097.	0.000					
49.000	-7.062E-06	169.0233	-14.6332	9.849E-08	0.000	7.104E+10	
0.4757	808306.	0.000					
50.000	-5.708E-06	27.4408	-9.4687	1.151E-07	0.000	7.104E+10	
0.3851	809516.	0.000					
51.000	-4.300E-06	-58.6985	-5.4153	1.124E-07	0.000	7.104E+10	
0.2905	810726.	0.000					
52.000	-3.010E-06	-102.9876	-2.4505	9.879E-08	0.000	7.104E+10	
0.2036	811935.	0.000					
53.000	-1.929E-06	-117.9156	-0.4444	8.013E-08	0.000	7.104E+10	
0.1307	813145.	0.000					
54.000	-1.087E-06	-113.9823	0.7823	6.054E-08	0.000	7.104E+10	
0.0737	814355.	0.000					
55.000	-4.758E-07	-99.3894	1.4188	4.252E-08	0.000	7.104E+10	
0.0323	815565.	0.000					
56.000	-6.625E-08	-80.1059	1.6398	2.736E-08	0.000	7.104E+10	
0.004509	816774.	0.000					
57.000	1.809E-07	-60.1453	1.5929	1.551E-08	0.000	7.104E+10	
-0.0123	817984.	0.000					
58.000	3.061E-07	-41.9394	1.3936	6.893E-09	0.000	7.104E+10	
-0.0209	819194.	0.000					
59.000	3.463E-07	-26.7281	1.1261	1.093E-09	0.000	7.104E+10	
-0.0237	820403.	0.000					
60.000	3.323E-07	-14.9169	0.8475	-2.424E-09	0.000	7.104E+10	
-0.0228	821613.	0.000					
61.000	2.881E-07	-6.3772	0.5925	-4.223E-09	0.000	7.104E+10	
-0.0198	822823.	0.000					
62.000	2.310E-07	-0.6803	0.3788	-4.819E-09	0.000	7.104E+10	
-0.0159	824032.	0.000					
63.000	1.725E-07	2.7327	0.2124	-4.645E-09	0.000	7.104E+10	
-0.0119	825242.	0.000					
64.000	1.195E-07	4.4366	0.0919	-4.040E-09	0.000	7.104E+10	
-0.008231	826452.	0.000					
65.000	7.553E-08	4.9538	0.0112	-3.247E-09	0.000	7.104E+10	
-0.005209	827661.	0.000					

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66.000	4.158E-08	4.7191	-0.0373	-2.430E-09	0.000	7.104E+10
-0.002872	828871.	0.000				
67.000	1.721E-08	4.0692	-0.0616	-1.688E-09	0.000	7.104E+10
-0.001190	830081.	0.000				
68.000	1.083E-09	3.2465	-0.0692	-1.070E-09	0.000	7.104E+10
-7.505E-05	831290.	0.000				
69.000	-8.462E-09	2.4118	-0.0662	-5.918E-10	0.000	7.104E+10
0.000587	832500.	0.000				
70.000	-1.312E-08	1.6608	-0.0572	-2.478E-10	0.000	7.104E+10
0.000911	833710.	0.000				
71.000	-1.441E-08	1.0405	-0.0457	-1.963E-11	0.000	7.104E+10
0.001003	834919.	0.000				
72.000	-1.359E-08	0.5643	-0.0340	1.159E-10	0.000	7.104E+10
0.000947	836129.	0.000				
73.000	-1.163E-08	0.2241	-0.0234	1.825E-10	0.000	7.104E+10
0.000811	837339.	0.000				
74.000	-9.210E-09	0.000738	-0.0147	2.015E-10	0.000	7.104E+10
0.000644	838548.	0.000				
75.000	-6.791E-09	-0.1300	-0.008006	1.906E-10	0.000	7.104E+10
0.000475	839758.	0.000				
76.000	-4.636E-09	-0.1922	-0.003205	1.634E-10	0.000	7.104E+10
0.000325	840968.	0.000				
77.000	-2.871E-09	-0.2076	-4.679E-05	1.296E-10	0.000	7.104E+10
0.000201	842177.	0.000				
78.000	-1.526E-09	-0.1938	0.001805	9.570E-11	0.000	7.104E+10
0.000107	843387.	0.000				
79.000	-5.737E-10	-0.1646	0.002691	6.543E-11	0.000	7.104E+10
4.038E-05	844597.	0.000				
80.000	4.456E-11	-0.1295	0.002914	4.058E-11	0.000	7.104E+10
-3.140E-06	845806.	0.000				
81.000	4.003E-10	-0.0948	0.002726	2.163E-11	0.000	7.104E+10
-2.825E-05	847016.	0.000				
82.000	5.637E-10	-0.0642	0.002317	8.201E-12	0.000	7.104E+10
-3.985E-05	848226.	0.000				
83.000	5.971E-10	-0.0393	0.001825	0.000	0.000	7.104E+10
-4.227E-05	849435.	0.000				
84.000	5.509E-10	-0.0204	0.001337	-5.574E-12	0.000	7.104E+10
-3.905E-05	850645.	0.000				
85.000	4.633E-10	-0.007147	0.000905	-7.900E-12	0.000	7.104E+10
-3.289E-05	851855.	0.000				
86.000	3.613E-10	0.001365	0.000554	-8.389E-12	0.000	7.104E+10
-2.568E-05	853065.	0.000				
87.000	2.620E-10	0.006179	0.000288	-7.751E-12	0.000	7.104E+10
-1.865E-05	854274.	0.000				
88.000	1.752E-10	0.008305	0.000101	-6.528E-12	0.000	7.104E+10
-1.249E-05	855484.	0.000				
89.000	1.053E-10	0.008629	-1.910E-05	-5.098E-12	0.000	7.104E+10
-7.518E-06	856694.	0.000				
90.000	5.288E-11	0.007867	-8.689E-05	-3.705E-12	0.000	7.104E+10
-3.781E-06	857903.	0.000				
91.000	1.640E-11	0.006559	-0.000117	-2.486E-12	0.000	7.104E+10
-1.174E-06	859113.	0.000				
92.000	-6.786E-12	0.005078	-0.000121	-1.503E-12	0.000	7.104E+10
4.865E-07	860323.	0.000				
93.000	-1.968E-11	0.003667	-0.000109	0.000	0.000	7.104E+10
1.413E-06	861532.	0.000				
94.000	-2.514E-11	0.002457	-9.003E-05	0.000	0.000	7.104E+10
1.807E-06	862742.	0.000				
95.000	-2.562E-11	0.001507	-6.812E-05	0.000	0.000	7.104E+10
1.845E-06	863952.	0.000				
96.000	-2.305E-11	0.000822	-4.708E-05	0.000	0.000	7.104E+10
1.662E-06	865161.	0.000				
97.000	-1.881E-11	0.000376	-2.897E-05	0.000	0.000	7.104E+10

ABUT - Strength.Ip7o

1. 358E-06	866371.	0.000					
98.000	-1.380E-11	0.000125	-1.483E-05	0.000	0.000	7.104E+10	
9. 981E-07	867581.	0.000					
99.000	-8.550E-12	1.792E-05	-5.132E-06	0.000	0.000	7.104E+10	
6. 190E-07	868790.	0.000					
100.000	-3.259E-12	0.000	0.000	0.000	0.000	7.104E+10	
2. 363E-07	435000.	0.000					

* 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. 4:

Pile-head deflection	=	0.2406811 inches
Computed slope at pile head	=	-0.0021599 radians
Maximum bending moment	=	937350. inch-lbs
Maximum shear force	=	19000. lbs
Depth of maximum bending moment	=	7.0000000 feet below pile head
Depth of maximum shear force	=	0.0000000 feet below pile head
Number of iterations	=	12
Number of zero deflection points	=	8

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	23000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	185000.0 lbs

Depth Res.	Soil X	Deflect. Spr. y	Bending Distrib. Load	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
feet	Es*h	inches	in-lbs	lbs	radians	psi *	lb-in ²	lb/in
lb/inch	lb/inch	lb/inch						
0.00	0.3422	1.0000	23000.	-0.003089	0.000	7.078E+10		
0.000	0.000	0.000						
1.000	0.3051	282859.	21997.	-0.003065	0.000	7.078E+10		
-167.0949	6572.4091	0.000						
2.000	0.2686	541548.	19545.	-0.002995	0.000	7.078E+10		
-241.6309	10795.	0.000						
3.000	0.2332	765239.	16302.	-0.002884	0.000	7.073E+10		
-298.9058	15381.	0.000						
4.000	0.1994	945600.	12469.	-0.002739	0.000	7.061E+10		
-339.8537	20456.	0.000						
5.000	0.1675	1076664.	8212.2524	-0.002567	0.000	7.048E+10		
-369.6541	26489.	0.000						

ABUT - Strength.lp7o

6.000	0.1378	1154092.	3666.1143	-0.002338	0.000	5.044E+10
-388.0356	33802.	0.000				
7.000	0.1113	1175032.	537.5076	-0.002058	0.000	4.952E+10
-133.3989	14377.	0.000				
8.000	0.0884	1176132.	-1075.5212	-0.001773	0.000	4.947E+10
-135.4392	18396.	0.000				
9.000	0.0688	1157094.	-2644.5953	-0.001493	0.000	5.029E+10
-126.0731	21996.	0.000				
10.000	0.0525	1119289.	-4073.2266	-0.001259	0.000	7.043E+10
-112.0321	25596.	0.000				
11.000	0.0386	1064928.	-5308.2474	-0.001073	0.000	7.049E+10
-93.8047	29196.	0.000				
12.000	0.0268	996657.	-6309.9246	-0.000898	0.000	7.056E+10
-73.1415	32796.	0.000				
13.000	0.0170	917477.	-7058.2019	-0.000735	0.000	7.063E+10
-51.5714	36396.	0.000				
14.000	0.009115	830525.	-7549.9118	-0.000587	0.000	7.069E+10
-30.3802	39996.	0.000				
15.000	0.002918	738885.	-7795.8062	-0.000454	0.000	7.074E+10
-10.6022	43596.	0.000				
16.000	-0.001774	645440.	-7817.5493	-0.000336	0.000	7.077E+10
6.9783	47196.	0.000				
17.000	-0.005154	552757.	-7644.7909	-0.000235	0.000	7.078E+10
21.8148	50796.	0.000				
18.000	-0.007408	463008.	-7312.4167	-0.000149	0.000	7.078E+10
33.5809	54396.	0.000				
19.000	-0.008721	377919.	-6858.0462	-7.736E-05	0.000	7.079E+10
42.1475	57996.	0.000				
20.000	-0.009265	298758.	-6319.8280	-2.000E-05	0.000	7.079E+10
47.5555	61596.	0.000				
21.000	-0.009201	226332.	-5734.5663	2.450E-05	0.000	7.079E+10
49.9881	65196.	0.000				
22.000	-0.008677	161020.	-5136.1803	5.733E-05	0.000	7.079E+10
49.7429	68796.	0.000				
23.000	-0.007825	102809.	-4554.4804	7.970E-05	0.000	7.079E+10
47.2071	72396.	0.000				
24.000	-0.006764	51358.	-4014.2237	9.276E-05	0.000	7.078E+10
42.8357	75996.	0.000				
25.000	-0.005599	6056.0413	-3534.4014	9.763E-05	0.000	7.078E+10
37.1347	79596.	0.000				
26.000	-0.004421	-33901.	-2874.5505	9.527E-05	0.000	7.078E+10
72.8404	197723.	0.000				
27.000	-0.003312	-63356.	-1936.9740	8.703E-05	0.000	7.078E+10
83.4223	302255.	0.000				
28.000	-0.002332	-80775.	-961.7252	7.481E-05	0.000	7.078E+10
79.1191	407110.	0.000				
29.000	-0.001517	-86770.	-98.5503	6.061E-05	0.000	7.078E+10
64.7434	512287.	0.000				
30.000	-0.000878	-83409.	560.9774	4.618E-05	0.000	7.078E+10
45.1779	617787.	0.000				
31.000	-0.000408	-73511.	979.7337	3.288E-05	0.000	7.078E+10
24.6148	723610.	0.000				
32.000	-8.841E-05	-60041.	1162.2433	2.156E-05	0.000	7.078E+10
5.8035	787742.	0.000				
33.000	0.000109	-45713.	1153.9714	1.260E-05	0.000	7.078E+10
-7.1821	788952.	0.000				
34.000	0.000214	-32402.	1026.3750	5.974E-06	0.000	7.078E+10
-14.0839	790161.	0.000				
35.000	0.000253	-21107.	841.9130	1.438E-06	0.000	7.078E+10
-16.6597	791371.	0.000				
36.000	0.000248	-12203.	643.5109	-1.385E-06	0.000	7.078E+10
-16.4073	792581.	0.000				
37.000	0.000219	-5656.3257	457.9959	-2.899E-06	0.000	7.078E+10

ABUT - Strength.lp7o

-14.5119	793790.	0.000					
38.000	0.000179	-1197.7305	299.8350	-3.480E-06	0.000	7.078E+10	
-11.8483	795000.	0.000					
39.000	0.000136	1555.1654	174.6566	-3.449E-06	0.000	7.078E+10	
-9.0148	796210.	0.000					
40.000	9.605E-05	3009.3437	82.2702	-3.063E-06	0.000	7.078E+10	
-6.3829	797419.	0.000					
41.000	6.236E-05	3543.2480	19.0699	-2.507E-06	0.000	7.078E+10	
-4.1505	798629.	0.000					
42.000	3.588E-05	3478.1526	-20.1828	-1.912E-06	0.000	7.078E+10	
-2.3917	799839.	0.000					
43.000	1.648E-05	3067.3494	-41.1319	-1.357E-06	0.000	7.078E+10	
-1.0999	801048.	0.000					
44.000	3.311E-06	2497.0123	-49.0590	-8.855E-07	0.000	7.078E+10	
-0.2213	802258.	0.000					
45.000	-4.775E-06	1893.8638	-48.4687	-5.133E-07	0.000	7.078E+10	
0.3197	803468.	0.000					
46.000	-9.008E-06	1336.0431	-42.9260	-2.395E-07	0.000	7.078E+10	
0.6041	804677.	0.000					
47.000	-1.052E-05	864.7039	-35.0614	-5.295E-08	0.000	7.078E+10	
0.7067	805887.	0.000					
48.000	-1.028E-05	494.8049	-26.6731	6.229E-08	0.000	7.078E+10	
0.6913	807097.	0.000					
49.000	-9.028E-06	224.2735	-18.8762	1.232E-07	0.000	7.078E+10	
0.6081	808306.	0.000					
50.000	-7.321E-06	41.2285	-12.2641	1.457E-07	0.000	7.078E+10	
0.4939	809516.	0.000					
51.000	-5.530E-06	-70.7125	-7.0590	1.432E-07	0.000	7.078E+10	
0.3736	810726.	0.000					
52.000	-3.883E-06	-128.8244	-3.2408	1.263E-07	0.000	7.078E+10	
0.2627	811935.	0.000					
53.000	-2.498E-06	-149.0527	-0.6486	1.028E-07	0.000	7.078E+10	
0.1693	813145.	0.000					
54.000	-1.417E-06	-144.8475	0.9439	7.787E-08	0.000	7.078E+10	
0.0961	814355.	0.000					
55.000	-6.294E-07	-126.7453	1.7773	5.485E-08	0.000	7.078E+10	
0.0428	815565.	0.000					
56.000	-1.002E-07	-102.4353	2.0749	3.542E-08	0.000	7.078E+10	
0.006821	816774.	0.000					
57.000	2.206E-07	-77.1044	2.0256	2.020E-08	0.000	7.078E+10	
-0.0150	817984.	0.000					
58.000	3.846E-07	-53.9101	1.7779	9.095E-09	0.000	7.078E+10	
-0.0263	819194.	0.000					
59.000	4.389E-07	-34.4762	1.4403	1.603E-09	0.000	7.078E+10	
-0.0300	820403.	0.000					
60.000	4.231E-07	-19.3502	1.0865	-2.960E-09	0.000	7.078E+10	
-0.0290	821613.	0.000					
61.000	3.679E-07	-8.3879	0.7613	-5.311E-09	0.000	7.078E+10	
-0.0252	822823.	0.000					
62.000	2.956E-07	-1.0545	0.4882	-6.112E-09	0.000	7.078E+10	
-0.0203	824032.	0.000					
63.000	2.212E-07	3.3564	0.2752	-5.917E-09	0.000	7.078E+10	
-0.0152	825242.	0.000					
64.000	1.536E-07	5.5757	0.1204	-5.159E-09	0.000	7.078E+10	
-0.0106	826452.	0.000					
65.000	9.735E-08	6.2698	0.0167	-4.155E-09	0.000	7.078E+10	
-0.006714	827661.	0.000					
66.000	5.386E-08	5.9947	-0.0459	-3.116E-09	0.000	7.078E+10	
-0.003720	828871.	0.000					
67.000	2.257E-08	5.1817	-0.0776	-2.168E-09	0.000	7.078E+10	
-0.001561	830081.	0.000					
68.000	1.820E-09	4.1418	-0.0877	-1.378E-09	0.000	7.078E+10	
-0.000126	831290.	0.000					

ABUT - Strength.lp7o

69.000	-1.050E-08	3.0823	-0.0841	-7.656E-10	0.000	7.078E+10
0.000729	832500.	0.000				
70.000	-1.656E-08	2.1265	-0.0728	-3.241E-10	0.000	7.078E+10
0.001150	833710.	0.000				
71.000	-1.828E-08	1.3355	-0.0583	-3.067E-11	0.000	7.078E+10
0.001272	834919.	0.000				
72.000	-1.729E-08	0.7272	-0.0434	1.442E-10	0.000	7.078E+10
0.001205	836129.	0.000				
73.000	-1.482E-08	0.2921	-0.0300	2.306E-10	0.000	7.078E+10
0.001034	837339.	0.000				
74.000	-1.176E-08	0.005882	-0.0189	2.559E-10	0.000	7.078E+10
0.000822	838548.	0.000				
75.000	-8.681E-09	-0.1621	-0.0103	2.426E-10	0.000	7.078E+10
0.000607	839758.	0.000				
76.000	-5.934E-09	-0.2425	-0.004164	2.083E-10	0.000	7.078E+10
0.000416	840968.	0.000				
77.000	-3.681E-09	-0.2629	-0.000119	1.655E-10	0.000	7.078E+10
0.000258	842177.	0.000				
78.000	-1.963E-09	-0.2461	0.002259	1.223E-10	0.000	7.078E+10
0.000138	843387.	0.000				
79.000	-7.452E-10	-0.2093	0.003401	8.373E-11	0.000	7.078E+10
5.245E-05	844597.	0.000				
80.000	4.664E-11	-0.1648	0.003696	5.201E-11	0.000	7.078E+10
-3.288E-06	845806.	0.000				
81.000	5.031E-10	-0.1208	0.003463	2.780E-11	0.000	7.078E+10
-3.551E-05	847016.	0.000				
82.000	7.139E-10	-0.0818	0.002947	1.062E-11	0.000	7.078E+10
-5.046E-05	848226.	0.000				
83.000	7.581E-10	-0.0501	0.002323	0.000	0.000	7.078E+10
-5.366E-05	849435.	0.000				
84.000	7.004E-10	-0.0261	0.001703	-7.023E-12	0.000	7.078E+10
-4.965E-05	850645.	0.000				
85.000	5.895E-10	-0.009218	0.001154	-1.002E-11	0.000	7.078E+10
-4.185E-05	851855.	0.000				
86.000	4.600E-10	0.001638	0.000707	-1.066E-11	0.000	7.078E+10
-3.270E-05	853065.	0.000				
87.000	3.337E-10	0.007786	0.000368	-9.860E-12	0.000	7.078E+10
-2.376E-05	854274.	0.000				
88.000	2.233E-10	0.0105	0.000130	-8.310E-12	0.000	7.078E+10
-1.592E-05	855484.	0.000				
89.000	1.343E-10	0.0109	-2.332E-05	-6.492E-12	0.000	7.078E+10
-9.588E-06	856694.	0.000				
90.000	6.752E-11	0.009978	-0.000110	-4.719E-12	0.000	7.078E+10
-4.827E-06	857903.	0.000				
91.000	2.104E-11	0.008322	-0.000148	-3.168E-12	0.000	7.078E+10
-1.507E-06	859113.	0.000				
92.000	-8.504E-12	0.006445	-0.000153	-1.916E-12	0.000	7.078E+10
6.097E-07	860323.	0.000				
93.000	-2.494E-11	0.004654	-0.000139	0.000	0.000	7.078E+10
1.790E-06	861532.	0.000				
94.000	-3.191E-11	0.003118	-0.000114	0.000	0.000	7.078E+10
2.294E-06	862742.	0.000				
95.000	-3.253E-11	0.001912	-8.647E-05	0.000	0.000	7.078E+10
2.342E-06	863952.	0.000				
96.000	-2.926E-11	0.001043	-5.975E-05	0.000	0.000	7.078E+10
2.110E-06	865161.	0.000				
97.000	-2.388E-11	0.000477	-3.675E-05	0.000	0.000	7.078E+10
1.724E-06	866371.	0.000				
98.000	-1.752E-11	0.000158	-1.881E-05	0.000	0.000	7.078E+10
1.267E-06	867581.	0.000				
99.000	-1.084E-11	2.273E-05	-6.499E-06	0.000	0.000	7.078E+10
7.849E-07	868790.	0.000				
100.000	-4.115E-12	0.000	0.000	0.000	0.000	7.078E+10

ABUT - Strength.l p7o

2. 984E-07 435000. 0. 000

* 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. 5:

Pile-head deflection = 0. 3421532 inches
 Computed slope at pile head = -0. 0030891 radians
 Maximum bending moment = 1176132. inch-lbs
 Maximum shear force = 23000. lbs
 Depth of maximum bending moment = 8. 0000000 feet below pile head
 Depth of maximum shear force = 0. 0000000 feet below pile head
 Number of iterations = 44
 Number of zero deflection points = 8

 Summary of Pile Response(s)

Defi ni ti ons of Pi le-head Loadi ng Condi ti ons:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Case No.	Load Type No.	Pile-head		Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs
		Condition 1 V(lbs) or y(inches)	Condition 2 Pile-head in-lb, rad., or in-lb/rad. Rotation radians			
1	1	V = 23000.	M = 1. 0000	185000.	0. 34215319	
1176132.		23000.	-0. 00308908			
2	1	V = 15000.	M = 1. 0000	395000.	0. 17877251	
724317.		15000.	-0. 00168388			
3	1	V = 24000.	M = 1. 0000	385000.	0. 36281642	
1287996.		24000.	-0. 00318992			
4	1	V = 19000.	M = 1. 0000	171000.	0. 24068110	
937350.		19000.	-0. 00215986			
5	1	V = 23000.	M = 1. 0000	185000.	0. 34215319	
1176132.		23000.	-0. 00308908			

The analysis ended normally.

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LPIle Plus for Windows, Version 2013-07.007

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: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: ABUT - Servi ce - SCOUR.Ip7d
Name of output report file: ABUT - Servi ce - SCOUR.Ip7o
Name of plot output file: ABUT - Servi ce - SCOUR.Ip7p
Name of runtime message file: ABUT - Servi ce - SCOUR.Ip7r

Date and Time of Analysis

Date: February 25, 2021 Time: 12:39:53

Problem Title

Project Name: Bel ford ABUT - Servi ce

Job Number: 115360

Client:

Engi neer: JDJ

Description:

 Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

 Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 43.64 ft

Depth of ground surface below top of pile = 25.60 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	24.0000000
2	43.640000	24.0000000

Input Structural Properties:

Pile Section No. 1:

Section Type	=	Elastic Pile
Cross-sectional Shape	=	Circular
Section Length	=	43.64000 ft
Top Width	=	24.00000 in
Bottom Width	=	24.00000 in
Top Area	=	452.38934 Sq. in
Bottom Area	=	452.38934 Sq. in
Moment of Inertia at Top	=	16286. in ⁴
Moment of Inertia at Bottom	=	16286. in ⁴
Elastic Modulus	=	3865202. lbs/in ²

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 1 layers

Layer 1 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	25.60000 ft
Distance from top of pile to bottom of layer	=	100.00000 ft
Effective unit weight at top of layer	=	61.00000 pcf
Effective unit weight at bottom of layer	=	61.00000 pcf
Uniaxial compressive strength at top of layer	=	100.00000 psi
Uniaxial compressive strength at bottom of layer	=	120.00000 psi
Initial modulus of rock at top of layer	=	130.00000 psi
Initial modulus of rock at bottom of layer	=	145.00000 psi
RQD of rock at top of layer	=	10.00000 %
RQD of rock at bottom of layer	=	20.00000 %
k _{rm} of rock at top of layer	=	0.0000500
k _{rm} of rock at bottom of layer	=	0.0000500

(Depth of lowest soil layer extends 56.36 ft below pile tip)

Summary of Soil Properties

RQD % Layer or	Rock Mass Rock Emass	Layer Soil Type k _{rm}	Layer Depth	Effective Unit Wt.	Uniaxial qu
----------------------	-------------------------	---------------------------------------	----------------	-----------------------	----------------

Num. GSI	(p-y Curve Criteria)	ABUT - Service - SCOUR. I p7o	ft	pcf	psi
1	Weak Rock		25.600	61.000	100.000
10.000	130.000	5.00E-05			
20.000	145.000	5.00E-05	100.000	61.000	120.000

 Loading Type

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

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Compute Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 3000.00000 lbs	M = 1.00000 in-lbs	113000.
2	1	V = 3000.00000 lbs	M = 1.00000 in-lbs	186000.

V = perpendicular shear force applied to pile head
 M = bending moment applied to pile head
 y = lateral deflection relative to pile axis
 S = pile slope relative to original pile batter angle
 R = rotational stiffness applied to pile head
 Axial thrust is assumed to be acting axially for all pile batter angles.

 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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

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Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 3000.0 lbs
 Applied moment at pile head = 1.0 in-lbs
 Axial thrust load on pile head = 113000.0 lbs

Depth Res.	Soil X Es*h feet lb/inch	Deflect. Spr. y Lat. Load inches lb/inch	Bending Distri b. Moment in-lbs	Shear Force lbs	Slope S radi ans	Total Stress psi *	Bendi ng Sti ffness lb-in^2	Soil p lb/in
0.000	0.000	0.8468	1.0000	3000.0000	-0.003496	249.7856	6.295E+10	
0.000	0.436	0.8285	17780.	3000.0000	-0.003495	262.8857	6.295E+10	
0.000	0.873	0.8102	35558.	3000.0000	-0.003493	275.9852	6.295E+10	
0.000	1.309	0.7919	53335.	3000.0000	-0.003489	289.0833	6.295E+10	
0.000	1.746	0.7736	71108.	3000.0000	-0.003484	302.1796	6.295E+10	
0.000	2.182	0.7554	88879.	3000.0000	-0.003477	315.2732	6.295E+10	
0.000	2.618	0.7372	106645.	3000.0000	-0.003469	328.3637	6.295E+10	
0.000	3.055	0.7191	124405.	3000.0000	-0.003460	341.4502	6.295E+10	
0.000	3.491	0.7010	142160.	3000.0000	-0.003448	354.5323	6.295E+10	
0.000	3.928	0.6829	159907.	3000.0000	-0.003436	367.6092	6.295E+10	
0.000	4.364	0.6650	177647.	3000.0000	-0.003422	380.6803	6.295E+10	
0.000	4.800	0.6471	195378.	3000.0000	-0.003406	393.7450	6.295E+10	
0.000	5.237	0.6293	213099.	3000.0000	-0.003389	406.8025	6.295E+10	
0.000	5.673	0.6116	230810.	3000.0000	-0.003371	419.8524	6.295E+10	
0.000	6.110	0.5940	248510.	3000.0000	-0.003351	432.8938	6.295E+10	
0.000	6.546	0.5765	266197.	3000.0000	-0.003330	445.9263	6.295E+10	
0.000	6.982	0.5591	283871.	3000.0000	-0.003307	458.9491	6.295E+10	
0.000	7.419	0.5419	301531.	3000.0000	-0.003282	471.9616	6.295E+10	
0.000	7.855	0.5248	319176.	3000.0000	-0.003256	484.9631	6.295E+10	
0.000	8.292	0.5078	336806.	3000.0000	-0.003229	497.9531	6.295E+10	
0.000	8.728	0.4909	354419.	3000.0000	-0.003200	510.9309	6.295E+10	
0.000	9.164	0.4743	372015.	3000.0000	-0.003170	523.8958	6.295E+10	
0.000	9.601	0.4577	389592.	3000.0000	-0.003139	536.8472	6.295E+10	
0.000	10.037	0.4414	407150.	3000.0000	-0.003105	549.7845	6.295E+10	

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10.474	0.4252	424688.	3000.0000	-0.003071	562.7070	6.295E+10	0.000
0.000	0.000	0.000					
10.910	0.4092	442205.	3000.0000	-0.003035	575.6141	6.295E+10	0.000
0.000	0.000	0.000					
11.346	0.3934	459700.	3000.0000	-0.002997	588.5052	6.295E+10	0.000
0.000	0.000	0.000					
11.783	0.3778	477173.	3000.0000	-0.002958	601.3796	6.295E+10	0.000
0.000	0.000	0.000					
12.219	0.3624	494622.	3000.0000	-0.002918	614.2367	6.295E+10	0.000
0.000	0.000	0.000					
12.656	0.3473	512047.	3000.0000	-0.002876	627.0758	6.295E+10	0.000
0.000	0.000	0.000					
13.092	0.3323	529447.	3000.0000	-0.002833	639.8964	6.295E+10	0.000
0.000	0.000	0.000					
13.528	0.3176	546821.	3000.0000	-0.002788	652.6978	6.295E+10	0.000
0.000	0.000	0.000					
13.965	0.3031	564167.	3000.0000	-0.002742	665.4793	6.295E+10	0.000
0.000	0.000	0.000					
14.401	0.2889	581486.	3000.0000	-0.002694	678.2404	6.295E+10	0.000
0.000	0.000	0.000					
14.838	0.2749	598776.	3000.0000	-0.002645	690.9803	6.295E+10	0.000
0.000	0.000	0.000					
15.274	0.2612	616037.	3000.0000	-0.002594	703.6986	6.295E+10	0.000
0.000	0.000	0.000					
15.710	0.2477	633268.	3000.0000	-0.002542	716.3945	6.295E+10	0.000
0.000	0.000	0.000					
16.147	0.2346	650467.	3000.0000	-0.002489	729.0674	6.295E+10	0.000
0.000	0.000	0.000					
16.583	0.2217	667634.	3000.0000	-0.002434	741.7168	6.295E+10	0.000
0.000	0.000	0.000					
17.020	0.2091	684769.	3000.0000	-0.002378	754.3419	6.295E+10	0.000
0.000	0.000	0.000					
17.456	0.1968	701869.	3000.0000	-0.002320	766.9422	6.295E+10	0.000
0.000	0.000	0.000					
17.892	0.1848	718936.	3000.0000	-0.002261	779.5170	6.295E+10	0.000
0.000	0.000	0.000					
18.329	0.1731	735966.	3000.0000	-0.002201	792.0658	6.295E+10	0.000
0.000	0.000	0.000					
18.765	0.1617	752961.	3000.0000	-0.002139	804.5878	6.295E+10	0.000
0.000	0.000	0.000					
19.202	0.1507	769918.	3000.0000	-0.002075	817.0826	6.295E+10	0.000
0.000	0.000	0.000					
19.638	0.1400	786838.	3000.0000	-0.002011	829.5494	6.295E+10	0.000
0.000	0.000	0.000					
20.074	0.1296	803719.	3000.0000	-0.001944	841.9877	6.295E+10	0.000
0.000	0.000	0.000					
20.511	0.1196	820560.	3000.0000	-0.001877	854.3968	6.295E+10	0.000
0.000	0.000	0.000					
20.947	0.1100	837361.	3000.0000	-0.001808	866.7761	6.295E+10	0.000
0.000	0.000	0.000					
21.384	0.1007	854120.	3000.0000	-0.001738	879.1251	6.295E+10	0.000
0.000	0.000	0.000					
21.820	0.0918	870838.	3000.0000	-0.001666	891.4431	6.295E+10	0.000
0.000	0.000	0.000					
22.256	0.0832	887513.	3000.0000	-0.001593	903.7295	6.295E+10	0.000
0.000	0.000	0.000					
22.693	0.0751	904144.	3000.0000	-0.001518	915.9837	6.295E+10	0.000
0.000	0.000	0.000					
23.129	0.0673	920730.	3000.0000	-0.001442	928.2051	6.295E+10	0.000
0.000	0.000	0.000					
23.566	0.0600	937272.	3000.0000	-0.001365	940.3932	6.295E+10	0.000
0.000	0.000	0.000					
24.002	0.0530	953767.	3000.0000	-0.001286	952.5472	6.295E+10	0.000

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0.000	0.000	0.000					
24.438	0.0465	970215.	3000.0000	-0.001206	964.6666	6.295E+10	
0.000	0.000	0.000					
24.875	0.0404	986615.	3000.0000	-0.001125	976.7509	6.295E+10	
0.000	0.000	0.000					
25.311	0.0347	1002967.	3000.0000	-0.001042	988.7993	6.295E+10	
0.000	0.000	0.000					
25.748	0.0295	1019269.	1897.5091	-0.000958	1000.8114	6.295E+10	
-421.0552	74794.	0.000					
26.184	0.0247	1023974.	-373.4733	-0.000873	1004.2783	6.295E+10	
-446.2616	94669.	0.000					
26.620	0.0203	1016391.	-2706.9829	-0.000788	998.6905	6.295E+10	
-444.9351	114571.	0.000					
27.057	0.0164	996555.	-4976.9918	-0.000704	984.0751	6.295E+10	
-422.0100	134499.	0.000					
27.493	0.0130	965097.	-7082.8045	-0.000623	960.8961	6.295E+10	
-382.2265	154455.	0.000					
27.930	0.009908	923110.	-8947.7980	-0.000544	929.9585	6.295E+10	
-330.0380	174437.	0.000					
28.366	0.007259	872026.	-10518.	-0.000470	892.3183	6.295E+10	
-269.5315	194446.	0.000					
28.802	0.004990	813507.	-11759.	-0.000399	849.2002	6.295E+10	
-204.3645	214481.	0.000					
29.239	0.003075	749344.	-12654.	-0.000334	801.9230	6.295E+10	
-137.7207	234544.	0.000					
29.675	0.001487	681367.	-13204.	-0.000275	751.8357	6.295E+10	
-72.2849	254633.	0.000					
30.112	0.000195	611375.	-13420.	-0.000221	700.2631	6.295E+10	
-10.2360	274749.	0.000					
30.548	-0.000830	541071.	-13325.	-0.000173	648.4614	6.295E+10	
46.7421	294892.	0.000					
30.984	-0.001620	472023.	-12947.	-0.000131	597.5846	6.295E+10	
97.4344	315062.	0.000					
31.421	-0.002203	405623.	-12323.	-9.461E-05	548.6596	6.295E+10	
141.0552	335258.	0.000					
31.857	-0.002610	343072.	-11505.	-6.347E-05	502.5701	6.295E+10	
171.3226	343695.	0.000					
32.294	-0.002868	285202.	-10563.	-3.733E-05	459.9300	6.295E+10	
188.3572	343926.	0.000					
32.730	-0.003001	232484.	-9553.2802	-1.580E-05	421.0858	6.295E+10	
197.2488	344156.	0.000					
33.166	-0.003034	185164.	-8514.4554	1.573E-06	386.2188	6.295E+10	
199.4915	344386.	0.000					
33.603	-0.002985	143305.	-7477.7785	1.524E-05	355.3762	6.295E+10	
196.4285	344617.	0.000					
34.039	-0.002874	106827.	-6467.9177	2.564E-05	328.4977	6.295E+10	
189.2501	344847.	0.000					
34.476	-0.002716	75533.	-5503.7044	3.323E-05	305.4394	6.295E+10	
178.9951	345077.	0.000					
34.912	-0.002526	49144.	-4598.9119	3.841E-05	285.9952	6.295E+10	
166.5565	345308.	0.000					
35.348	-0.002314	27320.	-3763.0006	4.159E-05	269.9149	6.295E+10	
152.6885	345538.	0.000					
35.785	-0.002090	9682.2080	-3001.8199	4.313E-05	256.9190	6.295E+10	
138.0160	345769.	0.000					
36.221	-0.001862	-4171.0038	-2318.2575	4.336E-05	252.8582	6.295E+10	
123.0451	345999.	0.000					
36.658	-0.001636	-14650.	-1712.8327	4.258E-05	260.5791	6.295E+10	
108.1743	346229.	0.000					
37.094	-0.001416	-22161.	-1184.2299	4.105E-05	266.1136	6.295E+10	
93.7058	346460.	0.000					
37.530	-0.001206	-27101.	-729.7727	3.900E-05	269.7539	6.295E+10	
79.8571	346690.	0.000					

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37.967	-0.001008	-29850.	-345.8386	3.663E-05	271.7795	6.295E+10	
66.7722	346920.	0.000					
38.403	-0.000823	-30767.	-28.2163	3.411E-05	272.4547	6.295E+10	
54.5318	347151.	0.000					
38.840	-0.000651	-30186.	227.5912	3.157E-05	272.0270	6.295E+10	
43.1643	347381.	0.000					
39.276	-0.000492	-28421.	426.1153	2.913E-05	270.7259	6.295E+10	
32.6546	347612.	0.000					
39.712	-0.000346	-25758.	571.7191	2.688E-05	268.7639	6.295E+10	
22.9533	347842.	0.000					
40.149	-0.000210	-22464.	668.4385	2.487E-05	266.3372	6.295E+10	
13.9851	348072.	0.000					
40.585	-8.504E-05	-18786.	719.8661	2.316E-05	263.6271	6.295E+10	
5.6558	348303.	0.000					
41.022	3.215E-05	-14952.	729.0726	2.176E-05	260.8021	6.295E+10	
-2.1398	348533.	0.000					
41.458	0.000143	-11176.	698.5642	2.067E-05	258.0197	6.295E+10	
-9.5118	348763.	0.000					
41.894	0.000249	-7660.1907	630.2739	1.989E-05	255.4291	6.295E+10	
-16.5691	348994.	0.000					
42.331	0.000351	-4598.3471	525.5843	1.938E-05	253.1730	6.295E+10	
-23.4132	349224.	0.000					
42.767	0.000452	-2178.3618	385.3801	1.909E-05	251.3899	6.295E+10	
-30.1326	349455.	0.000					
43.204	0.000551	-584.6273	210.1305	1.898E-05	250.2156	6.295E+10	
-36.7974	349685.	0.000					
43.640	0.000650	0.000	0.000	1.895E-05	249.7848	6.295E+10	
-43.4541	174958.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection	=	0.8467778 inches
Computed slope at pile head	=	-0.0034958 radians
Maximum bending moment	=	1023974. inch-lbs
Maximum shear force	=	-13420. lbs
Depth of maximum bending moment	=	26.1840000 feet below pile head
Depth of maximum shear force	=	30.1116000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	2

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	3000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	186000.0 lbs

Depth Res.	Deflect. Soil Spr.	Bending Distrib.	Shear Force	Slope S	Total Stress	Bending Sti ffness	Soil p
X	y	Moment	lbs	radians	psi *	lb-in^2	lb/in
Es*h	Lat. Load	in-lbs					
feet	inches						
lb/inch	lb/inch						

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0.00	0.9084	1.0000	3000.0000	-0.003760	411.1510	6.295E+10
0.000	0.000	0.000				
0.436	0.8887	19374.	3000.0000	-0.003760	425.4258	6.295E+10
0.000	0.000	0.000				
0.873	0.8690	38746.	3000.0000	-0.003757	439.6994	6.295E+10
0.000	0.000	0.000				
1.309	0.8494	58115.	3000.0000	-0.003753	453.9707	6.295E+10
0.000	0.000	0.000				
1.746	0.8297	77478.	3000.0000	-0.003748	468.2385	6.295E+10
0.000	0.000	0.000				
2.182	0.8101	96836.	3000.0000	-0.003740	482.5017	6.295E+10
0.000	0.000	0.000				
2.618	0.7905	116186.	3000.0000	-0.003731	496.7592	6.295E+10
0.000	0.000	0.000				
3.055	0.7710	135526.	3000.0000	-0.003721	511.0097	6.295E+10
0.000	0.000	0.000				
3.491	0.7516	154855.	3000.0000	-0.003709	525.2521	6.295E+10
0.000	0.000	0.000				
3.928	0.7322	174172.	3000.0000	-0.003695	539.4852	6.295E+10
0.000	0.000	0.000				
4.364	0.7129	193475.	3000.0000	-0.003680	553.7080	6.295E+10
0.000	0.000	0.000				
4.800	0.6936	212762.	3000.0000	-0.003663	567.9192	6.295E+10
0.000	0.000	0.000				
5.237	0.6745	232031.	3000.0000	-0.003645	582.1177	6.295E+10
0.000	0.000	0.000				
5.673	0.6555	251282.	3000.0000	-0.003624	596.3023	6.295E+10
0.000	0.000	0.000				
6.110	0.6365	270513.	3000.0000	-0.003603	610.4720	6.295E+10
0.000	0.000	0.000				
6.546	0.6177	289722.	3000.0000	-0.003579	624.6254	6.295E+10
0.000	0.000	0.000				
6.982	0.5991	308907.	3000.0000	-0.003555	638.7616	6.295E+10
0.000	0.000	0.000				
7.419	0.5805	328067.	3000.0000	-0.003528	652.8794	6.295E+10
0.000	0.000	0.000				
7.855	0.5621	347201.	3000.0000	-0.003500	666.9775	6.295E+10
0.000	0.000	0.000				
8.292	0.5438	366306.	3000.0000	-0.003470	681.0550	6.295E+10
0.000	0.000	0.000				
8.728	0.5258	385382.	3000.0000	-0.003439	695.1105	6.295E+10
0.000	0.000	0.000				
9.164	0.5078	404426.	3000.0000	-0.003406	709.1431	6.295E+10
0.000	0.000	0.000				
9.601	0.4901	423438.	3000.0000	-0.003372	723.1515	6.295E+10
0.000	0.000	0.000				
10.037	0.4725	442416.	3000.0000	-0.003336	737.1346	6.295E+10
0.000	0.000	0.000				
10.474	0.4551	461357.	3000.0000	-0.003298	751.0913	6.295E+10
0.000	0.000	0.000				
10.910	0.4380	480261.	3000.0000	-0.003259	765.0205	6.295E+10
0.000	0.000	0.000				
11.346	0.4210	499127.	3000.0000	-0.003218	778.9209	6.295E+10
0.000	0.000	0.000				
11.783	0.4043	517951.	3000.0000	-0.003176	792.7916	6.295E+10
0.000	0.000	0.000				
12.219	0.3877	536734.	3000.0000	-0.003132	806.6314	6.295E+10
0.000	0.000	0.000				
12.656	0.3715	555474.	3000.0000	-0.003087	820.4391	6.295E+10
0.000	0.000	0.000				
13.092	0.3554	574168.	3000.0000	-0.003040	834.2136	6.295E+10
0.000	0.000	0.000				

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13.528	0.3396	592816.	3000.0000	-0.002991	847.9539	6.295E+10	
0.000	0.000	0.000					
13.965	0.3241	611416.	3000.0000	-0.002941	861.6588	6.295E+10	
0.000	0.000	0.000					
14.401	0.3088	629966.	3000.0000	-0.002889	875.3271	6.295E+10	
0.000	0.000	0.000					
14.838	0.2938	648465.	3000.0000	-0.002836	888.9579	6.295E+10	
0.000	0.000	0.000					
15.274	0.2791	666912.	3000.0000	-0.002781	902.5499	6.295E+10	
0.000	0.000	0.000					
15.710	0.2647	685304.	3000.0000	-0.002725	916.1021	6.295E+10	
0.000	0.000	0.000					
16.147	0.2506	703642.	3000.0000	-0.002667	929.6134	6.295E+10	
0.000	0.000	0.000					
16.583	0.2368	721922.	3000.0000	-0.002608	943.0827	6.295E+10	
0.000	0.000	0.000					
17.020	0.2233	740143.	3000.0000	-0.002547	956.5089	6.295E+10	
0.000	0.000	0.000					
17.456	0.2101	758305.	3000.0000	-0.002485	969.8909	6.295E+10	
0.000	0.000	0.000					
17.892	0.1972	776405.	3000.0000	-0.002421	983.2276	6.295E+10	
0.000	0.000	0.000					
18.329	0.1847	794442.	3000.0000	-0.002356	996.5179	6.295E+10	
0.000	0.000	0.000					
18.765	0.1726	812415.	3000.0000	-0.002289	1009.7608	6.295E+10	
0.000	0.000	0.000					
19.202	0.1608	830322.	3000.0000	-0.002221	1022.9552	6.295E+10	
0.000	0.000	0.000					
19.638	0.1493	848162.	3000.0000	-0.002151	1036.1001	6.295E+10	
0.000	0.000	0.000					
20.074	0.1382	865933.	3000.0000	-0.002080	1049.1943	6.295E+10	
0.000	0.000	0.000					
20.511	0.1275	883634.	3000.0000	-0.002007	1062.2368	6.295E+10	
0.000	0.000	0.000					
20.947	0.1172	901263.	3000.0000	-0.001932	1075.2265	6.295E+10	
0.000	0.000	0.000					
21.384	0.1073	918819.	3000.0000	-0.001857	1088.1624	6.295E+10	
0.000	0.000	0.000					
21.820	0.0978	936301.	3000.0000	-0.001780	1101.0435	6.295E+10	
0.000	0.000	0.000					
22.256	0.0886	953707.	3000.0000	-0.001701	1113.8687	6.295E+10	
0.000	0.000	0.000					
22.693	0.0799	971036.	3000.0000	-0.001621	1126.6369	6.295E+10	
0.000	0.000	0.000					
23.129	0.0717	988285.	3000.0000	-0.001539	1139.3471	6.295E+10	
0.000	0.000	0.000					
23.566	0.0638	1005455.	3000.0000	-0.001457	1151.9983	6.295E+10	
0.000	0.000	0.000					
24.002	0.0564	1022544.	3000.0000	-0.001372	1164.5895	6.295E+10	
0.000	0.000	0.000					
24.438	0.0494	1039549.	3000.0000	-0.001286	1177.1197	6.295E+10	
0.000	0.000	0.000					
24.875	0.0429	1056470.	3000.0000	-0.001199	1189.5878	6.295E+10	
0.000	0.000	0.000					
25.311	0.0369	1073306.	3000.0000	-0.001111	1201.9928	6.295E+10	
0.000	0.000	0.000					
25.748	0.0313	1090055.	1829.1768	-0.001021	1214.3337	6.295E+10	
-447.1522	74794.	0.000					
26.184	0.0262	1094452.	-581.8334	-0.000930	1217.5740	6.295E+10	
-473.6430	94669.	0.000					
26.620	0.0216	1085772.	-3057.6600	-0.000839	1211.1781	6.295E+10	
-471.9064	114571.	0.000					
27.057	0.0174	1064062.	-5464.2745	-0.000750	1195.1817	6.295E+10	

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-447. 2101	134499.	0. 000					
27. 493	0. 0137	1030002.	-7694. 6842	-0. 000663	1170. 0850	6. 295E+10	
-404. 6115	154455.	0. 000					
27. 930	0. 0105	984762.	-9667. 5718	-0. 000579	1136. 7509	6. 295E+10	
-348. 8591	174437.	0. 000					
28. 366	0. 007657	929875.	-11325.	-0. 000499	1096. 3087	6. 295E+10	
-284. 3078	194446.	0. 000					
28. 802	0. 005246	867116.	-12632.	-0. 000424	1050. 0660	6. 295E+10	
-214. 8526	214481.	0. 000					
29. 239	0. 003213	798394.	-13572.	-0. 000355	999. 4300	6. 295E+10	
-143. 8817	234544.	0. 000					
29. 675	0. 001527	725662.	-14143.	-0. 000292	945. 8390	6. 295E+10	
-74. 2498	254633.	0. 000					
30. 112	0. 000158	650835.	-14359.	-0. 000234	890. 7043	6. 295E+10	
-8. 2716	274749.	0. 000					
30. 548	-0. 000928	575729.	-14244.	-0. 000183	835. 3635	6. 295E+10	
52. 2665	294892.	0. 000					
30. 984	-0. 001763	502009.	-13829.	-0. 000139	781. 0446	6. 295E+10	
106. 0779	315062.	0. 000					
31. 421	-0. 002379	431157.	-13153.	-9. 975E-05	728. 8392	6. 295E+10	
152. 3334	335258.	0. 000					
31. 857	-0. 002808	364448.	-12271.	-6. 666E-05	679. 6862	6. 295E+10	
184. 2874	343695.	0. 000					
32. 294	-0. 003078	302764.	-11259.	-3. 891E-05	634. 2353	6. 295E+10	
202. 1229	343926.	0. 000					
32. 730	-0. 003215	246598.	-10177.	-1. 605E-05	592. 8506	6. 295E+10	
211. 3136	344156.	0. 000					
33. 166	-0. 003246	196207.	-9064. 6364	2. 364E-06	555. 7211	6. 295E+10	
213. 4515	344386.	0. 000					
33. 603	-0. 003191	151654.	-7955. 9575	1. 683E-05	522. 8932	6. 295E+10	
209. 9669	344617.	0. 000					
34. 039	-0. 003069	112847.	-6876. 9311	2. 784E-05	494. 2989	6. 295E+10	
202. 1269	344847.	0. 000					
34. 476	-0. 002899	79573.	-5847. 4721	3. 584E-05	469. 7822	6. 295E+10	
191. 0365	345077.	0. 000					
34. 912	-0. 002694	51533.	-4882. 1154	4. 129E-05	449. 1211	6. 295E+10	
177. 6454	345308.	0. 000					
35. 348	-0. 002467	28360.	-3990. 8116	4. 462E-05	432. 0465	6. 295E+10	
162. 7548	345538.	0. 000					
35. 785	-0. 002227	9647. 6571	-3179. 6751	4. 620E-05	418. 2589	6. 295E+10	
147. 0285	345769.	0. 000					
36. 221	-0. 001983	-5032. 9951	-2451. 6767	4. 639E-05	414. 8587	6. 295E+10	
131. 0033	345999.	0. 000					
36. 658	-0. 001741	-16121.	-1807. 2755	4. 551E-05	423. 0284	6. 295E+10	
115. 1017	346229.	0. 000					
37. 094	-0. 001506	-24050.	-1244. 9871	4. 384E-05	428. 8712	6. 295E+10	
99. 6434	346460.	0. 000					
37. 530	-0. 001282	-29245.	-761. 8885	4. 162E-05	432. 6992	6. 295E+10	
84. 8581	346690.	0. 000					
37. 967	-0. 001070	-32111.	-354. 0592	3. 907E-05	434. 8107	6. 295E+10	
70. 8971	346920.	0. 000					
38. 403	-0. 000873	-33030.	-16. 9613	3. 636E-05	435. 4876	6. 295E+10	
57. 8449	347151.	0. 000					
38. 840	-0. 000689	-32360.	254. 2385	3. 364E-05	434. 9937	6. 295E+10	
45. 7298	347381.	0. 000					
39. 276	-0. 000520	-30433.	464. 4021	3. 103E-05	433. 5739	6. 295E+10	
34. 5343	347612.	0. 000					
39. 712	-0. 000364	-27556.	618. 2044	2. 862E-05	431. 4544	6. 295E+10	
24. 2047	347842.	0. 000					
40. 149	-0. 000221	-24014.	719. 9657	2. 647E-05	428. 8441	6. 295E+10	
14. 6593	348072.	0. 000					
40. 585	-8. 716E-05	-20067.	773. 5284	2. 464E-05	425. 9362	6. 295E+10	
5. 7970	348303.	0. 000					

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41.022	3.749E-05	-15960.	782.1737	2.314E-05	422.9100	6.295E+10	
-2.4952	348533.	0.000					
41.458	0.000155	-11920.	748.5784	2.198E-05	419.9332	6.295E+10	
-10.3353	348763.	0.000					
41.894	0.000268	-8162.4148	674.8053	2.114E-05	417.1646	6.295E+10	
-17.8396	348994.	0.000					
42.331	0.000377	-4893.4766	562.3283	2.060E-05	414.7559	6.295E+10	
-25.1167	349224.	0.000					
42.767	0.000483	-2312.9453	412.0899	2.030E-05	412.8545	6.295E+10	
-32.2612	349455.	0.000					
43.204	0.000589	-616.9599	224.5891	2.018E-05	411.6049	6.295E+10	
-39.3477	349685.	0.000					
43.640	0.000695	0.000	0.000	2.015E-05	411.1503	6.295E+10	
-46.4256	174958.	0.000					

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection	=	0.9084059	inches
Computed slope at pile head	=	-0.0037605	radians
Maximum bending moment	=	1094452.	inch-lbs
Maximum shear force	=	-14359.	lbs
Depth of maximum bending moment	=	26.1840000	feet below pile head
Depth of maximum shear force	=	30.1116000	feet below pile head
Number of iterations	=	6	
Number of zero deflection points	=	2	

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Case No.	Load Type No.	Pile-head		Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs
		Condition 1 V(lbs) or y(inches)	Condition 2 Pile-head Rotation or in-lb/rad. radians			
1	1	V = 3000.0000	M = 1.0000	113000.	0.84677776	
1023974.		-13420.	-0.00349577			
2	1	V = 3000.0000	M = 1.0000	186000.	0.90840589	
1094452.		-14359.	-0.00376047			

The analysis ended normally.

ABUT - Strength - SCOUR.lp7o

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LPile Plus for Windows, Version 2013-07.007

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: I:\115360-01 - Compark at
Bel ford\CADD\Bri dge\Worki ng\JDJ\L-Pi le\
Name of input data file: ABUT - Strength - SCOUR.lp7d
Name of output report file: ABUT - Strength - SCOUR.lp7o
Name of plot output file: ABUT - Strength - SCOUR.lp7p
Name of runtime message file: ABUT - Strength - SCOUR.lp7r

Date and Time of Analysis

Date: February 25, 2021 Time: 12:44:15

Problem Title

Project Name: Bel ford ABUT - Servi ce

Job Number: 115360

Client:

Engi neer: JDJ

ABUT - Strength - SCOUR.Ip7o

Description:

Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary 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

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear 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:

- No p-y curves to be computed and reported for user-specified depths
- 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

Pile Structural Properties and Geometry

Total number of pile sections = 1

Total length of pile = 100.00 ft

Depth of ground surface below top of pile = 25.60 ft

Pile diameter values 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.

Poi nt	Depth X ft	Pi le Di ameter i n
1	0.00000	24.0000000
2	100.000000	24.0000000

ABUT - Strength - SCOUR.lp7o

Input Structural Properties:

Pile Section No. 1:

Section Type = Drilled Shaft (Bored Pile)
 Section Length = 100.00000 ft
 Section Diameter = 24.00000 in

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 1 layers

Layer 1 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer = 25.60000 ft
 Distance from top of pile to bottom of layer = 100.00000 ft
 Effective unit weight at top of layer = 61.00000 pcf
 Effective unit weight at bottom of layer = 61.00000 pcf
 Uniaxial compressive strength at top of layer = 100.00000 psi
 Uniaxial compressive strength at bottom of layer = 120.00000 psi
 Initial modulus of rock at top of layer = 130.00000 psi
 Initial modulus of rock at bottom of layer = 145.00000 psi
 RQD of rock at top of layer = 10.00000 %
 RQD of rock at bottom of layer = 20.00000 %
 k_{rm} of rock at top of layer = 0.0000500
 k_{rm} of rock at bottom of layer = 0.0000500

(Depth of lowest soil layer extends 0.00 ft below pile tip)

Summary of Soil Properties

Layer	RQD % or Num. GSI	Rock Mass Rock Emass (p-y Curve Criteria) psi	Soil Type k _{rm}	Layer Depth ft	Effective Unit Wt. pcf	Uni axial qu psi
1	10.000	Weak Rock 130.000	5.00E-05	25.600 100.000	61.000 61.000	100.000 120.000

20.000 145.000 ABUT - Strength - SCOUR.lp7o
5.00E-05

Loading Type

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

Pile-head Loading and Pile-head Fixity Conditions

Number of Loads specified = 2

Load No.	Load Compute Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 3000.00000 lbs	M = 1.00000 in-lbs	142000.
2	1	V = 3000.00000 lbs	M = 1.00000 in-lbs	235000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	100.0000	ft
Shaft Diameter	=	24.0000	in
Concrete Cover Thickness	=	3.5000	in
Number of Reinforcing Bars	=	8	bars
Yield Stress of Reinforcing Bars	=	60000.	psi
Modulus of Elasticity of Reinforcing Bars	=	29000000.	psi
Gross Area of Shaft	=	452.38934	sq. in.
Total Area of Reinforcing Steel	=	6.32000	sq. in.
Area Ratio of Steel Reinforcement	=	1.40	percent
Edge-to-Edge Bar Spacing	=	5.12293	in
Maximum Concrete Aggregate Size	=	0.75000	in
Ratio of Bar Spacing to Aggregate Size	=	6.83	

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Offset of Center of Rebar Cage from Center of Pile = 0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$ = 1895.836 kips
 Tensile Load for Cracking of Concrete = -206.670 kips
 Nominal Axial Tensile Capacity = -379.200 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.00000	0.79000	8.00000	0.00000
2	1.00000	0.79000	5.65685	5.65685
3	1.00000	0.79000	0.00000	8.00000
4	1.00000	0.79000	-5.65685	5.65685
5	1.00000	0.79000	-8.00000	0.00000
6	1.00000	0.79000	-5.65685	-5.65685
7	1.00000	0.79000	0.00000	-8.00000
8	1.00000	0.79000	5.65685	-5.65685

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

Minimum spacing between any two bars not equal to zero = 5.12293 inches between Bars 6 and 7

Spacing to aggregate size ratio = 6.83058

Concrete Properties:

Compressive Strength of Concrete = 4000.00000 psi
 Modulus of Elasticity of Concrete = 3604997. psi
 Modulus of Rupture of Concrete = -474.34164 psi
 Compression Strain at Peak Stress = 0.00189
 Tensile Strain at Fracture of Concrete = -0.0001154
 Maximum Coarse Aggregate Size = 0.75000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	142.000
2	235.000

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 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
- Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

ABUT - Strength - SCOUR.Ip7o

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 = 142.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.00001250	89.4589774	71567182.	67.6912779	0.0000846	0.0000546
0.3502064	2.4494588				
0.00002500	178.9303010	71572120.	39.8626056	0.0000997	0.0000397
0.4102901	2.8813389				
0.00003750	268.3939574	71571722.	30.5938969	0.0001147	0.0000247
0.4699874	3.3140363				
0.00005000	357.8461237	71569225.	25.9651797	0.0001298	0.00009826
0.5292956	3.7475511				
0.00006250	447.2822430	71565159.	23.1924547	0.0001450	-0.00005047
0.5882115	4.1818824				
0.00007500	536.6386365	71551818.	21.3473636	0.0001601	-0.0000199
0.6467219	4.6169516				
0.00008750	625.7674602	71516281.	20.0315299	0.0001753	-0.0000347
0.7047966	5.0525507				
0.000100	714.5708662	71457087.	19.0459329	0.0001905	-0.0000495
0.7624128	5.4885206				
0.000113	802.9956138	71377388.	18.2801862	0.0002057	-0.0000643
0.8195561	5.9247608				
0.000125	891.0109986	71280880.	17.6681537	0.0002209	-0.0000791
0.8762171	6.3612058				
0.000138	978.5996719	71170885.	17.1678101	0.0002361	-0.0000939
0.9323897	6.7978143				
0.000150	1065.7510877	71050073.	16.7511695	0.0002513	-0.0001087
0.9880700	7.2345588				
0.000163	1065.7510877	65584682.	15.2890022	0.0002484	-0.0001416
0.9771251	7.1483923	C			
0.000175	1065.7510877	60900062.	14.8483133	0.0002598	-0.0001602
1.0184579	7.4746189	C			
0.000188	1065.7510877	56840058.	14.4553248	0.0002710	-0.0001790
1.0587522	7.7948328	C			
0.000200	1065.7510877	53287554.	14.1020194	0.0002820	-0.0001980
1.0980904	8.1095713	C			
0.000213	1065.7510877	50152992.	13.7826643	0.0002929	-0.0002171
1.1365830	8.4196168	C			
0.000225	1065.7510877	47366715.	13.4915094	0.0003036	-0.0002364
1.1742345	8.7249099	C			
0.000238	1065.7510877	44873730.	13.2254780	0.0003141	-0.0002559
1.2111722	9.0263981	C			
0.000250	1065.7510877	42630044.	12.9811899	0.0003245	-0.0002755
1.2474395	9.3243627	C			
0.000263	1084.3477591	41308486.	12.7559486	0.0003348	-0.0002952
1.2830823	9.6191160	C			
0.000275	1108.5663686	40311504.	12.5475916	0.0003451	-0.0003149
1.3181498	9.9110044	C			
0.000288	1132.2872235	39383903.	12.3543840	0.0003552	-0.0003348
1.3526951	10.2004177	C			

		ABUT	- Strength	- SCOUR	Ip7o		
0.0000300	1155.4591954		38515307.	12.1738750		0.0003652	-0.0003548
1.3866665	10.4868713	C					
0.0000313	1178.2702010		37704646.	12.0056828		0.0003752	-0.0003748
1.4201925	10.7714001	C					
0.0000325	1200.8086154		36947957.	11.8489562		0.0003851	-0.0003949
1.4533402	-11.3392587	C					
0.0000338	1222.9616670		36235901.	11.7015357		0.0003949	-0.0004151
1.4860122	-11.9196718	C					
0.0000350	1244.8500690		35567145.	11.5631462		0.0004047	-0.0004353
1.5182979	-12.5016065	C					
0.0000363	1266.5237443		34938586.	11.4332013		0.0004145	-0.0004555
1.5502427	-13.0846970	C					
0.0000375	1287.8709429		34343225.	11.3099352		0.0004241	-0.0004759
1.5817352	-13.6699454	C					
0.0000388	1309.0805955		33782725.	11.1940461		0.0004338	-0.0004962
1.6129509	-14.2558405	C					
0.0000400	1330.0051601		33250129.	11.0836837		0.0004433	-0.0005167
1.6437404	-14.8437269	C					
0.0000413	1350.7878570		32746372.	10.9793730		0.0004529	-0.0005371
1.6742450	-15.4323750	C					
0.0000425	1371.4078350		32268420.	10.8803587		0.0004624	-0.0005576
1.7044362	-16.0220578	C					
0.0000438	1391.7999492		31812570.	10.7856994		0.0004719	-0.0005781
1.7342482	-16.6133938	C					
0.0000450	1412.1642482		31381428.	10.6964626		0.0004813	-0.0005987
1.7638888	-17.2045161	C					
0.0000463	1432.2581770		30967744.	10.6103748		0.0004907	-0.0006193
1.7930901	-17.7978847	C					
0.0000475	1452.2677894		30574059.	10.5285485		0.0005001	-0.0006399
1.8220596	-18.3916243	C					
0.0000488	1472.2502809		30200006.	10.4510668		0.0005095	-0.0006605
1.8508601	-18.9851542	C					
0.0000513	1511.6404435		29495423.	10.3041851		0.0005281	-0.0007019
1.9073739	-20.1770550	C					
0.0000538	1550.7799444		28851720.	10.1703945		0.0005467	-0.0007433
1.9630418	-21.3698475	C					
0.0000563	1589.4513098		28256912.	10.0462900		0.0005651	-0.0007849
2.0175886	-22.5662393	C					
0.0000588	1627.9193087		27709265.	9.9324380		0.0005835	-0.0008265
2.0713416	-23.7631585	C					
0.0000613	1665.9775890		27199634.	9.8260086		0.0006018	-0.0008682
2.1240228	-24.9634021	C					
0.0000638	1703.9348384		26728390.	9.7283641		0.0006202	-0.0009098
2.1760545	-26.1628367	C					
0.0000663	1741.4739886		26286400.	9.6360331		0.0006384	-0.0009516
2.2269698	-27.3662214	C					
0.0000688	1778.8830413		25874662.	9.5505859		0.0006566	-0.0009934
2.2771967	-28.5692692	C					
0.0000713	1816.1601517		25489967.	9.4712616		0.0006748	-0.0010352
2.3267266	-29.7720555	C					
0.0000738	1853.0793685		25126500.	9.3956372		0.0006929	-0.0010771
2.3751996	-30.9784307	C					
0.0000763	1889.9011657		24785589.	9.3253383		0.0007111	-0.0011189
2.4230346	-32.1839956	C					
0.0000788	1926.6248269		24465077.	9.2598598		0.0007292	-0.0011608
2.4702287	-33.3887450	C					
0.0000813	1963.0882359		24161086.	9.1974185		0.0007473	-0.0012027
2.5164975	-34.5958324	C					
0.0000838	1999.3798466		23873192.	9.1384377		0.0007653	-0.0012447
2.5619989	-35.8035691	C					
0.0000863	2035.5745733		23600865.	9.0832061		0.0007834	-0.0012866
2.6068628	-37.0104806	C					
0.0000888	2071.6717111		23342780.	9.0314089		0.0008015	-0.0013285

ABUT - Strength - SCOUR. Ip7o						
2. 6510864	-38. 2165610	C				
0. 0000913	2107. 6036682		23097027.	8. 9821850	0. 0008196	-0. 0013704
2. 6945380	-39. 4233428	C				
0. 0000938	2143. 3206450		22862087.	8. 9348962	0. 0008376	-0. 0014124
2. 7371242	-40. 6320007	C				
0. 0000963	2178. 9410801		22638349.	8. 8903673	0. 0008557	-0. 0014543
2. 7790725	-41. 8398121	C				
0. 0000988	2214. 4642552		22424954.	8. 8483907	0. 0008738	-0. 0014962
2. 8203801	-43. 0467708	C				
0. 0001013	2249. 8894414		22221130.	8. 8087797	0. 0008919	-0. 0015381
2. 8610438	-44. 2528704	C				
0. 0001038	2285. 2159006		22026177.	8. 7713653	0. 0009100	-0. 0015800
2. 9010607	-45. 4581044	C				
0. 0001063	2320. 3505290		21838593.	8. 7351484	0. 0009281	-0. 0016219
2. 9402314	-46. 6650737	C				
0. 0001088	2355. 3449284		21658344.	8. 7004955	0. 0009462	-0. 0016638
2. 9786676	-47. 8723620	C				
0. 0001113	2390. 2413247		21485315.	8. 6676756	0. 0009643	-0. 0017057
3. 0164584	-49. 0787614	C				
0. 0001138	2425. 0389676		21319024.	8. 6365699	0. 0009824	-0. 0017476
3. 0536005	-50. 2842646	C				
0. 0001163	2459. 7370908		21159029.	8. 6070701	0. 0010006	-0. 0017894
3. 0900908	-51. 4888644	C				
0. 0001188	2494. 3349177		21004926.	8. 5790770	0. 0010188	-0. 0018312
3. 1259259	-52. 6925533	C				
0. 0001213	2528. 8316607		20856344.	8. 5524994	0. 0010370	-0. 0018730
3. 1611027	-53. 8953238	C				
0. 0001238	2563. 2265216		20712942.	8. 5272536	0. 0010552	-0. 0019148
3. 1956178	-55. 0971681	C				
0. 0001263	2597. 4572770		20573919.	8. 5026412	0. 0010735	-0. 0019565
3. 2293217	-56. 3003545	C				
0. 0001288	2631. 5608504		20439308.	8. 4789818	0. 0010917	-0. 0019983
3. 2623036	-57. 5035514	C				
0. 0001313	2665. 5627482		20309050.	8. 4564761	0. 0011099	-0. 0020401
3. 2946233	-58. 7057874	C				
0. 0001338	2699. 4621410		20182895.	8. 4350618	0. 0011282	-0. 0020818
3. 3262772	-59. 9070538	C				
0. 0001363	2733. 2581825		20060611.	8. 4146809	0. 0011465	-0. 0021235
3. 3572619	-60. 0000000	CY				
0. 0001388	2766. 9500135		19941982.	8. 3952798	0. 0011648	-0. 0021652
3. 3875737	-60. 0000000	CY				
0. 0001413	2800. 5367618		19826809.	8. 3768088	0. 0011832	-0. 0022068
3. 4172090	-60. 0000000	CY				
0. 0001438	2834. 0175415		19714905.	8. 3592214	0. 0012016	-0. 0022484
3. 4461641	-60. 0000000	CY				
0. 0001463	2867. 3914531		19606095.	8. 3424747	0. 0012201	-0. 0022899
3. 4744353	-60. 0000000	CY				
0. 0001488	2900. 6575827		19500219.	8. 3265285	0. 0012386	-0. 0023314
3. 5020188	-60. 0000000	CY				
0. 0001588	3032. 5941003		19102955.	8. 2696368	0. 0013128	-0. 0024972
3. 6053136	-60. 0000000	CY				
0. 0001688	3162. 5131706		18740819.	8. 2213883	0. 0013874	-0. 0026626
3. 6969899	-60. 0000000	CY				
0. 0001788	3276. 3920460		18329466.	8. 1709742	0. 0014606	-0. 0028294
3. 7752103	-60. 0000000	CY				
0. 0001888	3367. 1423931		17839165.	8. 1125910	0. 0015313	-0. 0029987
3. 8396476	-60. 0000000	CY				
0. 0001988	3455. 3034560		17385175.	8. 0620511	0. 0016023	-0. 0031677
3. 8934984	-60. 0000000	CY				
0. 0002088	3539. 8246014		16957244.	8. 0163744	0. 0016734	-0. 0033366
3. 9363716	-60. 0000000	CY				
0. 0002188	3598. 4201706		16449921.	7. 9554853	0. 0017403	-0. 0035097
3. 9666410	-60. 0000000	CY				

		ABUT	- Strength	- SCOUR	Ip7o		
0. 0002288	3629. 6435004		15867294.	7. 8792862		0. 0018024	-0. 0036876
3. 9860649	-60. 0000000	CY					
0. 0002388	3657. 7308259		15320339.	7. 8093312		0. 0018645	-0. 0038655
3. 9971394	-60. 0000000	CY					
0. 0002488	3684. 5148253		14812120.	7. 7438937		0. 0019263	-0. 0040437
3. 9972423	-60. 0000000	CY					
0. 0002588	3710. 3614106		14339561.	7. 6849813		0. 0019885	-0. 0042215
3. 9971570	-60. 0000000	CY					
0. 0002688	3735. 3357579		13898924.	7. 6323765		0. 0020512	-0. 0043988
3. 9988461	-60. 0000000	CY					
0. 0002788	3759. 4428759		13486791.	7. 5854220		0. 0021144	-0. 0045756
3. 9999597	60. 0000000	CY					
0. 0002888	3782. 5773204		13099835.	7. 5424991		0. 0021779	-0. 0047521
3. 9995402	60. 0000000	CY					
0. 0002988	3804. 7684998		12735627.	7. 5026973		0. 0022414	-0. 0049286
3. 9982733	60. 0000000	CY					
0. 0003088	3826. 2791197		12392807.	7. 4670375		0. 0023054	-0. 0051046
3. 9963547	60. 0000000	CY					
0. 0003188	3847. 1094410		12069363.	7. 4351532		0. 0023700	-0. 0052800
3. 9997931	60. 0000000	CY					
0. 0003288	3867. 2918120		11763625.	7. 4066750		0. 0024349	-0. 0054551
3. 9979139	60. 0000000	CY					
0. 0003388	3886. 9382867		11474357.	7. 3811270		0. 0025004	-0. 0056296
3. 9986406	60. 0000000	CY					
0. 0003488	3905. 9602696		11199886.	7. 3584315		0. 0025663	-0. 0058037
3. 9988868	60. 0000000	CY					
0. 0003588	3924. 5056128		10939388.	7. 3381180		0. 0026325	-0. 0059775
3. 9954762	60. 0000000	CY					
0. 0003688	3942. 5289178		10691604.	7. 3200845		0. 0026993	-0. 0061507
3. 9991349	60. 0000000	CY					
0. 0003788	3960. 0218017		10455503.	7. 3028544		0. 0027660	-0. 0063240
3. 9949412	60. 0000000	CY					
0. 0003888	3977. 0650220		10230392.	7. 2876053		0. 0028331	-0. 0064969
3. 9987858	60. 0000000	CY					
0. 0003988	3993. 6625890		10015455.	7. 2739200		0. 0029005	-0. 0066695
3. 9970671	60. 0000000	CY					
0. 0004088	4009. 0183861		9807996.	7. 2607712		0. 0029678	-0. 0068422
3. 9975607	60. 0000000	CY					
0. 0004188	4021. 9457709		9604647.	7. 2457435		0. 0030342	-0. 0070158
3. 9999304	60. 0000000	CYT					
0. 0004288	4032. 4709873		9405180.	7. 2291926		0. 0030995	-0. 0071905
3. 9940083	60. 0000000	CYT					
0. 0004388	4040. 6732618		9209512.	7. 2107553		0. 0031637	-0. 0073663
3. 9983074	60. 0000000	CYT					
0. 0004488	4046. 1159732		9016414.	7. 1894844		0. 0032263	-0. 0075437
3. 9999562	60. 0000000	CYT					
0. 0004588	4049. 7998651		8827902.	7. 1673966		0. 0032880	-0. 0077220
3. 9919981	60. 0000000	CYT					
0. 0004688	4051. 4352286		8643062.	7. 1434946		0. 0033485	-0. 0079015
3. 9964102	60. 0000000	CYT					
0. 0004788	4052. 1135443		8463945.	7. 1194715		0. 0034084	-0. 0080816
3. 9990562	60. 0000000	CYT					
0. 0004888	4052. 6889019		8291947.	7. 0966610		0. 0034685	-0. 0082615
3. 9999980	60. 0000000	CYT					
0. 0004988	4053. 0340927		8126384.	7. 0747691		0. 0035285	-0. 0084415
3. 9917480	60. 0000000	CYT					
0. 0005088	4053. 1234212		7966827.	7. 0522462		0. 0035878	-0. 0086222
3. 9946645	60. 0000000	CYT					
0. 0005188	4053. 1719498		7813344.	7. 0308170		0. 0036472	-0. 0088028
3. 9977953	60. 0000000	CYT					
0. 0005288	4053. 1788545		7665586.	7. 0104232		0. 0037068	-0. 0089832
3. 9995699	60. 0000000	CYT					
0. 0005388	4053. 1788545		7523302.	6. 9910717		0. 0037664	-0. 0091636

3. 9983324 60. 0000000 ABUT - Strength - SCOUR. I p7o
 0. 0005488 4053. 1788545 CYT 7386203. 6. 9728428 0. 0038263 -0. 0093437
 3. 9904605 60. 0000000 CYT

Axial Thrust Force = 235.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0. 00001250	87. 3264808	69861185.	105. 2332203	0. 0001315	0. 0001015
0. 5378458	3. 8103542				
0. 00002500	174. 6761897	69870476.	58. 6339848	0. 0001466	0. 0000866
0. 5963622	4. 2422639				
0. 00003750	262. 0180471	69871479.	43. 1086024	0. 0001617	0. 0000717
0. 6544917	4. 6750105				
0. 00005000	349. 3481382	69869628.	35. 3516839	0. 0001768	0. 0000568
0. 7122316	5. 1085942				
0. 00006250	436. 6625473	69866008.	30. 7021516	0. 0001919	0. 0000419
0. 7695789	5. 5430150				
0. 00007500	523. 9573576	69860981.	27. 6063133	0. 0002070	0. 0000270
0. 8265307	5. 9782732				
0. 00008750	611. 2286510	69854703.	25. 3983009	0. 0002222	0. 0000122
0. 8830841	6. 4143689				
0. 0000100	698. 4724707	69847247.	23. 7451803	0. 0002375	-0. 000002548
0. 9392363	6. 8513023				
0. 0000113	785. 6634551	69836752.	22. 4619021	0. 0002527	-0. 0000173
0. 9949807	7. 2890456				
0. 0000125	872. 7102334	69816819.	21. 4371796	0. 0002680	-0. 0000320
1. 0502993	7. 7274776				
0. 0000138	959. 5226024	69783462.	20. 6001659	0. 0002833	-0. 0000467
1. 1051732	8. 1664662				
0. 0000150	1046. 0357467	69735716.	19. 9036932	0. 0002986	-0. 0000614
1. 1595876	8. 6059066				
0. 0000163	1132. 2057994	69674203.	19. 3151647	0. 0003139	-0. 0000761
1. 2135314	9. 0457214				
0. 0000175	1218. 0021110	69600121.	18. 8113340	0. 0003292	-0. 0000908
1. 2669962	9. 4858520				
0. 0000188	1303. 4023494	69514792.	18. 3751767	0. 0003445	-0. 0001055
1. 3199755	9. 9262524				
0. 0000200	1303. 4023494	65170117.	17. 4142367	0. 0003483	-0. 0001317
1. 3324591	10. 0306572	C			
0. 0000213	1303. 4023494	61336581.	16. 9832428	0. 0003609	-0. 0001491
1. 3754366	10. 3919733	C			
0. 0000225	1303. 4023494	57928993.	16. 5912353	0. 0003733	-0. 0001667
1. 4173825	10. 7474810	C			
0. 0000238	1307. 0706763	55034555.	16. 2328668	0. 0003855	-0. 0001845
1. 4583783	11. 0977370	C			
0. 0000250	1343. 2002699	53728011.	15. 9031212	0. 0003976	-0. 0002024
1. 4984413	11. 4427629	C			
0. 0000263	1377. 7444618	52485503.	15. 5987042	0. 0004095	-0. 0002205
1. 5376554	11. 7831636	C			
0. 0000275	1410. 9390024	51306873.	15. 3168318	0. 0004212	-0. 0002388
1. 5760939	12. 1194734	C			
0. 0000288	1442. 9007260	50187851.	15. 0547912	0. 0004328	-0. 0002572
1. 6137895	12. 4518822	C			
0. 0000300	1473. 7442209	49124807.	14. 8103486	0. 0004443	-0. 0002757
1. 6507763	12. 7806033	C			

		ABUT	- Strength	- SCOUR	Ip7o		
0. 0000313	1503. 5814504		48114606.	14. 5816555		0. 0004557	-0. 0002943
1. 6870907	13. 1058754	C					
0. 0000325	1532. 5213738		47154504.	14. 3671764		0. 0004669	-0. 0003131
1. 7227709	13. 4279638	C					
0. 0000338	1560. 6695766		46242062.	14. 1656323		0. 0004781	-0. 0003319
1. 7578574	13. 7471626	C					
0. 0000350	1588. 1279073		45375083.	13. 9759571		0. 0004892	-0. 0003508
1. 7923928	14. 0637965	C					
0. 0000363	1614. 9941158		44551562.	13. 7972632		0. 0005002	-0. 0003698
1. 8264222	14. 3782230	C					
0. 0000375	1641. 0582712		43761554.	13. 6273869		0. 0005110	-0. 0003890
1. 8598273	14. 6892834	C					
0. 0000388	1666. 6549820		43010451.	13. 4668182		0. 0005218	-0. 0004082
1. 8927765	14. 9984870	C					
0. 0000400	1691. 8841078		42297103.	13. 3151106		0. 0005326	-0. 0004274
1. 9253267	15. 3063284	C					
0. 0000413	1716. 4088315		41609911.	13. 1698587		0. 0005433	-0. 0004467
1. 9572811	15. 6108936	C					
0. 0000425	1740. 6683375		40956902.	13. 0323565		0. 0005539	-0. 0004661
1. 9888860	15. 9144795	C					
0. 0000438	1764. 4684829		40330708.	12. 9010574		0. 0005644	-0. 0004856
2. 0200286	16. 2159668	C					
0. 0000450	1787. 9192364		39731539.	12. 7758426		0. 0005749	-0. 0005051
2. 0507669	16. 5158747	C					
0. 0000463	1811. 0382992		39157585.	12. 6562900		0. 0005854	-0. 0005246
2. 0811144	16. 8142991	C					
0. 0000475	1833. 8331673		38607014.	12. 5419066		0. 0005957	-0. 0005443
2. 1110684	17. 1111764	C					
0. 0000488	1856. 3147759		38078252.	12. 4323363		0. 0006061	-0. 0005639
2. 1406384	17. 4065656	C					
0. 0000513	1900. 5209616		37083336.	12. 2268286		0. 0006266	-0. 0006034
2. 1987282	17. 9937741	C					
0. 0000538	1943. 8497722		36164647.	12. 0378234		0. 0006470	-0. 0006430
2. 2555025	18. 5769073	C					
0. 0000563	1986. 4626649		35314892.	11. 8636987		0. 0006673	-0. 0006827
2. 3110701	-19. 6015913	C					
0. 0000588	2028. 2020310		34522588.	11. 7016603		0. 0006875	-0. 0007225
2. 3653030	-20. 7488460	C					
0. 0000613	2069. 3505816		33785316.	11. 5513110		0. 0007075	-0. 0007625
2. 4183997	-21. 8988337	C					
0. 0000638	2110. 0533793		33098877.	11. 4119169		0. 0007275	-0. 0008025
2. 4704798	-23. 0503684	C					
0. 0000663	2149. 9609343		32452241.	11. 2804646		0. 0007473	-0. 0008427
2. 5212475	-24. 2068575	C					
0. 0000688	2189. 6602537		31849604.	11. 1587498		0. 0007672	-0. 0008828
2. 5711893	-25. 3629923	C					
0. 0000713	2228. 5821167		31278345.	11. 0429900		0. 0007868	-0. 0009232
2. 6198142	-26. 5244717	C					
0. 0000738	2267. 3698056		30743997.	10. 9355431		0. 0008065	-0. 0009635
2. 6676812	-27. 6849570	C					
0. 0000763	2305. 5338882		30236510.	10. 8331955		0. 0008260	-0. 0010040
2. 7143466	-28. 8497464	C					
0. 0000788	2343. 4795709		29758471.	10. 7373649		0. 0008456	-0. 0010444
2. 7601836	-30. 0144927	C					
0. 0000813	2381. 1068813		29305931.	10. 6469103		0. 0008651	-0. 0010849
2. 8050905	-31. 1804674	C					
0. 0000838	2418. 2834378		28875026.	10. 5606851		0. 0008845	-0. 0011255
2. 8489459	-32. 3492858	C					
0. 0000863	2455. 3303921		28467599.	10. 4798511		0. 0009039	-0. 0011661
2. 8920570	-33. 5171222	C					
0. 0000888	2492. 0350472		28079268.	10. 4028636		0. 0009233	-0. 0012067
2. 9342078	-34. 6867797	C					
0. 0000913	2528. 3848920		27708328.	10. 3293280		0. 0009426	-0. 0012474

		ABUT - Strength - SCOUR.lp7o				
2. 9753910	-35. 8584655	C				
0. 0000938	2564. 6068331		27355806.	10. 2600765	0. 0009619	-0. 0012881
3. 0158342	-37. 0291668	C				
0. 0000963	2600. 6691217		27019939.	10. 1946139	0. 0009812	-0. 0013288
3. 0555011	-38. 1993336	C				
0. 0000988	2636. 2615653		26696320.	10. 1310299	0. 0010004	-0. 0013696
3. 0940659	-39. 3736128	C				
0. 0001013	2671. 7277349		26387434.	10. 0709236	0. 0010197	-0. 0014103
3. 1318944	-40. 5469004	C				
0. 0001038	2707. 0665450		26092208.	10. 0140458	0. 0010390	-0. 0014510
3. 1689828	-41. 7191894	C				
0. 0001063	2742. 2768970		25809665.	9. 9601711	0. 0010583	-0. 0014917
3. 2053270	-42. 8904724	C				
0. 0001088	2777. 0523947		25536114.	9. 9074309	0. 0010774	-0. 0015326
3. 2405889	-44. 0659896	C				
0. 0001113	2811. 7010578		25273717.	9. 8573692	0. 0010966	-0. 0015734
3. 2751125	-45. 2405123	C				
0. 0001138	2846. 2227348		25021738.	9. 8098170	0. 0011159	-0. 0016141
3. 3088950	-46. 4140159	C				
0. 0001163	2880. 6163532		24779496.	9. 7646147	0. 0011351	-0. 0016549
3. 3419322	-47. 5864925	C				
0. 0001188	2914. 8808009		24546365.	9. 7216162	0. 0011544	-0. 0016956
3. 3742203	-48. 7579337	C				
0. 0001213	2948. 7809896		24319843.	9. 6793467	0. 0011736	-0. 0017364
3. 4054892	-49. 9330469	C				
0. 0001238	2982. 5449218		24101373.	9. 6390242	0. 0011928	-0. 0017772
3. 4360039	-51. 1073014	C				
0. 0001263	3016. 1809023		23890542.	9. 6005871	0. 0012121	-0. 0018179
3. 4657711	-52. 2805001	C				
0. 0001288	3049. 6878256		23686896.	9. 5639279	0. 0012314	-0. 0018586
3. 4947867	-53. 4526337	C				
0. 0001313	3083. 0645504		23490016.	9. 5289475	0. 0012507	-0. 0018993
3. 5230464	-54. 6236932	C				
0. 0001338	3116. 3099192		23299513.	9. 4955541	0. 0012700	-0. 0019400
3. 5505460	-55. 7936691	C				
0. 0001363	3149. 3282568		23114336.	9. 4630784	0. 0012893	-0. 0019807
3. 5771713	-56. 9648611	C				
0. 0001388	3182. 1282612		22934258.	9. 4315135	0. 0013086	-0. 0020214
3. 6029355	-58. 1370973	C				
0. 0001413	3214. 7977189		22759630.	9. 4013380	0. 0013279	-0. 0020621
3. 6279397	-59. 3082190	C				
0. 0001438	3247. 3354442		22590160.	9. 3724819	0. 0013473	-0. 0021027
3. 6521793	-60. 0000000	CY				
0. 0001463	3279. 7402286		22425574.	9. 3448801	0. 0013667	-0. 0021433
3. 6756498	-60. 0000000	CY				
0. 0001488	3312. 0108443		22265619.	9. 3184719	0. 0013861	-0. 0021839
3. 6983465	-60. 0000000	CY				
0. 0001588	3439. 6372966		21667007.	9. 2230750	0. 0014642	-0. 0023458
3. 7812038	-60. 0000000	CY				
0. 0001688	3564. 6593020		21123907.	9. 1403740	0. 0015424	-0. 0025076
3. 8509774	-60. 0000000	CY				
0. 0001788	3687. 4078200		20628855.	9. 0708414	0. 0016214	-0. 0026686
3. 9078450	-60. 0000000	CY				
0. 0001888	3800. 9729854		20137605.	9. 0076425	0. 0017002	-0. 0028298
3. 9510204	-60. 0000000	CY				
0. 0001988	3889. 5564070		19570095.	8. 9359605	0. 0017760	-0. 0029940
3. 9797837	-60. 0000000	CY				
0. 0002088	3971. 1184377		19023322.	8. 8705309	0. 0018517	-0. 0031583
3. 9960069	-60. 0000000	CY				
0. 0002188	4050. 6915976		18517447.	8. 8144045	0. 0019282	-0. 0033218
3. 9984717	-60. 0000000	CY				
0. 0002288	4122. 4719655		18021735.	8. 7620858	0. 0020043	-0. 0034857
3. 9995858	-60. 0000000	CY				

		ABUT	- Strength -	SCOUR. I p7o		
0. 0002388	4168. 6766416		17460426.	8. 6954799	0. 0020760	-0. 0036540
3. 9998695	-60. 0000000	CY				
0. 0002488	4194. 5000554		16862312.	8. 6205934	0. 0021444	-0. 0038256
3. 9998749	60. 0000000	CY				
0. 0002588	4217. 6371986		16300047.	8. 5524170	0. 0022129	-0. 0039971
3. 9997510	60. 0000000	CY				
0. 0002688	4239. 4658732		15774757.	8. 4897671	0. 0022816	-0. 0041684
3. 9993580	60. 0000000	CY				
0. 0002788	4260. 0809344		15282802.	8. 4318440	0. 0023504	-0. 0043396
3. 9984069	60. 0000000	CY				
0. 0002888	4279. 8939040		14822143.	8. 3797231	0. 0024196	-0. 0045104
3. 9965151	60. 0000000	CY				
0. 0002988	4298. 9479015		14389784.	8. 3327741	0. 0024894	-0. 0046806
3. 9999553	60. 0000000	CY				
0. 0003088	4317. 2464167		13982984.	8. 2905180	0. 0025597	-0. 0048503
3. 9989526	60. 0000000	CY				
0. 0003188	4334. 6662965		13598953.	8. 2504928	0. 0026298	-0. 0050202
3. 9959963	60. 0000000	CY				
0. 0003288	4351. 4062489		13236217.	8. 2136435	0. 0027002	-0. 0051898
3. 9997641	60. 0000000	CY				
0. 0003388	4367. 5781617		12893220.	8. 1803102	0. 0027711	-0. 0053589
3. 9971736	60. 0000000	CY				
0. 0003488	4383. 3031524		12568611.	8. 1499835	0. 0028423	-0. 0055277
3. 9999523	60. 0000000	CY				
0. 0003588	4398. 4808303		12260574.	8. 1226163	0. 0029140	-0. 0056960
3. 9973520	60. 0000000	CY				
0. 0003688	4413. 2978636		11968265.	8. 0976397	0. 0029860	-0. 0058640
3. 9999523	60. 0000000	CY				
0. 0003788	4427. 6190060		11690083.	8. 0751299	0. 0030585	-0. 0060315
3. 9966035	60. 0000000	CYT				
0. 0003888	4441. 6213029		11425392.	8. 0545817	0. 0031312	-0. 0061988
3. 9997603	60. 0000000	CYT				
0. 0003988	4455. 1829447		11172873.	8. 0357308	0. 0032042	-0. 0063658
3. 9945426	60. 0000000	CYT				
0. 0004088	4468. 3333372		10931702.	8. 0175615	0. 0032772	-0. 0065328
3. 9988815	60. 0000000	CYT				
0. 0004188	4481. 2119369		10701402.	8. 0009977	0. 0033504	-0. 0066996
3. 9978377	60. 0000000	CYT				
0. 0004288	4493. 7225718		10480986.	7. 9861338	0. 0034241	-0. 0068659
3. 9963261	60. 0000000	CYT				
0. 0004388	4506. 0297870		10270153.	7. 9725280	0. 0034979	-0. 0070321
3. 9995287	60. 0000000	CYT				
0. 0004488	4518. 0378172		10068051.	7. 9602392	0. 0035722	-0. 0071978
3. 9948154	60. 0000000	CYT				
0. 0004588	4529. 7196239		9874048.	7. 9491197	0. 0036467	-0. 0073633
3. 9964413	60. 0000000	CYT				
0. 0004688	4540. 9699001		9687402.	7. 9389295	0. 0037214	-0. 0075286
3. 9994972	60. 0000000	CYT				
0. 0004788	4549. 7927350		9503484.	7. 9266251	0. 0037949	-0. 0076951
3. 9960023	60. 0000000	CYT				
0. 0004888	4549. 7927350		9309039.	7. 9360248	0. 0038787	-0. 0078513
3. 9959138	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 ki ps	Nominal Mom. in-ki p	Cap.	Max. Comp. Strain
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1	142.000	4015.288	0.00300000
2	235.000	4416.064	0.00300000

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

In ACI 318-08, 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 318-08, 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 Capacity in-kip	Resistance Factor at Ult. for Moment	Nominal Bending Stiffness Moment Cap. in-kip	Ultimate (Factored) Axial Thrust kips	Ultimate Moment
1 2609.937	0.65	20524660.467	4015.288	92.300
2 2870.442	0.65	24851158.240	4416.064	152.750
1 2810.701	0.70	19792835.633	4015.288	99.400
2 3091.245	0.70	23443140.390	4416.064	164.500
1 3011.466	0.75	19166573.087	4015.288	106.500
2 3312.048	0.75	22265443.824	4416.064	176.250

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 3000.0 lbs
 Applied moment at pile head = 1.0 in-lbs
 Axial thrust load on pile head = 142000.0 lbs

Depth Res.	Soil	Deflect. Spr.	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil
X	y	Lat. Load	in-lbs	lbs	radians	psi *	lb-in ²	lb/in
feet	inches	lb/inch						
lb/inch	lb/inch							

			ABUT	- Strength	- SCOUR.l p7o		
0.00	0.7673	1.0000	3000.0000	-0.003152	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
1.000	0.7294	41372.	3000.0000	-0.003149	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
2.000	0.6917	82732.	3000.0000	-0.003138	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
3.000	0.6541	124067.	3000.0000	-0.003121	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
4.000	0.6168	165368.	3000.0000	-0.003097	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
5.000	0.5798	206621.	3000.0000	-0.003065	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
6.000	0.5432	247815.	3000.0000	-0.003027	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
7.000	0.5071	288938.	3000.0000	-0.002982	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
8.000	0.4716	329979.	3000.0000	-0.002930	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
9.000	0.4368	370925.	3000.0000	-0.002872	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
10.000	0.4027	411765.	3000.0000	-0.002806	0.000	7.157E+10	
0.000	0.000	0.000	0.000		0.000		
11.000	0.3695	452488.	3000.0000	-0.002734	0.000	7.156E+10	
0.000	0.000	0.000	0.000		0.000		
12.000	0.3371	493082.	3000.0000	-0.002654	0.000	7.156E+10	
0.000	0.000	0.000	0.000		0.000		
13.000	0.3058	533534.	3000.0000	-0.002568	0.000	7.155E+10	
0.000	0.000	0.000	0.000		0.000		
14.000	0.2755	573834.	3000.0000	-0.002475	0.000	7.154E+10	
0.000	0.000	0.000	0.000		0.000		
15.000	0.2464	613970.	3000.0000	-0.002376	0.000	7.152E+10	
0.000	0.000	0.000	0.000		0.000		
16.000	0.2185	653931.	3000.0000	-0.002269	0.000	7.150E+10	
0.000	0.000	0.000	0.000		0.000		
17.000	0.1919	693704.	3000.0000	-0.002156	0.000	7.147E+10	
0.000	0.000	0.000	0.000		0.000		
18.000	0.1667	733279.	3000.0000	-0.002036	0.000	7.144E+10	
0.000	0.000	0.000	0.000		0.000		
19.000	0.1430	772644.	3000.0000	-0.001910	0.000	7.140E+10	
0.000	0.000	0.000	0.000		0.000		
20.000	0.1209	811788.	3000.0000	-0.001777	0.000	7.137E+10	
0.000	0.000	0.000	0.000		0.000		
21.000	0.1004	850700.	3000.0000	-0.001637	0.000	7.132E+10	
0.000	0.000	0.000	0.000		0.000		
22.000	0.0816	889367.	3000.0000	-0.001491	0.000	7.128E+10	
0.000	0.000	0.000	0.000		0.000		
23.000	0.0646	927779.	3000.0000	-0.001338	0.000	7.123E+10	
0.000	0.000	0.000	0.000		0.000		
24.000	0.0495	965925.	3000.0000	-0.001178	0.000	7.119E+10	
0.000	0.000	0.000	0.000		0.000		
25.000	0.0363	1003794.	3000.0000	-0.001012	0.000	7.113E+10	
0.000	0.000	0.000	0.000		0.000		
26.000	0.0252	1041374.	508.3091	-0.000839	0.000	7.108E+10	
-415.2818	197723.	0.000			0.000		
27.000	0.0162	1018853.	-4429.7297	-0.000665	0.000	7.111E+10	
-407.7247	302255.	0.000			0.000		
28.000	0.009234	937328.	-8755.6767	-0.000500	0.000	7.122E+10	
-313.2665	407110.	0.000			0.000		
29.000	0.004176	810423.	-11705.	-0.000353	0.000	7.137E+10	
-178.2591	512287.	0.000			0.000		
30.000	0.000753	657616.	-13007.	-0.000230	0.000	7.149E+10	
-38.7419	617787.	0.000			0.000		
31.000	-0.001346	499043.	-12752.	-0.000133	0.000	7.156E+10	

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81.1644	723610.	0.000					
	32.000	-0.002440	352014.	-11304.	-6.168E-05	0.000	7.157E+10
160.1903	787742.	0.000					
	33.000	-0.002826	227953.	-9228.1509	-1.306E-05	0.000	7.157E+10
185.8134	788952.	0.000					
	34.000	-0.002754	130583.	-7025.3806	1.700E-05	0.000	7.157E+10
181.3149	790161.	0.000					
	35.000	-0.002418	59286.	-4980.6404	3.292E-05	0.000	7.157E+10
159.4751	791371.	0.000					
	36.000	-0.001964	10936.	-3245.6572	3.881E-05	0.000	7.157E+10
129.6888	792581.	0.000					
	37.000	-0.001487	-18742.	-1877.3927	3.815E-05	0.000	7.157E+10
98.3553	793790.	0.000					
	38.000	-0.001048	-34252.	-870.7165	3.371E-05	0.000	7.157E+10
69.4241	795000.	0.000					
	39.000	-0.000678	-39754.	-184.3096	2.750E-05	0.000	7.157E+10
44.9771	796210.	0.000					
	40.000	-0.000388	-38769.	240.1784	2.092E-05	0.000	7.157E+10
25.7709	797419.	0.000					
	41.000	-0.000176	-34061.	464.9909	1.481E-05	0.000	7.157E+10
11.6978	798629.	0.000					
	42.000	-3.226E-05	-27660.	548.0780	9.640E-06	0.000	7.157E+10
2.1500	799839.	0.000					
	43.000	5.560E-05	-20940.	538.7086	5.566E-06	0.000	7.157E+10
-3.7116	801048.	0.000					
	44.000	0.000101	-14750.	475.7946	2.574E-06	0.000	7.157E+10
-6.7741	802258.	0.000					
	45.000	0.000117	-9530.0261	387.9981	5.382E-07	0.000	7.157E+10
-7.8587	803468.	0.000					
	46.000	0.000114	-5439.4303	294.8817	-7.168E-07	0.000	7.157E+10
-7.6607	804677.	0.000					
	47.000	0.000100	-2450.4226	208.5549	-1.378E-06	0.000	7.157E+10
-6.7271	805887.	0.000					
	48.000	8.117E-05	-429.4158	135.4382	-1.620E-06	0.000	7.157E+10
-5.4590	807097.	0.000					
	49.000	6.130E-05	805.6151	77.9106	-1.588E-06	0.000	7.157E+10
-4.1289	808306.	0.000					
	50.000	4.305E-05	1445.8520	35.7122	-1.399E-06	0.000	7.157E+10
-2.9042	809516.	0.000					
	51.000	2.771E-05	1667.4774	7.0537	-1.138E-06	0.000	7.157E+10
-1.8723	810726.	0.000					
	52.000	1.573E-05	1619.0202	-10.5657	-8.628E-07	0.000	7.157E+10
-1.0643	811935.	0.000					
	53.000	7.005E-06	1416.8420	-19.7993	-6.083E-07	0.000	7.157E+10
-0.4747	813145.	0.000					
	54.000	1.130E-06	1145.9094	-23.1075	-3.935E-07	0.000	7.157E+10
-0.0767	814355.	0.000					
	55.000	-2.438E-06	863.6028	-22.5735	-2.250E-07	0.000	7.157E+10
0.1657	815565.	0.000					
	56.000	-4.269E-06	604.9113	-19.8358	-1.019E-07	0.000	7.157E+10
0.2906	816774.	0.000					
	57.000	-4.883E-06	387.8896	-16.0953	-1.863E-08	0.000	7.157E+10
0.3328	817984.	0.000					
	58.000	-4.716E-06	218.6866	-12.1665	3.222E-08	0.000	7.157E+10
0.3220	819194.	0.000					
	59.000	-4.109E-06	95.7829	-8.5491	5.859E-08	0.000	7.157E+10
0.2810	820403.	0.000					
	60.000	-3.310E-06	13.3090	-5.5036	6.773E-08	0.000	7.157E+10
0.2266	821613.	0.000					
	61.000	-2.484E-06	-36.5335	-3.1219	6.579E-08	0.000	7.157E+10
0.1703	822823.	0.000					
	62.000	-1.731E-06	-61.8403	-1.3867	5.754E-08	0.000	7.157E+10
0.1189	824032.	0.000					

		ABUT	- Strength	- SCOUR.lp7o		
63.000	-1.103E-06	-70.0111	-0.2184	4.649E-08	0.000	7.157E+10
0.0758	825242.	0.000				
64.000	-6.155E-07	-67.2400	0.4910	3.498E-08	0.000	7.157E+10
0.0424	826452.	0.000				
65.000	-2.634E-07	-58.3457	0.8544	2.445E-08	0.000	7.157E+10
0.0182	827661.	0.000				
66.000	-2.867E-08	-46.8188	0.9752	1.563E-08	0.000	7.157E+10
0.001980	828871.	0.000				
67.000	1.118E-07	-34.9934	0.9407	8.775E-09	0.000	7.157E+10
-0.007736	830081.	0.000				
68.000	1.819E-07	-24.2720	0.8187	3.806E-09	0.000	7.157E+10
-0.0126	831290.	0.000				
69.000	2.032E-07	-15.3585	0.6585	4.840E-10	0.000	7.157E+10
-0.0141	832500.	0.000				
70.000	1.935E-07	-8.4706	0.4932	-1.514E-09	0.000	7.157E+10
-0.0134	833710.	0.000				
71.000	1.669E-07	-3.5166	0.3429	-2.519E-09	0.000	7.157E+10
-0.0116	834919.	0.000				
72.000	1.331E-07	-0.2333	0.2176	-2.833E-09	0.000	7.157E+10
-0.009274	836129.	0.000				
73.000	9.887E-08	1.7145	0.1205	-2.709E-09	0.000	7.157E+10
-0.006899	837339.	0.000				
74.000	6.808E-08	2.6684	0.0506	-2.342E-09	0.000	7.157E+10
-0.004758	838548.	0.000				
75.000	4.267E-08	2.9364	0.004120	-1.872E-09	0.000	7.157E+10
-0.002986	839758.	0.000				
76.000	2.317E-08	2.7736	-0.0235	-1.393E-09	0.000	7.157E+10
-0.001623	840968.	0.000				
77.000	9.242E-09	2.3763	-0.0372	-9.611E-10	0.000	7.157E+10
-0.000649	842177.	0.000				
78.000	9.858E-11	1.8848	-0.0411	-6.039E-10	0.000	7.157E+10
-6.928E-06	843387.	0.000				
79.000	-5.252E-09	1.3918	-0.0389	-3.292E-10	0.000	7.157E+10
0.000370	844597.	0.000				
80.000	-7.802E-09	0.9517	-0.0334	-1.327E-10	0.000	7.157E+10
0.000550	845806.	0.000				
81.000	-8.437E-09	0.5905	-0.0265	-3.421E-12	0.000	7.157E+10
0.000596	847016.	0.000				
82.000	-7.884E-09	0.3148	-0.0196	7.248E-11	0.000	7.157E+10
0.000557	848226.	0.000				
83.000	-6.698E-09	0.1193	-0.0134	1.089E-10	0.000	7.157E+10
0.000474	849435.	0.000				
84.000	-5.271E-09	-0.007918	-0.008345	1.182E-10	0.000	7.157E+10
0.000374	850645.	0.000				
85.000	-3.861E-09	-0.0814	-0.004459	1.107E-10	0.000	7.157E+10
0.000274	851855.	0.000				
86.000	-2.614E-09	-0.1153	-0.001700	9.424E-11	0.000	7.157E+10
0.000186	853065.	0.000				
87.000	-1.599E-09	-0.1225	9.762E-05	7.430E-11	0.000	7.157E+10
0.000114	854274.	0.000				
88.000	-8.303E-10	-0.1132	0.001136	5.454E-11	0.000	7.157E+10
5.919E-05	855484.	0.000				
89.000	-2.897E-10	-0.0954	0.001615	3.705E-11	0.000	7.157E+10
2.068E-05	856694.	0.000				
90.000	5.894E-11	-0.0746	0.001714	2.280E-11	0.000	7.157E+10
-4.214E-06	857903.	0.000				
91.000	2.575E-10	-0.0544	0.001578	1.199E-11	0.000	7.157E+10
-1.843E-05	859113.	0.000				
92.000	3.467E-10	-0.0368	0.001318	4.349E-12	0.000	7.157E+10
-2.485E-05	860323.	0.000				
93.000	3.619E-10	-0.0227	0.001013	0.000	0.000	7.157E+10
-2.598E-05	861532.	0.000				
94.000	3.313E-10	-0.0124	0.000714	-3.591E-12	0.000	7.157E+10

ABUT - Strength - SCOUR.lp7o

-2.382E-05	862742.	0.000					
95.000	2.757E-10	-0.005585	0.000452	-5.103E-12	0.000	7.157E+10	
-1.985E-05	863952.	0.000					
96.000	2.088E-10	-0.001577	0.000243	-5.703E-12	0.000	7.157E+10	
-1.506E-05	865161.	0.000					
97.000	1.388E-10	0.000264	9.242E-05	-5.813E-12	0.000	7.157E+10	
-1.002E-05	866371.	0.000					
98.000	6.932E-11	0.000661	2.221E-06	-5.736E-12	0.000	7.157E+10	
-5.012E-06	867581.	0.000					
99.000	1.156E-12	0.000337	-2.835E-05	-5.652E-12	0.000	7.157E+10	
-8.371E-08	868790.	0.000					
100.000	-6.633E-11	0.000	0.000	-5.624E-12	0.000	7.157E+10	
4.809E-06	435000.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationship.

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	=	0.7672645 inches
Computed slope at pile head	=	-0.0031521 radians
Maximum bending moment	=	1041374. inch-lbs
Maximum shear force	=	-13007. lbs
Depth of maximum bending moment	=	26.0000000 feet below pile head
Depth of maximum shear force	=	30.0000000 feet below pile head
Number of iterations	=	6
Number of zero deflection points	=	7

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

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	3000.0 lbs
Applied moment at pile head	=	1.0 in-lbs
Axial thrust load on pile head	=	235000.0 lbs

Depth Res.	Soil X	Deflect. Spr.	Bending Distrib. Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil p
	Es*h	Lat. y	Load					
feet	lb/inch	inches	in-lbs	lbs	radians	psi *	lb-in^2	lb/in
		lb/inch						
0.000	0.00	0.8522	1.0000	3000.0000	-0.003517	0.000	6.986E+10	
0.000	1.000	0.8100	45918.	3000.0000	-0.003513	0.000	6.986E+10	
0.000	2.000	0.7679	91813.	3000.0000	-0.003501	0.000	6.986E+10	

		ABUT - Strength		- SCOUR. Ip7o			
3.000	0.7259	137663.	3000.0000	-0.003481	0.000	6.987E+10	
0.000	0.000	0.000					
4.000	0.6843	183447.	3000.0000	-0.003454	0.000	6.987E+10	
0.000	0.000	0.000					
5.000	0.6431	229141.	3000.0000	-0.003418	0.000	6.987E+10	
0.000	0.000	0.000					
6.000	0.6023	274725.	3000.0000	-0.003375	0.000	6.987E+10	
0.000	0.000	0.000					
7.000	0.5621	320176.	3000.0000	-0.003324	0.000	6.987E+10	
0.000	0.000	0.000					
8.000	0.5225	365472.	3000.0000	-0.003265	0.000	6.987E+10	
0.000	0.000	0.000					
9.000	0.4837	410590.	3000.0000	-0.003198	0.000	6.987E+10	
0.000	0.000	0.000					
10.000	0.4457	455510.	3000.0000	-0.003124	0.000	6.986E+10	
0.000	0.000	0.000					
11.000	0.4087	500209.	3000.0000	-0.003042	0.000	6.986E+10	
0.000	0.000	0.000					
12.000	0.3727	544666.	3000.0000	-0.002952	0.000	6.986E+10	
0.000	0.000	0.000					
13.000	0.3379	588859.	3000.0000	-0.002855	0.000	6.986E+10	
0.000	0.000	0.000					
14.000	0.3042	632767.	3000.0000	-0.002750	0.000	6.985E+10	
0.000	0.000	0.000					
15.000	0.2719	676368.	3000.0000	-0.002637	0.000	6.985E+10	
0.000	0.000	0.000					
16.000	0.2409	719642.	3000.0000	-0.002517	0.000	6.984E+10	
0.000	0.000	0.000					
17.000	0.2115	762567.	3000.0000	-0.002390	0.000	6.984E+10	
0.000	0.000	0.000					
18.000	0.1836	805122.	3000.0000	-0.002255	0.000	6.983E+10	
0.000	0.000	0.000					
19.000	0.1573	847287.	3000.0000	-0.002113	0.000	6.982E+10	
0.000	0.000	0.000					
20.000	0.1328	889042.	3000.0000	-0.001964	0.000	6.981E+10	
0.000	0.000	0.000					
21.000	0.1102	930365.	3000.0000	-0.001808	0.000	6.979E+10	
0.000	0.000	0.000					
22.000	0.0895	971238.	3000.0000	-0.001644	0.000	6.978E+10	
0.000	0.000	0.000					
23.000	0.0707	1011639.	3000.0000	-0.001474	0.000	6.975E+10	
0.000	0.000	0.000					
24.000	0.0541	1051550.	3000.0000	-0.001296	0.000	6.973E+10	
0.000	0.000	0.000					
25.000	0.0396	1090951.	3000.0000	-0.001112	0.000	6.970E+10	
0.000	0.000	0.000					
26.000	0.0274	1129821.	291.4602	-0.000921	0.000	6.968E+10	
-451.4233	197723.	0.000					
27.000	0.0175	1103138.	-5064.2862	-0.000728	0.000	6.969E+10	
-441.2011	302255.	0.000					
28.000	0.009915	1012387.	-9729.6748	-0.000546	0.000	6.975E+10	
-336.3637	407110.	0.000					
29.000	0.004403	872708.	-12876.	-0.000384	0.000	6.982E+10	
-187.9654	512287.	0.000					
30.000	0.000691	705539.	-14217.	-0.000249	0.000	6.985E+10	
-35.5871	617787.	0.000					
31.000	-0.001566	532903.	-13864.	-0.000142	0.000	6.986E+10	
94.4239	723610.	0.000					
32.000	-0.002725	373607.	-12224.	-6.447E-05	0.000	6.987E+10	
178.8543	787742.	0.000					
33.000	-0.003113	239884.	-9923.0533	-1.179E-05	0.000	6.987E+10	
204.6825	788952.	0.000					
34.000	-0.003008	135520.	-7506.7466	2.045E-05	0.000	6.987E+10	

ABUT - Strength - SCOUR.lp7o							
198.0353	790161.	0.000					
	35.000	-0.002622	59607.	-5280.8533	3.720E-05	0.000	6.986E+10
172.9469	791371.	0.000					
	36.000	-0.002115	8569.7618	-3405.1766	4.306E-05	0.000	6.986E+10
139.6659	792581.	0.000					
	37.000	-0.001589	-22360.	-1936.4971	4.188E-05	0.000	6.986E+10
105.1140	793790.	0.000					
	38.000	-0.001110	-38142.	-864.7557	3.668E-05	0.000	6.986E+10
73.5096	795000.	0.000					
	39.000	-0.000709	-43321.	-141.5485	2.968E-05	0.000	6.986E+10
47.0250	796210.	0.000					
	40.000	-0.000397	-41707.	298.9610	2.238E-05	0.000	6.986E+10
26.3933	797419.	0.000					
	41.000	-0.000172	-36272.	525.8419	1.568E-05	0.000	6.986E+10
11.4202	798629.	0.000					
	42.000	-2.078E-05	-29175.	602.6724	1.006E-05	0.000	6.986E+10
1.3849	799839.	0.000					
	43.000	6.990E-05	-21865.	582.9835	5.679E-06	0.000	6.986E+10
-4.6664	801048.	0.000					
	44.000	0.000116	-15216.	508.6474	2.494E-06	0.000	6.986E+10
-7.7229	802258.	0.000					
	45.000	0.000130	-9671.2350	410.1770	3.570E-07	0.000	6.986E+10
-8.6888	803468.	0.000					
	46.000	0.000124	-5373.3673	308.1199	-9.351E-07	0.000	6.986E+10
-8.3207	804677.	0.000					
	47.000	0.000107	-2271.0838	214.9490	-1.592E-06	0.000	6.986E+10
-7.2077	805887.	0.000					
	48.000	8.589E-05	-205.6148	137.0435	-1.804E-06	0.000	6.986E+10
-5.7765	807097.	0.000					
	49.000	6.402E-05	1028.1366	76.5100	-1.734E-06	0.000	6.986E+10
-4.3124	808306.	0.000					
	50.000	4.428E-05	1640.4035	32.7144	-1.505E-06	0.000	6.986E+10
-2.9869	809516.	0.000					
	51.000	2.791E-05	1821.7684	3.4787	-1.207E-06	0.000	6.986E+10
-1.8858	810726.	0.000					
	52.000	1.530E-05	1730.7005	-14.0486	-9.021E-07	0.000	6.986E+10
-1.0355	811935.	0.000					
	53.000	6.262E-06	1489.6893	-22.8073	-6.255E-07	0.000	6.986E+10
-0.4243	813145.	0.000					
	54.000	2.911E-07	1186.8537	-25.4718	-3.956E-07	0.000	6.986E+10
-0.0198	814355.	0.000					
	55.000	-3.233E-06	880.5983	-24.2718	-2.181E-07	0.000	6.986E+10
0.2198	815565.	0.000					
	56.000	-4.943E-06	605.5604	-20.9348	-9.044E-08	0.000	6.986E+10
0.3364	816774.	0.000					
	57.000	-5.404E-06	378.6743	-16.7061	-5.908E-09	0.000	6.986E+10
0.3684	817984.	0.000					
	58.000	-5.085E-06	204.6483	-12.4133	4.419E-08	0.000	6.986E+10
0.3471	819194.	0.000					
	59.000	-4.343E-06	80.5058	-8.5491	6.868E-08	0.000	6.986E+10
0.2969	820403.	0.000					
	60.000	-3.436E-06	-0.9163	-5.3558	7.552E-08	0.000	6.986E+10
0.2353	821613.	0.000					
	61.000	-2.531E-06	-48.4593	-2.9029	7.128E-08	0.000	6.986E+10
0.1735	822823.	0.000					
	62.000	-1.726E-06	-70.9886	-1.1507	6.102E-08	0.000	6.986E+10
0.1185	824032.	0.000					
	63.000	-1.067E-06	-76.4201	0.000362	4.836E-08	0.000	6.986E+10
0.0733	825242.	0.000					
	64.000	-5.650E-07	-71.2526	0.6739	3.567E-08	0.000	6.986E+10
0.0389	826452.	0.000					
	65.000	-2.104E-07	-60.4469	0.9945	2.436E-08	0.000	6.986E+10
0.0145	827661.	0.000					

		ABUT	- Strength	- SCOUR.l p7o		
66.000	1.967E-08	-47.5224	1.0734	1.509E-08	0.000	6.986E+10
-0.001358	828871.	0.000				
67.000	1.518E-07	-34.7704	1.0023	8.022E-09	0.000	6.986E+10
-0.0105	830081.	0.000				
68.000	2.122E-07	-23.5133	0.8511	3.016E-09	0.000	6.986E+10
-0.0147	831290.	0.000				
69.000	2.242E-07	-14.3616	0.6696	-2.365E-10	0.000	6.986E+10
-0.0156	832500.	0.000				
70.000	2.065E-07	-7.4423	0.4902	-2.109E-09	0.000	6.986E+10
-0.0143	833710.	0.000				
71.000	1.735E-07	-2.5855	0.3316	-2.970E-09	0.000	6.986E+10
-0.0121	834919.	0.000				
72.000	1.352E-07	0.5338	0.2027	-3.147E-09	0.000	6.986E+10
-0.009423	836129.	0.000				
73.000	9.802E-08	2.2961	0.1051	-2.904E-09	0.000	6.986E+10
-0.006840	837339.	0.000				
74.000	6.555E-08	3.0723	0.0366	-2.442E-09	0.000	6.986E+10
-0.004580	838548.	0.000				
75.000	3.940E-08	3.1874	-0.007461	-1.905E-09	0.000	6.986E+10
-0.002757	839758.	0.000				
76.000	1.983E-08	2.9040	-0.0323	-1.382E-09	0.000	6.986E+10
-0.001390	840968.	0.000				
77.000	6.243E-09	2.4190	-0.0433	-9.245E-10	0.000	6.986E+10
-0.000438	842177.	0.000				
78.000	-2.358E-09	1.8697	-0.0449	-5.562E-10	0.000	6.986E+10
0.000166	843387.	0.000				
79.000	-7.105E-09	1.3434	-0.0410	-2.802E-10	0.000	6.986E+10
0.000500	844597.	0.000				
80.000	-9.084E-09	0.8885	-0.0341	-8.856E-11	0.000	6.986E+10
0.000640	845806.	0.000				
81.000	-9.231E-09	0.5253	-0.0264	3.286E-11	0.000	6.986E+10
0.000652	847016.	0.000				
82.000	-8.295E-09	0.2557	-0.0189	9.993E-11	0.000	6.986E+10
0.000586	848226.	0.000				
83.000	-6.832E-09	0.0704	-0.0125	1.279E-10	0.000	6.986E+10
0.000484	849435.	0.000				
84.000	-5.225E-09	-0.0453	-0.007387	1.301E-10	0.000	6.986E+10
0.000370	850645.	0.000				
85.000	-3.710E-09	-0.1076	-0.003584	1.170E-10	0.000	6.986E+10
0.000263	851855.	0.000				
86.000	-2.418E-09	-0.1320	-0.000972	9.638E-11	0.000	6.986E+10
0.000172	853065.	0.000				
87.000	-1.397E-09	-0.1315	0.000656	7.375E-11	0.000	6.986E+10
9.947E-05	854274.	0.000				
88.000	-6.478E-10	-0.1167	0.001530	5.243E-11	0.000	6.986E+10
4.619E-05	855484.	0.000				
89.000	-1.389E-10	-0.0951	0.001866	3.425E-11	0.000	6.986E+10
9.914E-06	856694.	0.000				
90.000	1.741E-10	-0.0721	0.001851	1.989E-11	0.000	6.986E+10
-1.245E-05	857903.	0.000				
91.000	3.385E-10	-0.0508	0.001631	9.342E-12	0.000	6.986E+10
-2.424E-05	859113.	0.000				
92.000	3.983E-10	-0.0330	0.001314	2.149E-12	0.000	6.986E+10
-2.856E-05	860323.	0.000				
93.000	3.901E-10	-0.0193	0.000975	-2.336E-12	0.000	6.986E+10
-2.801E-05	861532.	0.000				
94.000	3.422E-10	-0.009562	0.000659	-4.811E-12	0.000	6.986E+10
-2.461E-05	862742.	0.000				
95.000	2.747E-10	-0.003408	0.000393	-5.925E-12	0.000	6.986E+10
-1.977E-05	863952.	0.000				
96.000	2.000E-10	-0.000101	0.000188	-6.226E-12	0.000	6.986E+10
-1.442E-05	865161.	0.000				
97.000	1.252E-10	0.001130	4.687E-05	-6.138E-12	0.000	6.986E+10

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-9.040E-06	866371.	0.000					
98.000	5.273E-11	0.001059	-3.025E-05	-5.950E-12	0.000	6.986E+10	
-3.812E-06	867581.	0.000					
99.000	-1.758E-11	0.000438	-4.548E-05	-5.822E-12	0.000	6.986E+10	
1.273E-06	868790.	0.000					
100.000	-8.699E-11	0.000	0.000	-5.784E-12	0.000	6.986E+10	
6.307E-06	435000.	0.000					

* 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	=	0.8521646	inches
Computed slope at pile head	=	-0.0035167	radians
Maximum bending moment	=	1129821.	inch-lbs
Maximum shear force	=	-14217.	lbs
Depth of maximum bending moment	=	26.0000000	feet below pile head
Depth of maximum shear force	=	30.0000000	feet below pile head
Number of iterations	=	6	
Number of zero deflection points	=	7	

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Case No.	Load Type No.	Pile-head		Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs
		Condition 1 V(lbs) or y(inches)	Condition 2 Pile-head Rotation or in-lb/rad. radians			
1	1	V = 3000.0000	M = 1.0000	142000.	0.76726449	
1041374.		-13007.	-0.00315211			
2	1	V = 3000.0000	M = 1.0000	235000.	0.85216456	
1129821.		-14217.	-0.00351667			

The analysis ended normally.

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